

# **Bellrock Offshore Wind Farm**

## **Offshore Transmission Development Area**

**Scoping Report – Volume 1**

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# Executive Summary

Through the ScotWind leasing round managed by Crown Estate Scotland, Bellrock Offshore Wind Farm Limited (the **Applicant**) was successfully awarded an option to develop an area of seabed in the central North Sea, off the coast of Aberdeenshire, Scotland, to develop the Bellrock Offshore Wind Farm (the **Bellrock Project**).

The Bellrock Project is a proposed floating offshore wind farm, which will generate and transmit renewable electricity, exporting up to 1.8 gigawatts<sup>1</sup> to the National Electricity Transmission System via Scottish and Southern Energy Networks Transmission's Hurlie substation in Aberdeenshire, Scotland.

The Bellrock Project comprises the following three Development Areas for which separate consents and/or licence applications will be (or have been) sought by the Applicant:

- The Bellrock Offshore Transmission Development Area (OfTDA) within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA overlaps with the whole of the Bellrock Wind Farm Development Area (WFDA) and partially overlaps with the Bellrock Onshore Transmission Development Area (OnTDA). The Bellrock OfTDA extends seaward of Mean High Water Springs (MHWS);
- The Bellrock WFDA within which the Bellrock Wind Farm Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock WFDA is located 120 km east of Stonehaven (116 km southeast of Peterhead), Aberdeenshire; and
- The Bellrock OnTDA within which the Bellrock Onshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OnTDA extends landward of Mean Low Water Springs to the Hurlie substation and partially overlaps with the Bellrock OfTDA (from Mean Low Water Springs to MHWS).

The scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026. A Scoping Report for the Bellrock OnTDA is due for submission in 2026.

The Bellrock OfTDA Scoping Boundary is shown in **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))** (the latter shown on an admiralty chart background). The Bellrock Offshore Transmission Infrastructure includes:

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<sup>1</sup> Project capacities quoted throughout this **Bellrock OfTDA Scoping Report** are approximate. The final capacity will be confirmed within the Bellrock OfTDA EIA Report.

- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
- **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA, with associated cable protection where required;
- **Offshore export cables:** between two and six offshore export cables (either High Voltage Alternating Current or High Voltage Direct Current), approximately 200 km in length, with associated cable protection where required;
- **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s), located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
- **Scour protection:** for the OfSS(s) and the OfRCS(s) where required;
- **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
- Ancillary infrastructure including buoys.

The Bellrock Project will deliver significant supply chain expenditure within Scotland, have the potential to power the equivalent energy needs of over 1.7<sup>2</sup> million homes with renewable energy and will help achieve Scotland's net zero targets whilst improving energy security.

This **Bellrock OfTDA Scoping Report** accompanies a request for a formal Scoping Opinion submitted to the Marine Directorate - Licensing Operations Team (MD-LOT), acting on behalf of the Scottish Ministers, for the construction, operation and maintenance and decommissioning of the Bellrock Offshore Transmission Infrastructure located within the Bellrock OfTDA. The purpose of this **Bellrock OfTDA Scoping Report** is to provide MD-LOT and stakeholders with information on the Bellrock Offshore Transmission Infrastructure to inform the Scoping Opinion and enable engagement with stakeholders on the key issues to be addressed within the Bellrock OfTDA EIA Report, the baseline data sources and the assessment methodologies to be used.

This **Bellrock OfTDA Scoping Report** therefore presents a brief description of the nature and purpose of the Bellrock Offshore Transmission Infrastructure and its likely impact on the environment, the baseline data sources, and assessment methodologies proposed to be used in the Bellrock OfTDA EIA Report, a summary of the existing environment and justification for potential impacts to be scoped in or scoped out of the Bellrock OfTDA EIA Report. This **Bellrock OfTDA Scoping Report** includes the following technical chapters:

- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
- **Chapter 6: Intertidal and Benthic Ecology;**
- **Chapter 7: Fish and Shellfish Ecology;**

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<sup>2</sup> See [www.bellrockwind.co.uk](http://www.bellrockwind.co.uk) for further details.

- **Chapter 8: Marine Mammals;**
- **Chapter 9: Intertidal and Offshore Ornithology;**
- **Chapter 10: Commercial Fisheries;**
- **Chapter 11: Shipping and Navigation;**
- **Chapter 12: Aviation and Radar;**
- **Chapter 13: Marine Infrastructure and Other Users;**
- **Chapter 14: Marine Archaeology and Cultural Heritage;**
- **Chapter 15: Seascape, Landscape and Visual Impact;**
- **Chapter 16: Socioeconomics and Tourism;**
- **Chapter 17: Climate Change;**
- **Chapter 18: Offshore Air Quality; and**
- **Chapter 19: Major Accidents and Disasters.**

Alongside this **Bellrock OfTDA Scoping Report**, the **Bellrock OfTDA Habitats Regulations Appraisal Screening Report (Volume 2)**, and the **Bellrock OfTDA Marine Protected Area Screening Report (Volume 3)** have also been provided. The Applicant invites consultees to consider the information provided in these documents and provide comments on the proposed approach and, in particular, whether they agree with the conclusions drawn.

Subsequent to obtaining a Scoping Opinion, the Bellrock OfTDA EIA Report will be produced in support of an Application for a Marine Licence for the construction, operation and maintenance and decommissioning of the Bellrock Offshore Transmission Infrastructure under the following regulations:

- A Marine Licence from MD-LOT for the Bellrock OfTDA under the Marine and Coastal Access Act 2009 (applicable to Scottish offshore waters between 12 nautical miles (nm) and 200 nm); and
- A Marine Licence from MD-LOT for the Bellrock OfTDA under the Marine (Scotland) Act 2010 (applicable to Scottish inshore waters (i.e. within 12 nm of the coast and MHWS)).

As the Bellrock OfTDA, WFDA and OnTDA are being considered as three separate applications, the Bellrock OfTDA EIA Report will include a Bellrock OfTDA Whole Project Assessment to ensure a robust assessment. All impacts identified in the Bellrock OfTDA-alone assessment with a level of effect of negligible or greater will be taken forward to the Bellrock OfTDA Whole Project Assessment. Within the Bellrock OfTDA Whole Project Assessment, consideration will be given to whether there are interactions between the Bellrock Offshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure and/or the Bellrock Onshore Transmission Infrastructure that have the potential to alter the magnitude of impacts or level of effects identified in the Bellrock OfTDA-alone assessment. A Cumulative Effects Assessment will then be undertaken, considering other projects and plans in the wider area.

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## Glossary of Terminology

| Term                                                  | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Allision                                              | Contact between a moving object and a stationary object.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Applicant                                             | Bellrock Offshore Wind Farm Limited, the legal entity submitting a Marine Licence application for the Bellrock Offshore Transmission Development Area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Area of Search                                        | A geographic area within which site selection activities are undertaken.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Automatic Identification System                       | A system by which vessels automatically broadcast their identity, key statistics including location, destination, length, speed, and current status, e.g. under power. Most commercial vessels and United Kingdom (UK)/European Union (EU) fishing vessels over 15 metre (m) length are required to carry an Automatic Identification System.                                                                                                                                                                                                                                                                                                 |
| Bathymetry                                            | Topography of the seabed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bedload                                               | Sediment particles that travel near or on the bed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Bellrock Offshore Wind Farm (or the Bellrock Project) | <p>An offshore wind farm capable of exporting up to 1.8 GW of renewable energy to the National Electricity Transmission System.</p> <p>The Wind Farm Development Area is located 120 km east of Stonehaven, and will connect to the National Electricity Transmission System at the proposed SSEN Transmission Hurlie substation, west of Stonehaven in Aberdeenshire. The Bellrock Offshore Wind Farm comprises of the following Development Areas:</p> <ul style="list-style-type: none"><li>▪ Wind Farm Development Area;</li><li>▪ Offshore Transmission Development Area; and</li><li>▪ Onshore Transmission Development Area.</li></ul> |
| Bellrock OfTDA Whole Project Assessment               | Assessment of potential interactions between the Bellrock OfTDA impacts which overlap with the WFDA and OnTDA impacts, and how these interactions may influence the magnitude of impacts and the significance of effects identified for the Offshore Transmission Development Area.                                                                                                                                                                                                                                                                                                                                                           |
| Benthic/benthos                                       | Refers to anything associated or occurring on the bottom of a body of water (the seabed).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Biodiversity                                          | The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.                                                                                                                                                                                                                                                                                                                                                                               |
| Breeding season                                       | Furness (2015) defines breeding season as the period from modal return to the colony through to modal departure from the colony at the end of breeding, for birds at UK colonies.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Cable protection                                      | Protective measure to minimise the effects of scour and hazards along the interconnector and offshore export cables, and protecting these cables at infrastructure crossing points.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Carbon budget                                         | The cumulative amount of greenhouse gas emissions permitted over a defined period of time to achieve a certain climate target, which can be set at the national, regional, local or sectoral level.                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Term                                          | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Carbon dioxide equivalent (CO <sub>2</sub> e) | Carbon dioxide equivalent is a term for describing different greenhouse gases in a common unit. The unit takes the different global warming potentials of greenhouse gases into account. CO <sub>2</sub> e signifies the amount of CO <sub>2</sub> which would have the equivalent global warming impact.                                                                                                                                                                                                                         |
| Chronic climatic change                       | Long-term, gradual changes to weather patterns and the climate, also known as chronic climate hazards.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Climate                                       | The general weather conditions prevailing over a long period of time, which include seasonal averages and extremes.                                                                                                                                                                                                                                                                                                                                                                                                               |
| Climate change impact                         | An impact from a climate hazard which affects the ability of the receptor to maintain its functions or purpose.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Climate change projection                     | A possible climate outcome defined by the modelling of various climate variables.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Climate change resilience                     | The ability of a project and its receptors to prepare for, respond to, recover from and adapt to changes in the climate in a manner that ensures it retains much of its original function and purpose.                                                                                                                                                                                                                                                                                                                            |
| Climate hazard                                | A weather or climate-related event or trend in climate variable, which has potential to do harm to receptors such as increased precipitation or storms.                                                                                                                                                                                                                                                                                                                                                                           |
| Climate variable                              | A measurable, monitorable aspect of the weather or climate conditions such as temperature and wind speed.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Coastal zone                                  | The transitional area where land and sea interact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Collision                                     | Contact between moving objects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Commencement of construction                  | Commencement of construction to install the Offshore Transmission Infrastructure as authorised by the Offshore Transmission Development Area Marine Licence (excluding site preparation works), which may include the earlier of: <ul style="list-style-type: none"> <li>▪ Intrusive pre-installation surveys including pre-lay grapnel runs;</li> <li>▪ Placement on or installation in the seabed of export/inter-connector cables; or</li> <li>▪ Placement of materials on or in the seabed, e.g. scour protection.</li> </ul> |
| Construction port                             | Port that may be used during the construction of the Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Term                      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction works        | <p>Works to install the Offshore Transmission Infrastructure as authorised by the Offshore Transmission Development Area Marine Licence, such as:</p> <ul style="list-style-type: none"> <li>▪ Pre-installation surveys (intrusive and/or non-intrusive);</li> <li>▪ Offshore substation/offshore reactive compensation station installation and associated vessel activities; fixed foundation installation; scour protection installation; topside lifting, installation and integration; offshore lifting operations and testing and commissioning;</li> <li>▪ Offshore export cable installation and associated vessel activities, landfall installation (seaward of Mean High Water Springs), cable lay and burial, installation of cable crossings, cable installation at offshore substation/offshore reactive compensation station, installation of terminations at the offshore substation/offshore reactive compensation station, installation of subsea joints, post-lay burial and cable protection installation;</li> <li>▪ Final commissioning following cable connections and snagging; and</li> <li>▪ Post-installation surveys.</li> </ul> |
| Controlled airspace       | Defined airspace within which pilots must follow Air Traffic Control instructions implicitly. In the UK, Classes A, C, D, and E are areas of controlled airspace.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Creel                     | Pots and traps are generally rigid structures into which fish or shellfish are guided or enticed through funnels that make entry easy but from which escape is difficult. There are many different styles and designs, each one has been designed to suit the behaviour of its target species. Creel is typically a Scottish term for a pot or trap typically deployed by an inshore vessel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Decommissioning           | The process of removing, dismantling, or otherwise making safe of the Offshore Transmission Infrastructure at the end of its operational life, in accordance with the relevant regulatory requirements and an approved decommissioning strategy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Demersal                  | Living on or near the seabed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Development Area          | <p>For consenting purposes, the area for which separate consents and/or Marine Licences will be sought by the Applicant, comprising:</p> <ul style="list-style-type: none"> <li>▪ Wind Farm Development Area;</li> <li>▪ Offshore Transmission Development Area; and</li> <li>▪ Onshore Transmission Development Area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Fishing ground            | An area of water or seabed targeted by fishing activity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fixed bottom substructure | A substructure that provides support for the offshore substation or offshore reactive compensation station by transferring loads to the seabed, and provides a conduit for interconnector cable(s) and/or offshore export cables.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Floating substructure     | A floating structure which provides buoyancy and, in conjunction with the station keeping system, supports a superstructure (e.g. wind turbine generator or offshore substation), and maintaining its position within the structure's excursion limit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Floating offshore unit    | The combined wind turbine generator and floating substructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Term                                                                         | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Voltage Alternating Current                                             | An electrical power transmission system that uses alternating current (AC) at high voltages to transmit electricity efficiently over long distances. HVAC infrastructure includes HVAC offshore export cables, offshore substation(s) and offshore reactive compensation station(s) to collect, transform and transmit electricity to the National Electricity Transmission System.                                                               |
| High Voltage Direct Current                                                  | An electrical power transmission system that uses direct current (DC) at high voltages to transmit electricity efficiently over long distances. HVDC offshore infrastructure includes an offshore substation to collect, transform and convert electricity from alternating current (AC) to direct current (DC) and HVDC export cables for transmission to the onshore substation and connection to the National Electricity Transmission System. |
| Horizontal directional drill                                                 | A trenchless technique to bring the offshore export cables ashore at landfall.                                                                                                                                                                                                                                                                                                                                                                    |
| Hurlie substation                                                            | SSEN Transmission's substation, which will receive renewable electricity from the Bellrock Project's onshore substation and allow supply of renewable electricity to the National Electricity Transmission System.                                                                                                                                                                                                                                |
| Innovation and Targeted Oil and Gas                                          | A Crown Estate Scotland leasing round for offshore wind projects, under which the Sinclair Offshore Wind Farm and the Scaraben Offshore Wind Farm were awarded Exclusivity Agreements for their respective Wind Farm Development Areas, under which early-stage development works are progressing.                                                                                                                                                |
| Inter-array cable                                                            | Armoured cable containing electrical and fibre optic cores, which link the wind turbine generators to each other and to the subsea cable hubs and/or the offshore substations and include dynamic inter-array cable and static inter-array cable sections.                                                                                                                                                                                        |
| Interconnector cable                                                         | Armoured cable containing electrical and fibre optic cores which link two or more offshore substations.                                                                                                                                                                                                                                                                                                                                           |
| International Council for the Exploration of the Seas statistical rectangles | International Council for the Exploration of the Seas (ICES) standardise the division of sea areas to enable statistical analysis of data. Each ICES statistical rectangle is '30 min latitude by 1 degree longitude' in size (approximately 30 x 30 nautical miles). A number of rectangles are amalgamated to create ICES statistical areas.                                                                                                    |
| Intertidal area                                                              | The area located between Mean Low Water Springs and Mean High Water Springs.                                                                                                                                                                                                                                                                                                                                                                      |
| Landfall                                                                     | The area in which the offshore export cables come ashore and transition between the offshore export cables and the onshore export cables. For the purpose of the Offshore Transmission Development Area, the landfall includes the area seaward of Mean High Water Springs.                                                                                                                                                                       |
| Landfall Area of Search                                                      | The area within which the landfall site selection process is undertaken, and which reduces in size to as the landfall site selection process progresses.                                                                                                                                                                                                                                                                                          |
| Landings                                                                     | Quantitative description of the amount of fish returned to port for sale, in terms of value or weight.                                                                                                                                                                                                                                                                                                                                            |
| Lowest Astronomical Tide                                                     | The lowest level that can be expected to occur under average meteorological conditions and under any combination of astronomical conditions.                                                                                                                                                                                                                                                                                                      |
| Marking buoy                                                                 | Used to delineate spatial features/restrictions within the Offshore Transmission Development Area.                                                                                                                                                                                                                                                                                                                                                |

| Term                                          | Definition                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marshalling port                              | A port where Offshore Transmission Infrastructure components are stored on a temporary basis prior to transport to the Offshore Transmission Development Area or construction port.                                                                                                        |
| Mean High Water Springs                       | The average over a year of the heights of two successive high waters during those periods of 24 hours (once every fortnight) when the range of the tide is greatest.                                                                                                                       |
| Mean Low Water Springs                        | The average over a year of the heights of two successive low waters during those periods of 24 hours (once every fortnight) when the range of the tide is greatest.                                                                                                                        |
| Mean Sea Level                                | The average level of the sea taking account of all tidal effects but excluding surge events.                                                                                                                                                                                               |
| National Electricity Transmission System      | The high-voltage electricity power transmission network serving Great Britain which receives electricity from generators (such as offshore wind farms) and transmits that electricity to anywhere on the National Electricity Transmission System to satisfy demand.                       |
| Nature Conservation Marine Protected Area     | A type of marine protected area that can be designated in Scottish territorial and offshore waters.                                                                                                                                                                                        |
| Navigational Risk Assessment                  | Document required by the Maritime and Coastguard Agency (MCA) under Marine Guidance Note (MGN) 654 which assesses risk associated with on Offshore Renewable Energy Installation (OREI) to shipping and navigation users.                                                                  |
| Non-breeding season                           | Furness (2015) defines the non-breeding season as the remaining part of the year that is not a part of breeding season.                                                                                                                                                                    |
| Numerical modelling                           | Refers to the analysis of coastal processes using computational models.                                                                                                                                                                                                                    |
| Offshore export cable                         | Armoured cable containing electrical and fibre optic cores between the offshore substation(s), offshore reactive compensation station(s) and the transition joint bay(s).                                                                                                                  |
| Offshore export cable corridor                | The section of the Offshore Transmission Development Area within which the offshore export cable route will be located.                                                                                                                                                                    |
| Offshore export cable route                   | The area within the offshore export cable corridor where construction and commissioning of the offshore export cables will be undertaken and will involve (but not limited to) seabed preparation, trenching, installation and burial of offshore export cables, and cable protection.     |
| Offshore reactive compensation Area of Search | The area within which the offshore reactive compensation site selection process is undertaken, and which reduces in size to as the offshore reactive compensation site selection process progresses.                                                                                       |
| Offshore reactive compensation station        | A fixed bottom substructure offshore platform located within the offshore export cable corridor that accommodates reactive compensation equipment used to control reactive power flows and maintain acceptable voltage levels in the high voltage alternating current transmission system. |



| Term                                   | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Offshore substation                    | A fixed bottom substructure offshore platform which houses electrical equipment such as transformers, switchgear, and protection and control systems, enabling the wind farm's renewable electricity to be received via inter-array cables and exported via the offshore export cables.                                                                                                                                                                                                                                          |
| Offshore Transmission Development Area | The boundary within which the Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned seaward of Mean High Water Springs (and overlaps the whole of the Wind Farm Development Area and partially overlaps with the Onshore Development Area at landfall).                                                                                                                                                                                                                          |
| Offshore Transmission Infrastructure   | Infrastructure located within the Offshore Transmission Development Area including fixed bottom offshore substation(s), fixed bottom offshore reactive compensation station(s) and associated scour protection; interconnector cable(s) and associated cable protection; landfall (seaward of Mean High Water Springs), and offshore export cables and associated cable protection (including activities associated with the Offshore Transmission Infrastructure construction, operation and maintenance, and decommissioning). |
| Onshore export cables                  | Electrical and fibre optic cables between the transition joint bay(s) at landfall to the onshore substation and onward to the Hurlie substation which may be laid directly within cable ducts or protective troughs.                                                                                                                                                                                                                                                                                                             |
| Onshore substation                     | Onshore substation which will be fenced and house electrical equipment (such as transformers, reactive compensation equipment, harmonic filters, switchgear, and protection and control systems), thereby enabling renewable electricity from the wind farm to be received via the onshore export cables and exported to the National Electricity Transmission System.                                                                                                                                                           |
| Onshore Transmission Development Area  | The boundary within which the Onshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned (and partially overlaps with the Offshore Transmission Development Area at the landfall).                                                                                                                                                                                                                                                                                                     |
| Onshore Transmission Infrastructure    | Infrastructure located within the Onshore Transmission Development Area including transition joint bay(s); onshore export cables; onshore substation; temporary construction compounds; temporary working areas; environmental mitigation areas; drainage/irrigation infrastructure; access works; and any other associated infrastructure (including activities associated with the Onshore Transmission Infrastructure construction, operation and maintenance, and decommissioning).                                          |
| Operational life                       | The expected operational life of the Offshore Transmission Infrastructure from the Commercial Operation Date to the first component of the Offshore Transmission Infrastructure being decommissioned.                                                                                                                                                                                                                                                                                                                            |
| OSPAR                                  | OSPAR started in 1972 with the Oslo Convention against dumping and was broadened to cover land-based sources of marine pollution and the offshore industry by the Paris Convention of 1974. These two conventions were unified, up-dated and extended by the 1992 OSPAR Convention. OSPAR is so named because of the original Oslo and Paris Conventions ("OS" for Oslo and "PAR" for Paris).                                                                                                                                    |
| Otter trawl                            | A net with large rectangular boards (otter boards) which are used to keep the mouth of the trawl net open. Otter boards are made of timber or steel and are positioned in such a way that the hydrodynamic forces, acting on them when the net is towed along the seabed, pushes them outwards and prevents the mouth of the net from closing.                                                                                                                                                                                   |
| Pelagic                                | Of or relating to the open sea.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Term                         | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pelagic trawl                | A net used to target fish species in the mid water column.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Pile blow energy             | The kinetic energy delivered to the top of a pile by the piling hammer' at the exact moment of impact. It determines the hammer's ability to drive the pile to its required depth and is measured in kilojoules (kJ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Primary Surveillance Radar   | A radar system that measures the bearing and distance of targets using the detected reflections of radio signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Project Design Envelope      | Includes all relevant technical, spatial and temporal elements of the Offshore Transmission Infrastructure, and the proposed methodology to be employed for construction, operations and maintenance, and decommissioning.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Quaternary                   | The last two million years of earth history.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Ramp-up                      | Ramp-up follows on from the soft start piling procedure. It comprises a specified minimum period of piling, starting at the highest low-energy blow level achieves in the soft start and gradually increasing in hammer energy. The maximum hammer energy required (operational power for that specific pile) must not be reached within the ramp-up period.                                                                                                                                                                                                                                                                                                                                                     |
| Safety Zone                  | An area of water around or adjacent to an offshore substation or offshore reactive compensation station which is to be constructed, operated or decommissioned, from which certain or all classes of vessels are excluded and within which activities can be regulated for the purpose of securing safety of the vessel in that vicinity, and individuals on the structure and vessel, in line with Section 95 of the Energy Act 2004.                                                                                                                                                                                                                                                                           |
| Scoping Boundary             | The area considered at the scoping stage within which the relevant Development Area and its associated infrastructure is expected to be developed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| ScotWind                     | A Crown Estate Scotland leasing round for offshore wind projects in which the process enabled developers to apply for seabed rights to plan and build wind farms in Scottish waters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Scour protection             | Protective material positioned around fixed substructures to avoid sediment being eroded as a result of the flow of water.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Sediment transport           | The movement of a mass of sediment by the forces of currents and waves.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Secondary Surveillance Radar | A radar system that transmits interrogation pulses and receives transmitted responses from suitably equipped targets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Site preparation works       | <p>Preparatory activities undertaken within the Offshore Transmission Development Area prior to the commencement of construction of the Offshore Transmission Infrastructure, which may comprise (and which may require separate consents):</p> <ul style="list-style-type: none"> <li>▪ Surveys, including geophysical surveys, geotechnical surveys and non-archaeological/archaeological diver/remotely operated vehicle surveys;</li> <li>▪ Seabed preparation including sand wave levelling, boulder clearance, and pre-lay grapnel runs;</li> <li>▪ Unexploded ordnance survey and/or clearance;</li> <li>▪ Debris clearance; and</li> <li>▪ Out of service cable/pipeline removal/ protection.</li> </ul> |

| Term                               | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Soft start                         | The procedure used to commence piling at a low hammer energy. The soft start procedure consists of low-energy blows which are followed by the ramp-up procedure.                                                                                                                                                                                                                                                                                                   |
| Sound exposure level               | The constant sound level acting for one second, which has the same amount of acoustic energy, as indicated by the square of the sound pressure, as the original sound. It is the time-integrated, sound-pressure-squared level. SEL is typically used to compare transient sound events having different time durations, pressure levels, and temporal characteristics.                                                                                            |
| Station keeping system             | The system (including mooring lines and anchors) used to hold a floating offshore unit within its excursion limit and maintain the intended orientation of the floating offshore unit.                                                                                                                                                                                                                                                                             |
| Strategic Environmental Assessment | In Scotland, public bodies and private companies operating in a public character, such as utility companies, are required to assess, consult on, and monitor the likely impacts their plans, programmes and strategies will have on the environment. This process is known as Strategic Environmental Assessment (SEA).                                                                                                                                            |
| Stratification                     | Describes two distinct layers occupying the vertical water column in the sea with the near-surface layer less dense than the near-bed layer.                                                                                                                                                                                                                                                                                                                       |
| Subsea cable hub                   | A subsea device, with a gravel pad foundation, which allows the connection of multiple inter-array cables.                                                                                                                                                                                                                                                                                                                                                         |
| Substrate                          | An underlying substance or layer, such as the surface or material on or from which an organism lives, grows, or obtains its nourishment.                                                                                                                                                                                                                                                                                                                           |
| Supply Chain Development Statement | Required as part of ScotWind leasing, the Supply Chain Development Statement (SCDS) provides a structure for project specific supply chain information to be communicated with government and industry, through the initial stages of project development to deployment and into operations.                                                                                                                                                                       |
| Suspended sediment                 | The sediment moving in suspension in a fluid kept up by the upward components of the turbulent currents or by the colloidal suspension.                                                                                                                                                                                                                                                                                                                            |
| Swept area ratio                   | Swept area ratio (derived from Vessel Monitoring System data) indicates the number of times in an annual period that a fishing gear makes contact with (or sweeps) the seabed surface. Surface swept area ratio provides a proxy for fishing intensity.                                                                                                                                                                                                            |
| Switchgear                         | Electrical equipment used to control, protect, and isolate electrical circuits and equipment.                                                                                                                                                                                                                                                                                                                                                                      |
| Temporary construction compound    | Area within the Onshore Transmission Development Area used temporarily to support the construction and commissioning, which may include (but not limited to) trenchless crossing work areas, office, welfare and workshop facilities; vehicle parking; spoil, material and equipment laydown and/or storage; drainage infrastructure; wheel washing facilities; and lighting, fencing and security. Includes primary, temporary and trenchless crossing compounds. |
| Tidal current                      | The alternating horizontal movement of water associated with the rise and fall of the tide.                                                                                                                                                                                                                                                                                                                                                                        |
| Towing                             | Transportation of components either in water or on a barge using tug vessels, from a port to their offshore installation location.                                                                                                                                                                                                                                                                                                                                 |

| Term                       | Definition                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transition joint bay       | An underground structure at the landfall accessed by manhole or other means which accommodates the jointing of the offshore export cables and the onshore export cables. A fence may be installed around the access manhole for protection.                                                                                                                                                                                            |
| Trenchless technique       | A subsurface construction method, such as horizontal directional drilling, used to install ducts and offshore export cables with no surface excavation between the entry and exit points.                                                                                                                                                                                                                                              |
| Vessel Monitoring System   | A system used in commercial fishing to allow environmental and fisheries regulatory organisations to monitor, minimally, the position, time at a position, and course and speed of fishing vessels.                                                                                                                                                                                                                                    |
| Wind Farm Development Area | The boundary within which the Wind Farm Infrastructure will be constructed, operated and maintained, and decommissioned.                                                                                                                                                                                                                                                                                                               |
| Wind Farm Infrastructure   | Infrastructure located within the Wind Farm Development Area including wind turbine generators; floating substructures, station keeping systems and associated scour protection; inter-array cables and associated cable protection; subsea cable hubs; and ancillary infrastructure including buoys (including activities associated with the Wind Farm Infrastructure construction, operation and maintenance, and decommissioning). |
| Wind turbine generator     | A wind turbine generator converts wind energy into electrical energy. The main components include rotor assembly (composed of three blades and a hub); nacelle (containing the generator, shaft and gearbox, power electronic converter and transformer); and a tower (containing lifting equipment and switchgear).                                                                                                                   |

## Glossary of Abbreviations

| Abbreviation    | Definition                                                                                                |
|-----------------|-----------------------------------------------------------------------------------------------------------|
| AARA            | Air-to-air refuelling areas                                                                               |
| AEZ             | Archaeological exclusion zone                                                                             |
| AIP             | Aeronautical Information Publication                                                                      |
| AIS             | Automatic Identification System                                                                           |
| ALARP           | As Low As Reasonably Practicable                                                                          |
| ASCOBANS        | Agreement on the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas |
| ATC             | Air traffic control                                                                                       |
| ATS             | Air Traffic Services                                                                                      |
| BDMPS           | Biologically Defined Minimum Population Scales                                                            |
| BEIS            | Department for Business, Energy and Industrial Strategy                                                   |
| BGS             | British Geological Survey                                                                                 |
| BTO             | British Trust for Ornithology                                                                             |
| CAA             | Civil Aviation Authority                                                                                  |
| CAP             | Civil Aviation Publication                                                                                |
| CaP             | Cable Plan                                                                                                |
| CBRA            | Cable Burial Risk Assessment                                                                              |
| CCC             | Climate Change Committee                                                                                  |
| CCR             | Climate Change Risk                                                                                       |
| CCS             | Carbon Capture Storage                                                                                    |
| CEA             | Cumulative Effects Assessment                                                                             |
| CEF             | Cumulative Effects Framework                                                                              |
| CES             | Crown Estate Scotland                                                                                     |
| CES             | Coastal East Scotland                                                                                     |
| CH <sub>4</sub> | Methane                                                                                                   |
| CIEEM           | Chartered Institute of Ecology and Environmental Management                                               |
| CMS             | Construction Method Statement                                                                             |

| <b>Abbreviation</b> | <b>Definition</b>                                                            |
|---------------------|------------------------------------------------------------------------------|
| CO <sub>2</sub>     | Carbon dioxide                                                               |
| CO <sub>2</sub> e   | Carbon dioxide equivalent                                                    |
| COLREGs             | Convention on the International Regulations for Preventing Collisions at Sea |
| CTA                 | Control Area                                                                 |
| CTR                 | Control Zone                                                                 |
| DAS                 | Digital aerial survey                                                        |
| Defra               | Department for Environmental Food and Rural Affairs                          |
| DESNZ               | Department for Energy Security and Net Zero                                  |
| DP                  | Decommissioning Programme                                                    |
| DSLIP               | Development Specification and Layout Plan                                    |
| ECA                 | Emission Control Areas                                                       |
| eDNA                | Environmental DNA                                                            |
| EDR                 | Effective Deterrent Range                                                    |
| EEA                 | European Economic Area                                                       |
| EGL                 | Eastern Green Link                                                           |
| EIA                 | Environmental Impact Assessment                                              |
| EMF                 | Electromagnetic fields                                                       |
| EMODnet             | European Marine Observation and Data Network                                 |
| EMP                 | Environmental Management Plan                                                |
| EPS                 | European Protected Species                                                   |
| ERCoP               | Emergency Response Cooperation Plan                                          |
| ESCA                | European Subsea Cables Association                                           |
| ESO                 | Electricity System Operator                                                  |
| EU                  | European Union                                                               |
| EUNIS               | European Nature Information System                                           |
| FBSS                | Fixed bottom substructure                                                    |
| FeAST               | Feature Activity Sensitivity Tool                                            |
| FIR                 | Flight Information Region                                                    |

| <b>Abbreviation</b> | <b>Definition</b>                                             |
|---------------------|---------------------------------------------------------------|
| FiSMaDiM            | Fisheries Sensitivity Mapping and Displacement Modelling      |
| FL                  | Flight Level                                                  |
| FLOWW               | Fisheries Liaison with Offshore Wind and Wet Renewables Group |
| FSA                 | Formal Safety Assessment                                      |
| FWPM                | Freshwater pearl mussel                                       |
| GB                  | Great Britain                                                 |
| GBP                 | Great British Pound                                           |
| GCR                 | Geological Conservation Review                                |
| GeMS                | Geodatabase of Marine features adjacent to Scotland           |
| GHG                 | Greenhouse gas                                                |
| GNS                 | Greater North Sea                                             |
| GP                  | General Practitioner                                          |
| GVA                 | Gross Value Added                                             |
| GW                  | Gigawatt                                                      |
| GWP                 | Global warming potential                                      |
| HES                 | Historic Environment Scotland                                 |
| HM                  | His/her Majesty's                                             |
| HMPA                | Historic Marine Protected Area                                |
| HMRI                | Helicopter Main Routing Indicator                             |
| HND                 | Holistic Network Design                                       |
| HPAI                | Highly pathogenic avian influenza                             |
| HRA                 | Habitats Regulations Appraisal                                |
| IALA                | International Association of Lighthouse Authorities           |
| ICE                 | Institute of Civil Engineers                                  |
| ICES                | International Council for the Exploration of the Seas         |
| IEF                 | Important Ecological Feature                                  |
| IEMA                | Institute of Environmental Management and Assessment          |
| IFP                 | Instrument Flight Procedure                                   |

| <b>Abbreviation</b> | <b>Definition</b>                                                   |
|---------------------|---------------------------------------------------------------------|
| IMO                 | International Maritime Organization                                 |
| INNS                | Invasive non-native species                                         |
| INNSMP              | Invasive Non-native Species Mitigation Plan                         |
| INTOG               | Innovation and Targeted Oil and Gas                                 |
| IPCC                | Intergovernmental Panel on Climate Change                           |
| iPCoD               | Interim Population Consequences of Disturbance Model                |
| ISO                 | International Organization for Standardization                      |
| IUCN                | International Union for Conservation of Nature                      |
| JNAPC               | Joint Nautical Archaeology Policy Committee                         |
| JNCC                | Joint Nature Conservation Committee                                 |
| LAT                 | Lowest Astronomical Tide                                            |
| LCT                 | Landscape Character Type                                            |
| LDP                 | Local Development Plan                                              |
| LMP                 | Lighting and Marking Plan                                           |
| LUC                 | Land Use Consultants                                                |
| MAIB                | Marine Accident Investigation Branch                                |
| MarESA              | Marine Evidence-Based Sensitivity Assessments                       |
| MARPOL              | International Convention for the Prevention of Pollution from Ships |
| MBES                | Multi-beam echo sounder                                             |
| MCA                 | Maritime and Coastguard Agency                                      |
| MCAA                | Marine and Coastal Access Act                                       |
| MD-LOT              | Marine Directorate Licensing Operations Team                        |
| MD-MAU              | Marine Directorate Marine Analytical Unit                           |
| MD-SEDD             | Marine Directorate Science Evidence Data and Digital                |
| MGN                 | Marine Guidance Note                                                |
| MHWS                | Mean High Water Springs                                             |
| MM                  | Mean maximum                                                        |
| MMMP                | Marine Mammal Mitigation Protocol                                   |



| <b>Abbreviation</b> | <b>Definition</b>                           |
|---------------------|---------------------------------------------|
| MMO                 | Marine Management Organisation              |
| MOD                 | Ministry of Defence                         |
| MPA                 | Marine Protected Area                       |
| MPCP                | Marine Pollution Contingency Plan           |
| MSL                 | Mean Sea Level                              |
| MU                  | Management Unit                             |
| MW                  | Megawatt                                    |
| N <sub>2</sub> O    | Nitrous oxide                               |
| ncMPA               | Nature Conservation Marine Protected Area   |
| NDC                 | Nationally Determined Contribution          |
| NEEOG               | North East and East Ornithology Group       |
| NESO                | National Energy System Operator             |
| NF <sub>3</sub>     | Nitrogen trifluoride                        |
| NH <sub>3</sub>     | Ammonia                                     |
| NLB                 | Northern Lighthouse Board                   |
| NMFS                | National Marine Fisheries Service           |
| NMPi                | National Marine Plan Interactive            |
| NNG                 | Neart Na Gaoithe                            |
| NO <sub>x</sub>     | Nitrogen oxide                              |
| NPF4                | National Planning Framework 4               |
| NRA                 | Navigational Risk Assessment                |
| NRHE                | National Record of the Historic Environment |
| NS                  | North Sea                                   |
| NSTA                | North Sea Transition Authority              |
| O&M                 | Operation and maintenance                   |
| OfRCS               | Offshore reactive compensation station      |
| OfSS                | Offshore substation                         |
| OfTDA               | Offshore Transmission Development Area      |

| <b>Abbreviation</b> | <b>Definition</b>                                                                      |
|---------------------|----------------------------------------------------------------------------------------|
| ONS                 | Office for National Statistics                                                         |
| OnTDA               | Onshore Transmission Development Area                                                  |
| OREI                | Offshore Renewable Energy Installation                                                 |
| OSPAR               | The Convention for the Protection of the Marine Environment of the North-East Atlantic |
| OWEKH               | Offshore Wind Evidence + Knowledge Hub                                                 |
| OWF                 | Offshore wind farm                                                                     |
| OWIC                | Offshore Wind Industry Council                                                         |
| PAC                 | Pre-application Consultation                                                           |
| PAD                 | Protocol for Archaeological Discoveries                                                |
| PAN                 | Planning Advice Note                                                                   |
| PDE                 | Project Design Envelope                                                                |
| PEXA                | Practice and Exercise Areas                                                            |
| PMF                 | Priority Marine Feature                                                                |
| PNMP                | Piling Noise Mitigation Plan                                                           |
| PSR                 | Primary Surveillance Radar                                                             |
| PTS                 | Permanent Threshold Shift                                                              |
| QSR                 | Quality Status Report                                                                  |
| RCP                 | Representative Concentration Pathway                                                   |
| RIAA                | Report to Inform Appropriate Assessment                                                |
| RIFG                | Regional Inshore Fisheries Group                                                       |
| RMP                 | Regional Marine Plan                                                                   |
| RNLI                | Royal National Lifeboat Institution                                                    |
| RYA                 | Royal Yachting Association                                                             |
| SAC                 | Special Area of Conservation                                                           |
| SAR                 | Search and rescue                                                                      |
| SBP                 | Sub-bottom profiler                                                                    |
| SCANS               | Small Cetaceans in European Atlantic waters and the North Sea                          |
| SCOS                | Special Committee on Seals                                                             |

| <b>Abbreviation</b> | <b>Definition</b>                                      |
|---------------------|--------------------------------------------------------|
| SD                  | Standard Deviation                                     |
| SEIA                | Socioeconomic Impact Assessment                        |
| SEPA                | Scottish Environment Protection Agency                 |
| SF <sub>6</sub>     | Sulphur hexafluoride                                   |
| SFF                 | Scottish Fishermen's Federation                        |
| SLA                 | Special Landscape Area                                 |
| SLVIA               | Seascape, Landscape and Visual Impact Assessment       |
| SMP                 | Sectoral Marine Plan                                   |
| SMP-OWE             | Sectoral Marine Plan for Offshore Wind Energy          |
| SNH                 | Scottish Natural Heritage                              |
| SNMP                | Scotland's National Marine Plan                        |
| SO <sub>2</sub>     | Sulphur dioxide                                        |
| SOLAS               | International Convention for the Safety of Life at Sea |
| SO <sub>x</sub>     | Sulphur oxide                                          |
| SPA                 | Special Protection Area                                |
| SSC                 | Suspended sediment concentration                       |
| SSE                 | Scottish and Southern Electricity                      |
| SSEP                | Strategic Spatial Energy Plan                          |
| SSR                 | Secondary Surveillance Radar                           |
| SSS                 | Side scan sonar                                        |
| SSSI                | Site of Special Scientific Interest                    |
| SWFPA               | Scottish White Fish Producers Association              |
| TMZ                 | Transponder Mandatory Zone                             |
| TRA                 | Temporary Reserved Area                                |
| TWP                 | Thistle Wind Partners                                  |
| UK                  | United Kingdom                                         |
| UKASH               | United Kingdom Atlas of Seabed Habitats                |
| UKCP                | United Kingdom Climate Projection                      |

| <b>Abbreviation</b> | <b>Definition</b>                                                |
|---------------------|------------------------------------------------------------------|
| UKHO                | United Kingdom Hydrographic Office                               |
| UNESCO              | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC              | United Nations Framework Convention on Climate Change            |
| USBL                | Ultra-short baseline                                             |
| UWN                 | Underwater noise                                                 |
| UXO                 | Unexploded ordnance                                              |
| VFR                 | Visual Flight Rule                                               |
| VMNSP               | Vessel Management and Navigational Safety Plan                   |
| VMS                 | Vessel Monitoring System                                         |
| VTs                 | Vessel Traffic Service                                           |
| WEBS                | Wetland Bird Survey                                              |
| WFD                 | Water Framework Directive                                        |
| WFDA                | Wind Farm Development Area                                       |
| WSI                 | Written Scheme of Investigation                                  |
| WTG                 | Wind turbine generator                                           |
| Zol                 | Zone of Influence                                                |
| ZTV                 | Zone of Theoretical Visibility                                   |

# 1 Introduction

1. This Bellrock Offshore Wind Farm (the '**Bellrock Project**') **Offshore Transmission Development Area (OfTDA) Scoping Report** accompanies a request for a formal Scoping Opinion from the Marine Directorate - Licensing Operations Team (MD-LOT), acting on behalf of the Scottish Ministers, for the construction, operation and maintenance (O&M) and decommissioning of the Bellrock Offshore Transmission Infrastructure located within the Bellrock OfTDA.
2. This **Bellrock OfTDA Scoping Report** is accompanied by the **Bellrock OfTDA Habitat Regulations Appraisal (HRA) Screening Report (Volume 2)**, and the **Bellrock OfTDA Marine Protected Area (MPA) Screening Assessment (Volume 3)**.

## 1.1 Bellrock Project Overview

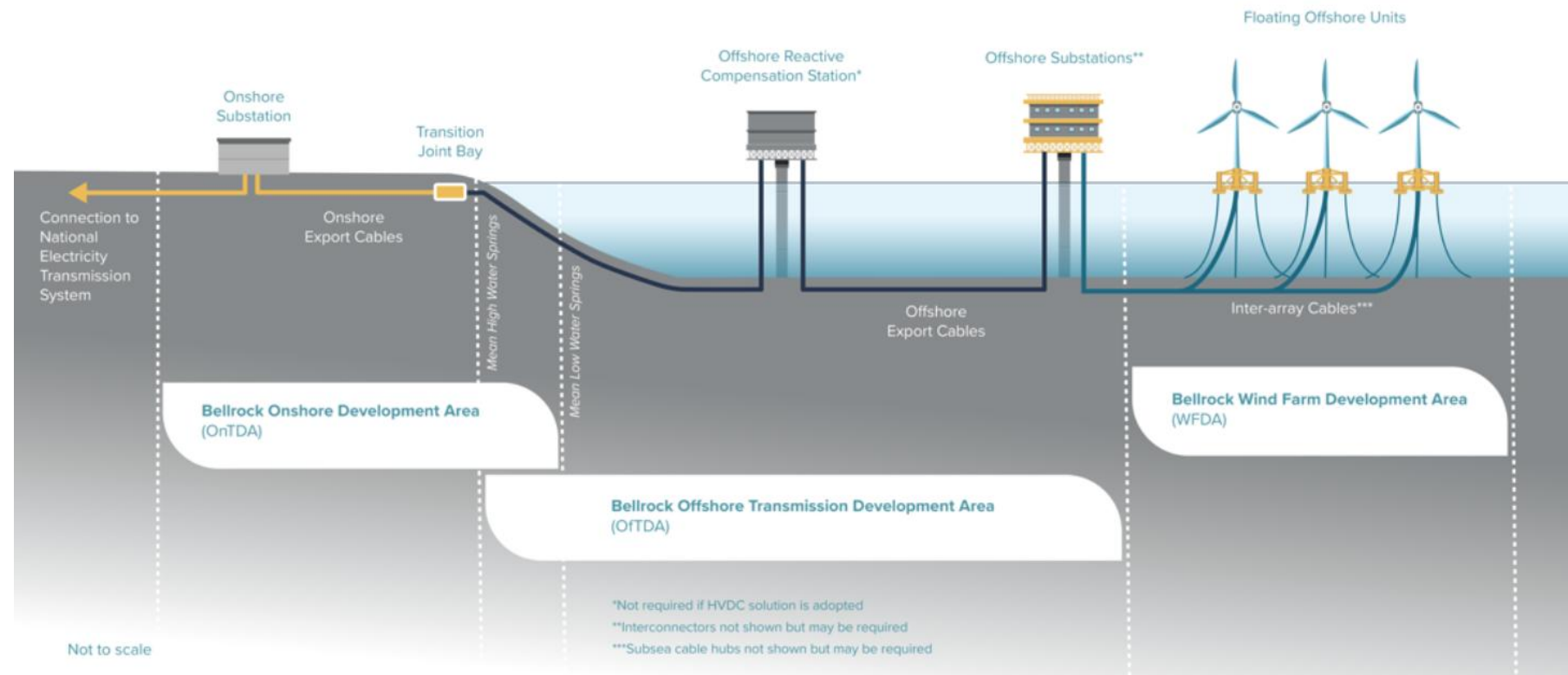
3. In January 2022, as part of the ScotWind leasing round managed by Crown Estate Scotland, Bellrock Offshore Wind Farm Limited (the Applicant) was successfully awarded an option to develop of an area of seabed in the central North Sea, off the coast of Aberdeenshire, Scotland, to develop the Bellrock Project.
4. The Bellrock Project is a proposed floating offshore wind farm, which will generate and transmit renewable electricity, exporting up to 1.8 gigawatts (GW) to the National Electricity Transmission System via Scottish and Southern Energy Networks Transmission's Hurlie substation<sup>3</sup> in Aberdeenshire, Scotland (see **Section 1.2** for further details). The Bellrock Project comprises the following three Development Areas (shown schematically in **Plate 1.1**) for which separate consents and/or licence applications will be (or have been) sought by the Applicant (see **Section 1.5** for details on the consents strategy):
  - The Bellrock OfTDA within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA overlaps with the whole of the Bellrock Wind Farm Development Area (WFDA) and partially overlaps with the Bellrock Onshore Transmission Development Area (OnTDA). The Bellrock OfTDA extends seaward of Mean High Water Springs (MHWS);
  - The Bellrock WFDA within which the Bellrock Wind Farm Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock WFDA is located 120 km east of Stonehaven (116 km southeast of Peterhead), Aberdeenshire; and

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<sup>3</sup> At the time of writing this **Bellrock OfTDA Scoping Report**, the Hurlie substation is subject to a planning appeal to the Scottish Ministers. The Hurlie substation remains the Bellrock Project's defined point of connection to the National Electricity Transmission System (as directed by the National Energy System Operator) and therefore the Applicant continues to progress the Bellrock Project on this basis.

- The Bellrock OnTDA within which the Bellrock Onshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OnTDA extends landward of Mean Low Water Springs to the Hurlie substation and partially overlaps with the Bellrock OfTDA (from Mean Low Water Springs to MHWS).
- 5. The location of the Bellrock OfTDA Scoping Boundary is shown in **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))** (the latter shown on an admiralty chart background).
- 6. This **Bellrock OfTDA Scoping Report** considers the Bellrock OfTDA only. The Bellrock Offshore Transmission Infrastructure is discussed in **Chapter 3: Project Description** and comprises:
  - **Offshore substation(s) (OfSS(s))**: up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s)**: up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables**: between two and six offshore export cables (either High Voltage Alternating Current or High Voltage Direct Current), each approximately 170 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s))**: up to two fixed bottom substructure OfRCS(s), located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection**: for the OfSS(s) and the OfRCS(s) where required;
  - **Landfall**: between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.
- 7. This **Bellrock OfTDA Scoping Report** considers all infrastructure and associated activities for the Bellrock OfTDA seaward of MHWS.
- 8. The Bellrock Wind Farm Infrastructure (see **Section 3.6.1.1** for details) is defined as infrastructure located within the WFDA including wind turbine generators; floating substructures, station keeping systems and associated scour protection; inter-array cables and associated cable protection; subsea cable hubs; and ancillary infrastructure including buoys including activities associated with the Wind Farm Infrastructure construction, O&M, and decommissioning.
- 9. The Bellrock Onshore Transmission Infrastructure (see **Section 3.6.1.2**) is defined as infrastructure located within the OnTDA including transition joint bay(s); onshore export cables; onshore substation; temporary construction compounds; temporary working areas; environmental mitigation areas; drainage/irrigation infrastructure; access works; and any other associated infrastructure including activities associated with the Onshore Transmission Infrastructure construction, O&M, and decommissioning.

**Plate 1.1: Overview of the Bellrock Project Development Areas**



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10. The Applicant will hold a seabed lease for the Bellrock Wind Farm Infrastructure for up to 60 years, with the Wind Farm Infrastructure having an operational life of up to 35 years. It is anticipated that the operational life of the Offshore Transmission Infrastructure will be up to 40 years to allow for seasonal construction and decommissioning of the Wind Farm Infrastructure.
11. All stages, construction (including site preparation<sup>4</sup>), O&M and decommissioning, of the Bellrock Offshore Transmission Infrastructure have been considered in this **Bellrock OfTDA Scoping Report**. Refer to **Chapter 3: Project Description** for further detail on the Bellrock Offshore Transmission Infrastructure and associated activities. The overall consents strategy for the Bellrock Project is discussed in **Section 1.5**.

## 1.2 The Offshore Transmission Development Area and the Holistic Network Design Process

12. Under the National Grid Electricity System Operator's (now the National Energy System Operator (NESO)) Holistic Network Design (HND) process, the 'Pathway to 2030' workstream (NESO, 2022) set out a road map to enable a coordinated and integrated approach for connecting 23 GW of offshore wind to the National Electricity Transmission System, while ensuring that the most appropriate approach is taken forward with regards to consumers, local communities, and the environment. It provided offshore and onshore connection recommendations that facilitate the United Kingdom (UK) Government's ambition for 50 GW of offshore wind by 2030, through equal consideration across the following four objectives to ensure the most appropriate approach is taken forward: cost to consumer; deliverability and operability; impact on environment; and impact on local communities (NESO, 2022).
13. For the Bellrock Project, the HND (NESO, 2022) recommended a connection to a new Southern Energy Networks Transmission offshore substation. The Applicant's initial consultation with regulators, stakeholders and local community was based on connection to the proposed offshore substation. In April 2025, NESO imposed a change to the Bellrock Project, requiring the Bellrock Project to connect to the Hurlie substation in Aberdeenshire (NESO, 2025). Following this decision, the Applicant has undertaken site selection and stakeholder consultation activities for a connection to the Hurlie substation. See **Section 1.4** for details on the Bellrock OfTDA Scoping Boundary and **Section 4.3 of Chapter 4: Approach to Scoping and Environmental Impact Assessment** for details on consultation.
14. Additional details on the HND are provided in **Table 2.1** in **Chapter 2: Legislative and Policy Context**, and on the site selection process in **Section 3.6** in **Chapter 3: Project Description**.

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<sup>4</sup> For the purposes of EIA, site preparation is assessed as part of the construction works to ensure a robust and thorough assessment is undertaken.

## 1.3 Objectives of the Bellrock Project

15. The key ambition of the Bellrock Project is to successfully build and operate an offshore wind farm to help reach Scotland's and the UK's net zero targets in the face of the climate emergency (see **Chapter 2: Legislative and Policy Context**) and realise the benefits of a sustainable energy source which improves Scotland's energy security and reduces costs to the consumer.
16. The objectives of the Bellrock Project are set out in **Table 1.1**.

**Table 1.1: Objectives of the Bellrock Project**

| Theme                                                  | Objective                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drive offshore wind growth in Scottish waters          | To contribute to the delivery of a significant volume of operational offshore wind in Scottish waters in the 2030s which will generate low carbon electricity in support of the decarbonisation of the Scottish electricity supply as part of Scottish and UK climate change targets and the Scottish Government's ambition of developing up to 40 GW of new offshore wind in Scottish waters by 2040. |
| Improve energy security                                | To improve energy security and stability in Scotland and the UK by providing significant renewable energy generation within Scottish waters.                                                                                                                                                                                                                                                           |
| Optimise renewable energy within infrastructure limits | To optimise renewable energy generation and supply capacity at scale within the constraints of available Scottish seabed and onshore transmission infrastructure.                                                                                                                                                                                                                                      |
| Unlock deep-water offshore wind potential              | To generate renewable power on the Scottish seabed at greater depths by deploying floating wind technology at scale.                                                                                                                                                                                                                                                                                   |
| Maximising socioeconomic benefits for Scotland         | To deliver significant socioeconomic benefits and investment within the Scottish supply chain and realise the associated economic development, skills and employment benefits for Scotland.                                                                                                                                                                                                            |

17. The Applicant is collaborating with local and national agencies to train and upskill the workforce by formulating specific enterprise and skills development programmes. The initiatives that the Applicant is currently engaged in at the time of writing are listed in **Table 1.2**.

**Table 1.2: Ongoing Skills Initiatives Supported by the Applicant**

| Provider                                | Initiative Sponsored                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scottish Association for Marine Science | <ul style="list-style-type: none"><li>▪ Funding a part-time science, technology, engineering and mathematics Officer with a focus on marine technology and engineering to engage young people with physical oceanography, robotics, technology, engineering &amp; blue careers (commitment of two years);</li><li>▪ Sponsorship of five places on a full day robotics training course;</li><li>▪ Paid marine mammal data analysis student internship; and</li><li>▪ Creation of five to seven bursaries/ or a hardship fund to help students facing financial barriers secure funding to ensure they can participate in studies.</li></ul> |

| Provider                    | Initiative Sponsored                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stemovators                 | <ul style="list-style-type: none"> <li>Sponsorship of a Stemovators pilot project “ScotWind for Schools”, providing equipment to 10 schools and shaping lesson planning for a module to educate P6 – S2 pupils about offshore wind.</li> </ul>                                                                                                                         |
| Powering Futures            | <ul style="list-style-type: none"> <li>National Partner of this programme;</li> <li>Students have opportunity to gain the Scottish Credit and Qualifications Framework Level 6 Powering Futures qualification; and</li> <li>Members of the Bellrock project team are engaged in volunteering opportunities at various schools taking part in the programme.</li> </ul> |
| North East Scotland College | <ul style="list-style-type: none"> <li>Sponsorship of 12 places on a school-leaver pre-apprenticeship programme;</li> <li>Provision of personal protective equipment, site visits, participant bursary and access to employability resources; and</li> <li>Delivery of careers talks.</li> </ul>                                                                       |

18. The Bellrock Project will deliver significant supply chain expenditure within Scotland, has the potential to power the equivalent energy needs of over 1.7 million homes<sup>5</sup> with renewable energy and will help achieve Scotland’s net zero targets whilst improving energy security.

## 1.4 Bellrock OfTDA Scoping Boundary

19. The OfTDA Scoping Boundary presented within this **Bellrock OfTDA Scoping Report** is shown within **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))**. The Bellrock WFDA (where the OfSS(s) will be located) and the OfRCS(s) Area of Search are shown in **Figure 1.3 (Appendix A (Volume 1))**. The Bellrock OfTDA Scoping Boundary defines the area within which the Bellrock Offshore Transmission Infrastructure and associated activities (see **Section 1.1**) will be located.
20. The site selection process for the Bellrock OfTDA is ongoing at the time of writing and is taking account of environmental and engineering considerations and constraints (see **Section 3.6 of Chapter 3: Project Description** for details). The Bellrock OfTDA Scoping Boundary has been defined for the purpose of this **Bellrock OfTDA Scoping Report** to include landfall at Cowie (north of Stonehaven) and offshore export cable corridor options that are still under consideration between the Bellrock WFDA and landfall.
21. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA, which will be the subject of the Bellrock OfTDA Environmental Impact Assessment (EIA) and Marine Licence Application. Receptor specific study areas (see **Chapter 5 to Chapter 19 (Volume 1)**) will be updated in the Bellrock OfTDA EIA Report to reflect this refinement.

<sup>5</sup> See [www.bellrockwind.co.uk](http://www.bellrockwind.co.uk) for further details.

## 1.5 Consents Strategy

22. The Applicant will seek consent from the Scottish Ministers for the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure under the following regulations:
- A Marine Licence from MD-LOT for the Bellrock OfTDA under the Marine and Coastal Access Act 2009 (applicable to Scottish offshore waters between 12 nautical miles (nm) and 200 nm); and
  - A Marine Licence from MD-LOT for the Bellrock OfTDA under the Marine (Scotland) Act 2010 (applicable to Scottish inshore waters between 12 nm of the coast and MHWS).
23. The Marine Licence Application will be accompanied by the Bellrock OfTDA EIA Report, which will present an assessment of likely significant effects on the environment for the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure. This **Bellrock OfTDA Scoping Report** has been prepared to agree the scope of the Bellrock OfTDA EIA Report (**Section 1.6**) in support of a single Application under both the Marine and Coastal Access Act (2009) and Marine (Scotland) Act 2010 (Scottish Government, 2023) as confirmed in the Bellrock quarterly meeting with MD-LOT and NatureScot on 18 June 2026. Further details on the Bellrock OfTDA EIA Report structure are outlined in **Section 4.9 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**.
24. A Section 36 Consent (s.36) Application<sup>6</sup> and a Marine Licence Application<sup>7</sup>, accompanied by an EIA Report (Bellrock Offshore Wind Farm Limited, 2026), was submitted in April 2026 to MD-LOT on behalf of the Scottish Ministers, for the construction and O&M of the Bellrock Wind Farm Infrastructure located within the Bellrock WFDA. Additionally, an Application for the Bellrock OnTDA (in consideration of the Onshore Transmission Infrastructure) for Planning Permission in Principle under the Town and Country Planning (Scotland) Act 1997 (the 1997 Act) is anticipated to be submitted by the Applicant to Aberdeenshire Council in 2027.
25. To ensure a robust assessment, a Bellrock OfTDA Whole Project Assessment will be included within the Bellrock OfTDA EIA Report, which will consider potential effects from the Bellrock Offshore Transmission Infrastructure that may occur in-combination with the Bellrock Wind Farm Infrastructure and the Onshore Transmission Infrastructure. A Cumulative Effects Assessment will then be undertaken, considering the Bellrock OfTDA Whole Project Assessment alongside other projects and plans in the wider area.
26. Further details on the methodology for the EIA, including the approach to Whole Project Assessment and Cumulative Effects Assessment are discussed in **Chapter 4: Approach to Scoping and Environmental Impact Assessment (Section 4.7)**.

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<sup>6</sup> Submitted under the Electricity Act 1989.

<sup>7</sup> Submitted under the Marine and Coastal Access Act 2009.

## 1.6 Purpose of this Scoping Report

27. This **Bellrock OfTDA Scoping Report** has been prepared to support a request for a Scoping Opinion in relation to the Bellrock Offshore Transmission Infrastructure from MD-LOT, acting on behalf of the Scottish Ministers. Responses received by MD-LOT from statutory and non-statutory consultees to this **Bellrock OfTDA Scoping Report** are expected to inform the Scoping Opinion, which will in turn inform the Bellrock OfTDA EIA Report.
28. The purpose of this **Bellrock OfTDA Scoping Report** is to provide stakeholders with information on the Bellrock Offshore Transmission Infrastructure and facilitate engagement with stakeholders on the key issues to be addressed in the Bellrock OfTDA EIA Report, as well as the baseline data sources and assessment methodologies to be used to inform the Bellrock OfTDA EIA Report.
29. **Table 1.3** summarises the information requirements set out in the EIA Regulations<sup>8</sup> and where these can be found in this **Bellrock OfTDA Scoping Report**.

**Table 1.3: Scoping Requirements of the EIA Regulations and where the Information is Included in this Bellrock OfTDA Scoping Report**

| EIA Regulation Topic Requirement                                                                                                                                 | Location in this Bellrock OfTDA Scoping Report                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Marine Works (Environmental Impact Assessment) Regulations 2007</b>                                                                                           |                                                                                                                                                                                                                                            |
| A chart, plan or map sufficient to identify the location of the regulated activity and of other activities to be carried out in the course of the project.       | <b>Chapter 3: Project Description</b> provides a description of the Bellrock OfTDA and a plan of the Bellrock OfTDA is provided in <b>Figure 1.1</b> and <b>Figure 1.2 (Appendix A (Volume 1))</b> .                                       |
| A brief description of the specific characteristics of the regulated activity and the project, including their nature, purpose, location and technical capacity. | <b>Chapter 3: Project Description</b> includes a description of the nature, location and technical capacity of the Bellrock OfTDA, and <b>Chapter 2: Legislative and Policy Context</b> provides a description of the purpose.             |
| An explanation of the likely significant effects of the regulatory activity and the project on the environment.                                                  | A description of likely significant effects is provided in <b>Chapter 5</b> to <b>Chapter 19</b> . Reference should also be made to the <b>Bellrock OfTDA HRA Screening Report (Volume 2)</b> and <b>MPA Screening Report (Volume 3)</b> . |
| <b>Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017</b>                                                                                |                                                                                                                                                                                                                                            |
| A description of the location of the proposed works, including a plan sufficient to identify the area in which the works are proposed to be sited.               | <b>Chapter 3: Project Description</b> provides a description of the Bellrock OfTDA and a plan of the Bellrock OfTDA is provided in <b>Figure 1.1</b> and <b>Figure 1.2 (Appendix A (Volume 1))</b> .                                       |

<sup>8</sup> In respect to the Marine Licence Application for the Bellrock OfTDA: The Marine Works (Environmental Impact Assessment) Regulations 2007 implements the EIA Directive into Scottish law and requires an EIA to support the Marine Licence application for certain regulated activities in Scottish Offshore Region between 12 nm – 200 nm. The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 defines those activities that require an EIA for Scottish inshore waters (0 nm - 12 nm).

| EIA Regulation Topic Requirement                                                                                                                                                                                                                                                                                                                                                                | Location in this Bellrock OfTDA Scoping Report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A description of the proposed works, including a list of all of the regulated activities which are proposed; a description of the physical characteristics of the proposed works and, where relevant, works to be decommissioned; and a description of the location of the proposed works, with particular regard to the environmental sensitivity of geographical areas likely to be affected. | <p><b>Chapter 3: Project Description</b> provides a description of the Bellrock OfTDA and its location, as well as details of the proposed activities and decommissioning. A plan of the Bellrock OfTDA is provided in <b>Figure 1.1</b> and <b>Figure 1.2 (Appendix A (Volume 1))</b>.</p> <p>A description of environmental sensitivities of geographical areas likely to be affected is provided in <b>Chapter 5</b> to <b>Chapter 19</b>. Reference should also be made to the <b>Bellrock OfTDA HRA Screening Report (Volume 2)</b> and the <b>Bellrock OfTDA MPA Screening Report (Volume 3)</b>.</p> |
| A description of the aspects of the environment likely to be significantly affected by the proposed works.                                                                                                                                                                                                                                                                                      | A description of likely significant effects is provided in <b>Chapter 5</b> to <b>Chapter 19</b> . Reference should also be made to the <b>Bellrock OfTDA HRA Screening Report (Volume 2)</b> and the <b>Bellrock OfTDA MPA Screening Report (Volume 3)</b> .                                                                                                                                                                                                                                                                                                                                               |
| A description of any likely significant effects, to the extent of the information available on such effects, of the proposed works on the environment resulting from either, or both, of the following: the expected residues and emissions and the production of waste, where relevant; or the use of natural resources, in particular soil, land, water and biodiversity.                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

30. Within this **Bellrock OfTDA Scoping Report**, potential environmental impacts associated with the Bellrock Offshore Transmission Infrastructure are considered. These include impacts which are proposed to be 'scoped out' of the Bellrock OfTDA EIA Report due to no likely significant effect in EIA terms or no impact-receptor pathways identified. Agreement with stakeholders will be sought through this **Bellrock OfTDA Scoping Report** to determine final impacts to be 'scoped in' and 'scoped out' of the Bellrock OfTDA EIA Report and agree methods and approaches to be used when undertaking the assessments (see **Chapter 4: Approach to Scoping and Environmental Impact Assessment**).
31. The potential impacts and mitigation proposed within this **Bellrock OfTDA Scoping Report** are based on the Bellrock OfTDA Scoping Boundary. As noted above, as the site selection process for the Bellrock OfTDA further develops, the boundary of the Bellrock OfTDA will be reduced to reflect the refinement of the Bellrock offshore export cable corridor and location of the OfRCS(s) and this will be reflected in the EIA and will form the Marine Licence Application boundary. Subsequent to receiving the Scoping Opinion any project refinements which are considered to potentially change the context of the Scoping Opinion (i.e. works outside the Bellrock OfTDA Scoping Boundary or un-scoped infrastructure or methodology) will be discussed with MD-LOT and highlighted in the Bellrock OfTDA EIA Report.
32. Scoping occurs before the Bellrock OfTDA is at an advanced or fixed stage of engineering design. This ensures that relevant stakeholder feedback obtained via the Scoping Opinion can be used to inform the ongoing design evolution of the Bellrock Offshore Transmission Infrastructure. The resultant Bellrock OfTDA EIA Report will be based upon the Scoping Opinion received in response to the formal request. Where appropriate, the Bellrock WFDA Scoping Opinion (MD-LOT, 2024)



and ongoing consultation relating to the Bellrock WFDA has been considered by the Applicant in the development of this **Bellrock OfTDA Scoping Report**.

33. Guidance on the approach to EIA has been provided to date through ongoing consultation with MD-LOT and NatureScot. During the preparation of this **Bellrock OfTDA Scoping Report**, a Scoping Information Package for the Bellrock OfTDA was provided to MD-LOT, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the EIA methodology and information sources for key topics for the Bellrock OfTDA infrastructure and the wider Bellrock Project (see **Table 4.1** in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**). Responses to queries raised on the Scoping Information Package are presented within this **Bellrock OfTDA Scoping Report** where applicable.
34. Additional pre-scoping consultation on various aspects of the Bellrock OfTDA is presented in **Section 4.3**. Consultee feedback received to date has been considered in drafting this **Bellrock OfTDA Scoping Report**. The information presented in this **Bellrock OfTDA Scoping Report** aims to inform stakeholders on the Bellrock Offshore Transmission Infrastructure and the approach to assessment to assist in undertaking a robust and proportionate EIA.
35. The Applicant welcomes the opportunity for engagement with stakeholders and feedback on the approach and the scope of the Bellrock OfTDA EIA Report as part of the formal Scoping Opinion and throughout the EIA process.

## 1.7 The Applicant and Environmental Impact Assessment Project Team

### 1.7.1 The Applicant

36. The Bellrock Project is being developed by Bellrock Offshore Wind Farm Limited, a wholly owned subsidiary of Nadara Limited (Nadara), a leading UK-based renewables company and one of the largest non-utility independent power producers in Europe.
37. Nadara aims to contribute to a world leading floating offshore wind industry in the UK, combining innovative technology with a plan to attract and grow a skilled Scottish workforce and stimulate a thriving local supply chain and is well placed to deliver world class floating offshore projects.
38. In support of this aim, Nadara is also developing the 900 megawatt (MW) Broadshore Offshore Wind Farm<sup>9</sup>, the 100 MW Sinclair Offshore Wind Farm<sup>10</sup>, the 100 MW Scaraben Offshore Wind

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<sup>9</sup> Development is being undertaken through Broadshore Offshore Wind Farm Limited, a wholly owned subsidiary of Nadara Limited.

<sup>10</sup> Development is being undertaken through Sinclair Offshore Wind Farm Limited, a wholly owned subsidiary of Nadara Limited.

Farm<sup>11</sup> (collectively referred to as the Broadshore Hub), as well as the 1.5 GW Stromar Offshore Wind Farm<sup>12</sup>, all of which are located in the northern North Sea.

## 1.7.2 Environmental Impact Assessment Project Team

39. Haskoning has been appointed by the Applicant to lead (through their Edinburgh office) the EIA for the Bellrock OfTDA. This includes informing and preparing the initial review of the key environmental issues associated with the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure as part of the scoping process and reports.
40. Pursuant to the EIA Regulations, the Bellrock OfTDA EIA Report will be prepared by competent experts and will outline the relevant expertise or qualifications of the experts.
41. Haskoning is registered with the Institute of Sustainability and Environmental Professionals and its EIA Quality Mark scheme, which independently reviews and recognises organisations committed to excellence in their EIA practice.
42. A number of specialist consultancies have also provided expert input into this **Bellrock OfTDA Scoping Report** and will do so for the Bellrock OfTDA EIA Report, as presented in **Table 1.4** in **Section 1.8** and below:
  - **Chapter 10: Commercial Fisheries** - NiMa Consultants Limited, Scotland based marine environmental consultants specialising in commercial fisheries impact assessment;
  - **Chapter 11: Shipping and Navigation** - Anatec Limited, Scotland based offshore marine consultants with over 25 years of experience in assessing and managing offshore marine risk. This includes undertaking Navigational Risk Assessments and shipping and navigation impact assessments for the majority of previous offshore wind farm projects in the UK and are currently working on multiple ScotWind projects;
  - **Chapter 12: Aviation and Radar** - Cyrrus Limited has provided expert advice to many airports, aviation authorities, and onshore and offshore wind developers since 1999. Working with airports and wind energy developers in the UK and Republic of Ireland, Cyrrus has extensive experience working on EIAs for offshore wind farm developers;
  - **Chapter 15: Seascape, Landscape and Visual Impact** - Land Use Consultants (LUC) Limited, through their Edinburgh office, has extensive experience of EIA for a wide range of development types. LUC is one of the UK's leading consultancies in the field of seascape, landscape and visual impact assessment for onshore and offshore wind development, with experience on projects across the UK over the last 15 years. The LUC team includes Chartered Members of the Landscape Institute; and

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<sup>11</sup> Development is being undertaken through Scaraben Offshore Wind Farm Limited, a wholly owned subsidiary of Nadara Limited.

<sup>12</sup> Development is being undertaken through Stromar Offshore Wind Farm Limited, a wholly owned subsidiary of Nadara Limited.



- **Chapter 16: Socioeconomics and Tourism** - BiGGAR Economics Limited is an economic development consultancy based in Edinburgh, that has assessed the socioeconomic impact of over two hundred renewable energy projects across Scotland, the UK and Ireland.

## 1.8 Structure of this Scoping Report

43. The structure of this **Bellrock OfTDA Scoping Report** is set out in **Table 1.4**.
44. Alongside the submission of this **Bellrock OfTDA Scoping Report**, a **HRA Screening Report (Volume 2)** and **MPA Screening Report (Volume 3)**, both of which have been prepared by Haskoning, are also submitted for the Bellrock Offshore Transmission Infrastructure. Questions to consultees are posed at the end of relevant Chapters, where applicable.

**Table 1.4: Structure of this Bellrock OfTDA Scoping Report**

| Chapter/Document                                                          | Author    | Overview                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Volume 1: Bellrock OfTDA Scoping Report</b>                            |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Chapter 1: Introduction</b>                                            | Haskoning | Introduces the Bellrock OfTDA, the Applicant, and the EIA team, provides an overview of the Bellrock Project along with its objectives, and outlines the purpose of this <b>Bellrock OfTDA Scoping Report</b> .                                                                                                                                                                                                                                                                                                         |
| <b>Chapter 2: Legislative and Policy Context</b>                          | Haskoning | Sets out the need for the Bellrock OfTDA and the legal, policy and strategic framework governing the Bellrock OfTDA and its EIA.                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Chapter 3: Project Description</b>                                     | Haskoning | Provides a description of the key components that comprise the Bellrock Offshore Transmission Infrastructure and associated activities.                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Chapter 4: Approach to Scoping and Environmental Impact Assessment</b> | Haskoning | Describes the proposed EIA methodology and demonstrates the measures taken to progress a proportionate EIA. This Chapter also details the approach to consultation.                                                                                                                                                                                                                                                                                                                                                     |
| <b>Chapter 5: Marine Geology, Oceanography, and Physical Processes</b>    | Haskoning | Each technical chapter covers: <ul style="list-style-type: none"> <li>▪ An outline of the relevant legislation, policy and guidance;</li> <li>▪ Consultation undertaken to date;</li> <li>▪ The proposed assessment methodology;</li> <li>▪ An outline of the baseline characterisation;</li> <li>▪ Scoping in or scoping out of potential impacts and significant effects, including embedded mitigation measures;</li> <li>▪ Consideration of an appropriate Whole Project Assessment, where relevant; and</li> </ul> |
| <b>Chapter 6: Intertidal and Benthic Ecology</b>                          | Haskoning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Chapter 7: Fish and Shellfish Ecology</b>                              | Haskoning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Chapter 8: Marine Mammals</b>                                          | Haskoning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Chapter 9: Intertidal and Offshore Ornithology</b>                     | Haskoning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Chapter/Document                                                               | Author           | Overview                                                                                                                                                 |
|--------------------------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Chapter 10: Commercial Fisheries</b>                                        | NiMa Consultants | <ul style="list-style-type: none"> <li>Identification of potential cumulative and transboundary effects.</li> </ul>                                      |
| <b>Chapter 11: Shipping and Navigation</b>                                     | Anatec           |                                                                                                                                                          |
| <b>Chapter 12: Aviation and Radar</b>                                          | Cyrrus           |                                                                                                                                                          |
| <b>Chapter 13: Marine Infrastructure and Other Users</b>                       | Haskoning        |                                                                                                                                                          |
| <b>Chapter 14: Marine Archaeology and Cultural Heritage</b>                    | Haskoning        |                                                                                                                                                          |
| <b>Chapter 15: Seascape, Landscape and Visual Impact</b>                       | LUC              |                                                                                                                                                          |
| <b>Chapter 16: Socioeconomics and Tourism</b>                                  | BiGGAR Economics |                                                                                                                                                          |
| <b>Chapter 17: Climate Change</b>                                              | Haskoning        |                                                                                                                                                          |
| <b>Chapter 18: Offshore Air Quality</b>                                        | Haskoning        |                                                                                                                                                          |
| <b>Chapter 19: Major Accidents and Disasters</b>                               | Haskoning        |                                                                                                                                                          |
| <b>Chapter 20: Summary and Next Steps</b>                                      | Haskoning        | Provides a summary of the approach taken to scoping and the key findings of the <b>Bellrock OffTDA Scoping Report</b> .                                  |
| <b>Appendix A – Figures (Volume 1)</b>                                         | Haskoning        | Contains supporting figures.                                                                                                                             |
| <b>Appendix B – Mitigation and Monitoring Register (Volume 1)</b>              | Haskoning        | Sets out the mitigation proposed for the Bellrock Offshore Transmission Infrastructure.                                                                  |
| <b>Appendix C – Marine Mammals Existing Environment (Volume 1)</b>             | Haskoning        | Outline of the baseline characterisation for marine mammals.                                                                                             |
| <b>Appendix D – Approach to Marine Mammals and Underwater Noise (Volume 1)</b> | Haskoning        | Proposed approach to assessment of underwater noise impacts on marine mammals.                                                                           |
| <b>Appendix E – Intertidal Bird Survey Report (Volume 1)</b>                   | Atlantic Ecology | Details the results on overwintering intertidal bird surveys (2025-2026) at the proposed landfall for the Bellrock Offshore Transmission Infrastructure. |

| Chapter/Document                                                                | Author    | Overview                                                                                         |
|---------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------|
| <b>Volume 2: Bellrock OfTDA Habitats Regulations Appraisal Screening Report</b> |           |                                                                                                  |
| <b>All chapters</b>                                                             | Haskoning | Provides a screening of Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) |
| <b>Volume 3: Bellrock OfTDA Marine Protected Area Screening Report</b>          |           |                                                                                                  |
| <b>All chapters</b>                                                             | Haskoning | Provides a screening of MPAs.                                                                    |

## 1.9 Scoping Questions to Consultees

45. The following question is posed to consultees to help frame and focus their response to the introduction of the **Bellrock OfTDA Scoping Report**, which will in turn inform the EIA:
- The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the Bellrock OfTDA upon which the Marine Licence Application will be based. The study areas presented in the **Bellrock OfTDA Scoping Report** will be reviewed and updated in the Bellrock OfTDA EIA Report to reflect this refinement. Where this results in a receptor no longer falling within the relevant study area, and no credible impact pathway exists between the Bellrock Offshore Transmission Infrastructure and that receptor, it is proposed that the receptor is scoped out of the EIA. Any such refinements to the study areas and receptors subsequently scoped out of assessment will be documented and justified within the Bellrock OfTDA EIA Report. Do you agree with this approach?

## 1.10 References

Bellrock Offshore Wind Farm Limited (2026). Bellrock WFDA Section 36 Consent and Marine Licence Applications, including the Environmental Impact Assessment Report, Report to Inform Appropriate Assessment, and Supporting Documentation (Volume I to VII). Available at:

<https://marine.gov.scot/?q=node/27552>

MD-LOT (2024). Bellrock WFDA Scoping Opinion. Available at:

<https://marine.gov.scot/?q=node/25450>

NESO (2022). Pathway to 2030: Holistic Network Design. Available at:

<https://www.neso.energy/document/262676/download>

NESO (2025). HND and HNDFUE Impact Assessments Ossian and North Cluster 2 Outcome Summary April 2025. Available at: <https://www.neso.energy/document/358431/download>.

Scottish Government (2023). Marine licensing and consenting - Environmental Impact Assessment: overview. Available at: <https://www.gov.scot/publications/marine-licensing-and-consenting-environmental-impact-assessment-requirements/>

## 2 Legislative and Policy Context

### 2.1 Introduction

46. This Chapter provides an overview of the legislative and policy context for the Bellrock Offshore Transmission Development Area (OfTDA) as it applies to the Environmental Impact Assessment (EIA) and consenting process. The Applicant is adopting a policy-led approach to EIA and consenting by providing an overview of the applicable legislative framework, identifying this within the strategic policy context for the Bellrock OfTDA, and outlining the applicable policy framework to guide proportionate assessment in the Bellrock OfTDA EIA Report.
47. The purpose of this Chapter is to explain the need for the Bellrock OfTDA, to help inform the scope of the Bellrock OfTDA EIA Report and demonstrate compliance with all legislative and policy requirements.
48. This Chapter sets out a summary of the legislative and policy context for the Bellrock OfTDA, in relation to:
- Scottish, United Kingdom (UK) and international obligations and policy relating to climate change and the role of reducing greenhouse gas emissions (**Section 2.2**);
  - Marine planning policy to set the context for marine development (**Section 2.3**);
  - Scottish consenting legislation, including the legal and regulatory framework governing the consent/licence Application required for the construction, operation and maintenance (O&M) and decommissioning of the Bellrock OfTDA, and supporting EIA (**Section 2.4** and **Section 2.5**); and
  - Other nature conservation legislation and consenting requirements relevant to the Bellrock OfTDA (**Section 2.6** and **Section 2.7**).
49. Any Legislation referred to in this **Bellrock OfTDA Scoping Report** is as subsequently amended and as currently in force as at the date of this **Bellrock OfTDA Scoping Report**.
50. In addition to considering relevant legislation and policy, this **Bellrock OfTDA Scoping Report** has been informed by the Marine Directorate - Licensing Operations Team's (MD-LOT) online guidance on marine environment: licensing and consenting requirements (MD-LOT, 2025) and Crown Estate Scotland's (CES) Electricity Transmission for Offshore Wind: Leasing Guide (CES, 2025), which together cover guidance on offshore transmission assets, Offshore Transmission Option Agreements, and seabed leasing. Any updates to this guidance will similarly be used to inform the Bellrock OfTDA EIA Report. Please refer to **Chapter 4: Approach to Scoping and Environmental Impact Assessment** for further details on guidance.
51. Chapter specific legislation and policy is provided in the relevant technical chapters within this **Bellrock OfTDA Scoping Report**. Any updated legislation, policy and guidance will be considered within the Bellrock OfTDA EIA Report as appropriate.

## 2.2 Need for the Project and Overview of Policy Context

52. The UK requires a range of energy generation infrastructure to ensure it has a secure, economical and efficient energy supply and can meet its binding commitments to address climate change and adopt renewable technologies as a significant proportion of its energy generation mix. Offshore wind, as a source of renewable energy, offers Scotland a wide range of benefits including reducing greenhouse gas emissions, supporting economic growth, and improving Scotland's energy security.
53. The emissions of greenhouse gases have been identified as a significant source of anthropogenic climate change (Intergovernmental Panel on Climate Change, 2018). The burning of fossil fuels, such as coal and gas for electricity production has been established as a significant greenhouse gas emission source. Development of renewable energy for electricity production is presented as a solution to reducing carbon dioxide (CO<sub>2</sub>) emissions and the resulting anthropogenic climate change. To enable the development of renewable energy for electricity production, numerous climate change protocols and agreements and renewable energy policies and legislation have been implemented. These are discussed in **Section 2.2.2**, and include:
- The Kyoto Protocol, 1997;
  - The Paris Agreement, 2015;
  - The Climate Change (Scotland) Act 2009, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, and the Climate Change (Emissions Reduction Targets) (Scotland) Act 2024; and
  - The Climate Change Act 2008 and the Climate Change Act 2008 (2050 Target Amendment) Order 2019.
54. The Scottish Government, along with many other governments across the world, declared a climate emergency in 2019, outlining the need for swift and decisive action to limit the warming of our planet by 1.5 degrees Celsius compared to 1990 levels. In Scotland, the Climate Change (Scotland) Act 2009 introduced the target to reduce greenhouse gas emissions by 80% by 2050, with the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 strengthening this to net zero by 2045. This ambitious 2045 target reflects the Scottish Government's acknowledgement of the climate change emergency.
55. Acknowledging the available wind resource and offshore wind development opportunity, the Scottish and UK Governments have committed to ensuring that offshore wind is a leading contributing source of renewable electricity to the National Electricity Transmission System. Under the National Energy System Operator's (NESO's) Clean Power 2030 Plan, "*offshore wind must be the bedrock of that [clean power] system, providing over half of Great Britain's generation*" (NESO, 2024). Significant growth in offshore wind (from 15 gigawatt (GW) in 2023 to 43 – 50 GW in 2030) alongside onshore wind, solar and battery storage is needed to displace gas for electricity production.

56. In October 2021, the UK Government published the Net Zero Strategy: Build Back Greener (Her/His Majesty's (HM) Government, 2021a), which sets out its intended pathway for decarbonisation over the period until 2035, in the later years of the Sixth Carbon Budget period (Climate Change Committee (CCC), 2020) and outlining progress towards achieving the UK Government's overarching target of Net Zero by 2050. The Net Zero Strategy sets a clear and credible range for emissions reduction in each sector of the economy, while prioritising clean growth and energy security. The Seventh Carbon Budget was published on 25 February 2025, outlining the pathway towards decarbonisation between 2038 and 2042 (CCC, 2025).
57. The UK is one of the few countries with emissions targets in line with the long-term temperature goal of the Paris Agreement. The CCC's most recent progress report (CCC, 2024) confirmed that the UK achieved the Third Carbon Budget (2018 – 2022) and recorded an increase in the rate of emissions reductions, with emissions falling 5.4% from 2022 to 2023 (excluding aviation and shipping). The report also tracks progress and highlights risks to the delivery of the UK Net Zero Strategy (Department of Energy Security and Net Zero (DESNZ) and Department for Business, Energy and Industrial Strategy (BEIS), 2021).
58. The Bellrock Project will export up to 1.8 GW of renewable electricity to the National Electricity Transmission System, contributing to Scotland's renewable energy generation and wider decarbonisation objectives, including the Scottish Government's target of achieving net zero emissions by 2045. Increasing renewable energy generation is a key component of addressing the climate emergency, with the Bellrock Project forming part of the solution by contributing to emissions reduction over time.
59. The scale of the climate challenge requires a range of renewable options to be utilised. By using floating wind turbine technology, the Bellrock Project can access deeper, more productive offshore areas, which will drive innovation, support supply chain development, and align with Scotland's ambition to lead in advanced renewable technologies. Further, the Bellrock Project supports a Just Transition away from fossil fuels, particularly benefiting communities in northeast Scotland that have historically relied on the oil and gas sector.
60. The Bellrock Project will contribute to Scotland's and the UK's energy security and a diverse energy mix, helping to reduce dependence on imported fossil fuels. The Bellrock Project will contribute towards Scottish and UK renewable energy demands and targets, with the potential to power the equivalent energy needs of over 1.7 million homes<sup>13</sup> and displace over 2.3 million tonnes<sup>14</sup> of CO<sub>2</sub> per year which could otherwise have been produced from natural gas.
61. The Bellrock Project supports a Just Transition away from fossil fuels, particularly benefiting communities in northeast Scotland that have historically relied on the oil and gas sector. By using floating wind turbine technology, the Bellrock Project can access deeper, more productive offshore areas which will drive innovation, support supply chain development, and align with Scotland's ambition to lead in advanced renewable technologies. The Bellrock OfTDA is an essential component of the overall Bellrock Project and therefore the legislative and policy context of the Bellrock Project applies equally to the Bellrock OfTDA. Background information on the Bellrock

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<sup>13</sup> [www.bellrockwind.co.uk](http://www.bellrockwind.co.uk)

<sup>14</sup> Estimated values, for more details visit [www.bellrockwind.co.uk](http://www.bellrockwind.co.uk)



Project and relevant climate change and renewable energy policy to the Bellrock OfTDA are set in **Section 2.2.1** and **Section 2.2.2**, respectively.

#### 2.2.1 ScotWind Leasing

62. The ScotWind Offshore Wind leasing round (hereafter referred to as ‘ScotWind’) managed by CES is a major milestone in Scotland’s journey towards Net Zero. ScotWind’s objective was to help Scotland achieve its net-zero emissions target by 2045, by granting property rights for the seabed in Scottish waters for new commercial scale offshore wind project development in a way that was fair and transparent. In doing so, ScotWind facilitates and encourages development of the low-carbon energy generation needed to meet the world-leading targets committed to in The Climate Change (Scotland) Act 2009.
63. CES announced 17 ScotWind projects in January 2022 and entered seabed Option to Lease Agreements with these projects (including Bellrock Offshore Wind Farm Limited) in April 2022. Following the ScotWind clearing process in August 2022, a further three projects were offered Option to Lease Agreements. The CampionWind offshore wind farm Option to Lease Agreement was subsequently relinquished in November 2025. At the time of writing, 19 ScotWind projects hold Option to Lease Agreements or Lease Agreements. The latest Supply Chain Development Statement Outlooks published by CES indicate that the 16 projects currently included within the Supply Chain Development Statement update are forecast to generate approximately £25.5 billion of expenditure within Scotland across all phases of development up to and including O&M (CES, 2026).
64. CES will offer a full seabed lease to each ScotWind project once developers have secured the necessary consents, grid connection and finance. The ScotWind process is ‘plan-led’, therefore all projects were located in areas defined within the Sectoral Marine Plan (SMP) for Offshore Wind Energy (Scottish Government, 2020), which was subject to plan-level Strategic Environmental Assessment (Scottish Government, 2019a), Habitats Regulations Appraisal (HRA) (Scottish Government, 2019b) and socioeconomic assessment (Scottish Government, 2019c) throughout its preparation.
65. The Bellrock Wind Farm Development Area (WFDA) seabed lease is up to 60 years, while the operational life is up to 35 years. At the end of operational life, any repowering will be subject to a further consenting process. It is anticipated the operational life of the Bellrock OfTDA will be up to 40 years to allow for seasonal construction and decommissioning of the Bellrock Wind Farm Infrastructure.
66. Whilst the ScotWind leasing round provides for a full seabed lease for the Bellrock WFDA, a separate lease will be obtained from CES for the Bellrock OfTDA in due course. As discussed in **Section 1.2** in **Chapter 1: Introduction**, in April 2025 NESO confirmed that the Hurlie substation in Aberdeenshire will be the grid connection location for the Bellrock Project.

#### 2.2.2 Climate Change and Renewable Energy Policy

67. **Table 2.1** sets out the relevant legislation, policy, guidance and directives at Scottish, UK, European and international level relevant to the Bellrock OfTDA with respect to climate change and energy needs.



68. An assessment of climate change risk will be provided as part of the Bellrock OfTDA EIA Report, setting out the contribution the Bellrock OfTDA will make to the aims and targets set out in the policy documents below. See **Chapter 17: Climate Change** for more details on the approach to the climate change assessment.

**Table 2.1: Summary of Relevant Legislation, Policy and Guidance for the Bellrock OfTDA**

| Legislation, Policy and Guidance                                            | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scotland</b>                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020)   | <p>The SMP for Offshore Wind Energy identified sustainable areas for the future development of commercial-scale offshore wind energy in Scotland, including a spatial strategy to inform the ScotWind seabed leasing process for the purposes of offshore wind energy. This built on the first SMP which was adopted in 2011, and the draft wind, wave, and tidal plan published in 2013, and was developed in accordance with the Scottish National Marine Plan (SNMP).</p> <p>The 2020 SMP is undergoing review to reflect the ScotWind and Innovation and Targeted Oil and Gas leasing rounds and is anticipated to be published in Autumn 2026.</p> <p>An updated draft SMP, consistent with the approach taken for the Draft Energy Strategy and Just Transition Plan, has undergone consultation (May to August 2025).</p>                                                                                                                                                                                                                                                                                                                                                                    |
| National Planning Framework 4 (NPF4) (Scottish Government, 2023a)           | <p>NPF4 sets out Scotland's spatial principles, regional priorities, national developments and national planning policy. NPF4 presents Sustainable Places, Liveable Places and Productive Places to achieve national outcomes including benefits to the environment, communities, and health. The NPF4 contains a notable focus on tackling both the climate and nature crises.</p> <p>There is a strong preference for developments which meet the Scottish Government's aims for net zero emissions by 2045, and halting biodiversity loss by 2030/restoring and regenerating biodiversity by 2045.</p> <p>Projects which evidence low and zero-carbon design and expansion of renewable energy generation will therefore be encouraged, such as the Bellrock Project. Strategic renewable electricity generation and transmission infrastructure is highlighted as a key national strategic development, required to support the delivery of 'sustainable places'.</p> <p>Renewable energy and transmission infrastructure (such as the Bellrock OfTDA) is highlighted to improve energy security and reduce emissions, whilst providing employment and opportunities for local communities.</p> |
| Draft Energy Strategy and Just Transition Plan (Scottish Government, 2023b) | <p>The Draft Energy Strategy and Just Transition Plan sets out policy positions and key ambitions for Scotland's energy security, by developing more than 20 GW additional renewable electricity onshore and offshore by 2030. The Plan aims to build in flexibility to the system with the use of tools such as energy storage to adjust fluctuations associated to variations in levels of supply and demand.</p> <p>The Plan contains a route map of actions to deliver a net zero energy system to supply affordable, resilient, and clean energy to Scotland by 2045 and benefit employment. The Plan aims to transform and expand the energy generation sector in Scotland by working with the UK Government.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Legislation, Policy and Guidance                                                                                                                                                          | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scotland's Climate Change Plan 2026-2040 (Scottish Government, 2026a)                                                                                                                     | <p>The Climate Change Plan sets out the path to a low carbon economy while helping to deliver sustainable economic growth. It sets out how Scotland can achieve and net-zero by 2045.</p> <p>The Climate Change Plan presents proposals and policies to meet Scotland's annual emissions targets to 2040, with decarbonisation related to pathways including the electricity system.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Update to the 2020 Offshore Wind Policy Statement: Scotland's Offshore Wind Ambition (Scottish Government, 2026b)                                                                         | <p>Published 28/01/2026 The update to the 2020 Offshore Wind Policy Statement presents how Scottish Government is now resetting its offshore wind policy ambition to up to 40 GW of new offshore wind capacity by 2040, in addition to the already operational or consented capacity (as of August 2025 when the consultation ended).</p> <p>This updated ambition:</p> <ul style="list-style-type: none"> <li>▪ Reaffirms commitment to supporting the delivery of the existing project pipeline, including ScotWind and Innovation and Targeted Oil and Gas projects;</li> <li>▪ Clarifies that no further offshore wind leasing rounds are planned in the near term; and</li> <li>▪ Establishes a clear and realistic timescale – 2040 – rather than 2035-2040.</li> </ul>                                                                 |
| Energy Strategy: Position Statement (Scottish Government, 2021)                                                                                                                           | <p>Scotland's Energy Strategy Position Statement provides an overview of the Scottish Government's key priorities for the short to medium-term that support a green economic recovery from COVID-19 that aligns with net zero ambitions.</p> <p>The Position Statement further examines how the Scottish Government has continued to abide by the principles set out in Scotland's Energy Strategy published in 2017, which were: a whole system view; an inclusive energy transition; and a smarter local energy model.</p> <p>The Position Statement sets out a programme of work required to support energy targets and outlines key energy priorities, which include priorities for offshore wind.</p>                                                                                                                                    |
| <p>Climate Change (Scotland) Act 2009</p> <p>Climate Change (Emissions Reduction Targets) (Scotland) Act 2019</p> <p>Climate Change (Emissions Reduction Targets) (Scotland) Act 2024</p> | <p>The Climate Change (Scotland) Act 2009 was implemented to reduce the greenhouse gas emissions in Scotland by at least 80% by 2050.</p> <p>The Climate Change (Scotland) Act 2009 and The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 accelerate Scotland's overall target in the 2009 Act to net zero by 2045.</p> <p>In November 2024, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2024 modifies the Climate Change (Scotland) Act 2009 to introduce limits on the amount of GHGs emitted in Scotland over a five-year period. This replaces the requirements for annual targets as outlined in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 with a system of targets based on carbon budgets. However, the overall target of net zero by 2045 will remain in place.</p> |
| Scottish Energy Strategy (Scottish Government, 2017)                                                                                                                                      | <p>In 2017, the Scottish Government published Scotland's Energy Strategy: The Future of Energy in Scotland which set a vision for how the energy system in Scotland would look in 2050.</p> <p>Since the publication, the Scottish Government has committed to achieving targets of net zero greenhouse gas emissions by 2045 and a 75% reduction by 2030.</p> <p>This involves supplying 50% of Scotland's energy requirements from renewable sources and increasing energy productivity by 30% across the Scottish economy by 2030.</p>                                                                                                                                                                                                                                                                                                     |

| Legislation, Policy and Guidance                                                                                                                                                                                                    | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Electricity Generation Policy Statement (Scottish Government, 2013)                                                                                                                                                                 | The Electricity Generation Policy Statement 2013 examines the way in which Scotland generates electricity. The Scottish Government's policy states that Scotland's generation mix should deliver a secure source of electricity supply at an affordable cost which can be largely decarbonised by 2030 and achieves the greatest possible economic benefit and competitive advantage for Scotland.                                                                                                                                                                                                                                              |
| Offshore Wind Focus (Scottish Government, 2024a)                                                                                                                                                                                    | Strategic assessment of the market opportunities and next steps that will underpin the public sector's collective investment decisions in offshore wind, supporting delivery of Scotland's green industrial strategy.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>United Kingdom</b>                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Planning and Infrastructure Act 2025                                                                                                                                                                                                | <p>The Planning and Infrastructure Act 2025 streamlines pre-application statutory consultation requirements alongside other reforms designed to accelerate project delivery by removing barriers in the planning process.</p> <p>Additionally, the Act has extended the Generator Commissioning Clause, which allows offshore generators to transmit electricity without an offshore transmission licence during the commissioning period, from 18 to 27 months. This intends to reduce the number of offshore wind farm projects requiring Government interventions to prevent them from shutting down due to non-compliance with the Act.</p> |
| <p>Holistic Network Design (HND) Pathway to 2030 (Electricity System Operator (ESO), 2022)</p> <p>HND and Holistic Network Design Follow up Exercise Impact Assessments Ossian and North Cluster 2 Outcome Summary (NESO, 2025)</p> | <p>In 2022, the ESO (now NESO) recommended a new electricity network design - Pathway to 2030 HND. The HND connects 23 GW of offshore wind power and helps deliver the UK Government's target of 50 GW of offshore wind by 2030 by planning infrastructure to bring power to the grid cohesively, ensuring maximum benefit for consumers, local communities, and the environment.</p> <p>In April 2025, NESO confirmed in the HND and Holistic Network Design Follow up Exercise Impact Assessments Ossian and North Cluster 2 Outcome Summary that the Bellrock Project would connect into the Hurlie substation in Aberdeenshire.</p>         |
| Strategic Spatial Energy Plan (SSEP) (DESNZ, 2024a)                                                                                                                                                                                 | <p>The UK, Scottish and Welsh Governments jointly commissioned NESO to create a SSEP for the energy system, land and sea, across Great Britain.</p> <p>This first iteration of the SSEP focus on electricity generation and storage, including hydrogen assets.</p> <p>NESO will establish a governance structure, consult on a methodology for the SSEP, and develop several "pathway options" for the energy system. The SSEP outputs are expected to feed into the Centralised Strategic Network Plan.</p>                                                                                                                                   |

| Legislation, Policy and Guidance                                                                                                         | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| Clean Power 2030: Advice on achieving clean power for Great Britain by 2030 (NESO, 2024) and Clean Power 2030 Action Plan (DESNZ, 2024b) | <p>The Clean Power 2030 Plan presents the NESO's advice to the Government on how to achieve clean power by 2030 and accelerate a coordinated grid rollout to meet the country's electrification goals.</p> <p>In December 2024, DESNZ released the Clean Power 2030 Action Plan which accepted the advice from NESO on the energy infrastructure required to deliver Clean Power 2030 and sets out a list of actions to accelerate the path to 2030.</p> <p>The plan places offshore wind as the backbone of the clean power system, with central role in delivering 95% low carbon electricity by 2030. The plan's measures collectively boost offshore wind by securing capacity targets, streamlining procurement, accelerating planning and grid access, and unlocking public-private funding, ensuring it serves as the cornerstone of the UK's clean energy future.</p> |
| Strategy and Policy Statement for Energy Policy in Great Britain (DESNZ, 2024c)                                                          | <p>This statement provides guidance to the energy sector on the actions and decisions that are needed to deliver government's policy goals, and places emphasis on where government expects a shift in the energy industry's strategic direction.</p> <p>Through powers from the Energy Act 2023, the Government established a new, publicly owned NESO (referred to as the Independent System Operator and Planner in legislation).</p> <p>NESO's roles, responsibilities and statutory duties that will enable it to meet its statutory objectives which include:</p> <ul style="list-style-type: none"> <li>▪ Enabling Clean Energy and Net Zero Infrastructure;</li> <li>▪ Ensuring Energy Security and Protecting Consumers; and</li> <li>▪ Ensuring the Energy System is Fit for the Future.</li> </ul>                                                                 |
| UK Climate Change Strategy 2021 - 2024 (HM Government, 2021b)                                                                            | <p>The UK Climate Change Strategy will support UK exporters and suppliers through the transition to net zero by increasing support to clean growth and climate adaptation, reducing greenhouse gas emissions and understanding and mitigating climate-related financial risks. The Strategy highlights the importance of transforming the financial system to boost innovation and transition away from high carbon sectors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| UK's Modern Industry Strategy (HM Government, 2025)                                                                                      | <p>In June 2025 the UK Government published its updated Industry Strategy which sets out a 10-year plan to 'increase business investment and grow the industries of the future in the UK', including renewables, and provide stability and certainty for long-term economic development.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Energy White Paper: Powering our Net Zero Future (BEIS, 2020)                                                                            | <p>The Energy White Paper addresses the transformation of the energy system to promote clean, resilient economic growth and deliver net-zero emissions by 2050. The Energy White Paper puts in place a strategy for the wider energy system that transforms energy for a cleaner greener future, supports a green recovery and grows the economy, and creates a fair deal for consumers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Climate Change Act 2008 and Climate Change Act 2008 (2050 Target Amendment) Order 2019                                                   | <p>The Climate Change Act 2008 sets legally binding targets for the UK to reduce CO<sub>2</sub> emissions by at least 80% by 2050, from 1990 levels. This was amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019 which introduced a target for at least 100% reduction in greenhouse gas emissions (compared to 1990 levels) in the UK by 2050.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Great British Energy Act 2025                                                                                                            | <p>Establishes the Great British Energy, a publicly owned energy company overseen by the Secretary of State for Energy Security and Net Zero aiming at accelerating the development of clean, domestically produced energy in the United Kingdom and supporting the nation's net-zero commitments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Legislation, Policy and Guidance                                                        | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| Energy Act 2023                                                                         | <p>The Energy Act 2023 aims to transform the UK's energy system by strengthening energy security, supporting the delivery of net zero and ensuring household bills are affordable in the long-term. The Act will help the government deliver net zero by 2050 in a pragmatic, proportionate and realistic way.</p> <p>The Energy Act 2023 also established the legislative framework for creating and regulating the NESO through transferring ownership of the ESO to HM Government.</p> <p>In addition, the Energy Act 2023, through its Part 13 provisions, which are designed to empower the UK Government to customise habitats regulations assessments and deliver compensatory measures at a strategic level when offshore wind activities have an adverse effect on marine protected areas.</p> |
| Energy Act 2013                                                                         | <p>The Energy Act 2013 aims to facilitate investment in electricity generation contributing towards the legally binding emissions reduction targets, to meet statutory 2030 decarbonisation targets.</p> <p>The Act also aimed to reform the electricity market. The reformed electricity market aims to deliver the low carbon energy and reliable supplies that the UK needs, while minimising costs to consumers.</p> <p>This Act introduced the Contracts for Difference funding mechanism and transition arrangement for investments under the Renewables Obligation scheme.</p>                                                                                                                                                                                                                   |
| Energy Act 2004                                                                         | <p>The Energy Act 2004 (as amended by the Energy Act 2008 and the Scotland Act 2016) established a Renewable Energy Zone adjacent to the UK's territorial waters to enable The Crown Estate to create designated leasing areas for developers to bid for the development of renewable energy. The Act additionally implemented statutory decommissioning requirements for offshore renewable energy installations and associated transmission infrastructure (described further in <b>Section 2.7.1</b>) and a Safety Zone scheme (described further in <b>Section 2.7.2</b>).</p>                                                                                                                                                                                                                      |
| British Energy Security Strategy (BEIS, 2022)                                           | <p>The British Energy Security Statement (published April 2022) outlines a plan for creating a resilient energy system in response to rising global energy prices partly attributed to geopolitical events such as the war in Ukraine. The statement outlined the UK Government's ambition to deliver up to 50 GW of offshore wind by 2030, including 5 GW of floating wind technology. The UK Government also presented amendments to the planning process for offshore wind projects to reduce the consenting process.</p>                                                                                                                                                                                                                                                                            |
| Clean Energy Industries Sector Plan (Department for Business and Trade and DESNZ, 2025) | <p>The Clean Energy Industries Sector Plan (published June 2025) sets out the UK Government's strategic approach to supporting investment, growth and job creation across the clean energy sector as part of the UK's Modern Industrial Strategy. The Plan identifies offshore wind as a priority "frontier" industry and outlines the Government's intention to increase investment in clean energy industries to over £30 billion per year by 2035. It also highlights measures to reduce barriers to deployment, strengthen domestic supply chains and support infrastructure required to accelerate delivery of low carbon energy.</p>                                                                                                                                                              |
| Net Zero Strategy (BEIS, 2021)                                                          | <p>Sets out the UK's intended pathway for decarbonisation over the period until 2037 (the end of the UK Government's Sixth Carbon Budget), on the way to Net Zero by 2050. The Net Zero Strategy sets a clear and credible range for emissions reduction in each sector of the economy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Legislation, Policy and Guidance                            | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>European Union</b>                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| European Union (EU) (Withdrawal) Act 2018                   | Following the UK's exit from the EU, the UK Government committed to implement international environmental obligations in accordance with the EU (Withdrawal) Act 2018 and to maintain environmental commitments and legislation already made. On this basis, the existing EU renewable energy targets for the UK, including the EU Renewable Energy Directive 2009/28/EC, will remain applicable.                                                                                             |
| EU Renewable Energy Directive (Revised), 2018               | The Revised Renewable Energy Directive (2018/2001/EU) entered into force in 2018 set the target to achieve a minimum of 32% share of renewable energy consumption within the EU. Member States commit to the renewable energy consumption target as part of integrated national energy and climate plans, pursuant to Regulation (EU) 2018/1999 of the European Parliament and of the Council.                                                                                                |
| <b>International</b>                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Paris Agreement (Conference of Parties 2021), 2015          | <p>The Paris Agreement had an overarching goal to hold the increase in the global average temperature to below 2°C above pre-industrial levels, and binds all parties to prepare, communicate and maintain a Nationally Determined Contribution to this effect. From 2023 and every five years thereafter, a global stock-take will assess collective progress.</p> <p>The commitment to the Paris Agreement was reaffirmed at most recent Conference of Parties 29 in Baku, Azerbaijan.</p>  |
| Kyoto Protocol, 1997                                        | <p>The Kyoto Protocol requires signatory countries to limit and reduce greenhouse gases in accordance with agreed individual targets. The Kyoto Protocol was formally adopted on 11 December 1997, first entering into force on 16 February 2005 (United Nations Framework Convention on Climate Change, 2024).</p> <p>The UK and Scottish Parliaments adopted the commitments outlined in the Kyoto Protocol through the Climate Change Act 2008 and Climate Change (Scotland) Act 2009.</p> |
| United Nations Framework Convention on Climate Change, 1992 | The United Nations Framework Convention on Climate Change aims to stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system, and is the foundation for later landmark agreements, including the Kyoto Protocol and Paris Agreement.                                                                                                                                                                |

## 2.3 Marine Planning Policy

69. In Scotland, marine planning policy is used to inform decisions made under the relevant consenting legislation, e.g. for the purposes of obtaining a Marine Licence. A summary of planning policy relevant to the activities and infrastructure associated with the Bellrock OFTDA is given in **Table 2.2**.

**Table 2.2: Summary of Planning Policy**

| Policy                                                          | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| Scotland's National Marine Plan (Scottish Government, 2015)     | <p>SNMP was published in March 2015. The purpose of the SNMP is to set out strategic policies for the sustainable development of Scotland's marine resources out to 200 nautical miles (nm). It also provides a strategic framework for marine licensing decisions. The SNMP outlines objectives relating to offshore wind and marine renewable energy which intend to maximise the sustainable development of offshore wind by creating economic benefits through increasing a domestically competitive supply chain whilst contributing to decarbonisation targets. The SNMP was reviewed in 2021 (Marine Scotland, 2021), covering the following:</p> <ul style="list-style-type: none"> <li>Findings set out in the Scottish Marine Assessment (2020);</li> <li>Existing data monitoring programmes;</li> <li>The global climate emergency;</li> <li>The COVID-19 pandemic;</li> <li>UK Exit from the EU; and</li> <li>Implications of wider Marine Scotland strategies including the Blue Economy Action Plan and the Future Fisheries Management Strategy.</li> </ul> <p>The SNMP is currently being updated, transitioning to the Scottish National Marine Plan 2, with the aim of delivering a plan that considers the changes to the legislative and policy landscape, rapid developments in technology and the need to achieve a green recovery from the COVID19 pandemic, as well as reflecting the improved understanding of the marine environment and the successful delivery of the Blue Economy Approach (Scottish Government, 2022b).</p> <p>Consultation on the Planning Position Statement for Scotland's National Marine Plan 2 ran from 5 November 2024 to 7 February 2025 and a consultation analysis report has been produced by the Scottish Government (2025).</p> |
| Regional Marine Plans                                           | <p>A total of 11 Scottish Marine Regions have been created under the Scottish Marine Regions Order 2015 which cover sea areas extending out to 12 nautical miles.</p> <p>Regional Marine Plans for each Marine Region will be developed by Marine Planning Partnerships to allow more local ownership and decision making. The nearest Scottish Marine Region to the Bellrock OfTDA is the North East Marine Region. No Regional Marine Plan is developed for the North East Marine Region at the time of writing.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| A Blue Economy Vision for Scotland (Scottish Government, 2022b) | <p>Sets out the long-term ambition for Scotland's blue economy to 2045, to foster shared stewardship of the marine environment to support ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing. Key actions focus on:</p> <ul style="list-style-type: none"> <li>Restoring Scotland's marine and coastal environments, and ensuring these are resilient to climate change and sustainably managed;</li> <li>The blue economy is managed to ensure fairer, healthier and happier communities with equal access to benefits from marine resources; and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Policy                                                                   | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                          | <ul style="list-style-type: none"> <li>Innovative blue sectors are enabled are resource efficient, competitive and meeting net-zero and nature positive commitments.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| UK Marine Policy Statement (HM Government, 2011)                         | <p>In March 2011, the UK Marine Policy Statement was published for the purposes of section 44 of the Marine and Coastal Access Act (MCAA) 2009.</p> <p>The Marine Policy Statement was established to partially facilitate and support the formulation of Marine Plans in accordance with the marine objectives (HM Government, 2011), including to promote sustainable economic development; enable the UK's move towards a low-carbon economy, to mitigate the causes of climate change and ocean acidification and adapt to their effects; ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and heritage assets; and contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Marine Strategy Framework Directive                                      | <p>The EU Marine Strategy Framework Directive (Directive 2008/56/EC) was established to protect the marine environment by seeking to achieve Good Environmental Status in Europe's seas by 2020. This Directive was transposed into UK law by the Marine Strategy Regulations 2010 and remains applicable after EU Exit, under the Marine Environment (Amendment) (EU Exit) Regulations 2018. Every six years, Member States must review and update their marine strategy. The third cycle began in 2024, running until 2030.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| National Planning Framework 4 (NPF4) (Scottish Government, 2023a)        | <p>NPF4 sets out six overarching spatial principles to inform future planning in Scotland: Just transition; Conserving and recycling assets; Local living; Compact urban growth; Rebalanced development; and Rural revitalisation. These principles will support planning and the delivery of Sustainable Places, Liveable Places, and Productive Places.</p> <p>To support the delivery of Sustainable Places, the NPF4 presents six national developments, which includes Strategic Renewable Electricity Generation and Transmission Infrastructure that supports electricity generation and associated grid infrastructure throughout Scotland. Under this definition, the Bellrock Onshore Transmission Development Area is considered to be a 'national' project under NPF4.</p> <p>The NPF4 Natural Places Policy (Policy 4) aims to 'protect, restore, and enhance natural assets making best use of nature-based solutions' and further states that 'development proposals which by virtue of type, location or scale will have an unacceptable impact on the natural environment, will not be supported'.</p> <p>The NPF4 Energy Policy (Policy 11) intends to 'encourage, promote, and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies'.</p> |
| Aberdeenshire Local Development Plan (LDP) (Aberdeenshire Council, 2023) | <p>The Aberdeenshire LDP sets out the long-term vision for change to the local authority area, which covers the whole of Aberdeenshire except for areas that lie within the Cairngorms National Park and excluding Aberdeen City Council. The LDP provides the framework for development management decisions on planning applications.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



| Policy | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>The current Aberdeenshire LDP was formally adopted in 2023 and was written to accord with the National Planning Framework 3. However, since its publication in 2023, the NPF4 now forms part of the development plan for Aberdeenshire. Where there is any disagreement between the Aberdeenshire LDP and the NPF4, the NPF4 will take priority.</p> <p>Policy C2 Renewable Energy in the Aberdeenshire LDP highlights support for renewable energy developments, specifically the approval of wind energy developments in appropriate locations (Paragraph C2.2).</p> <p>Other relevant policies within the Aberdeenshire LDP include:</p> <ul style="list-style-type: none"> <li>▪ Policy R1 Special Rural Areas; and</li> <li>▪ Coastal Zone Policy (Appendix 5: Coastal Zone).</li> </ul> <p>At the time of writing, Aberdeenshire Council had started work on the next Aberdeenshire LDP, which is expected to be published in early 2029 and cover the period between 2029 and 2039.</p> |

## 2.4 Consenting Legislation

70. The Bellrock OfTDA lies within and beyond the 12 nm limit and, therefore, a Marine Licence is required under the Marine (Scotland) Act 2010 and the MCAA 2009. The Marine (Scotland) Act 2010 applies to Scottish inshore waters (between 0 nm and 12 nm from Mean High Water Springs and the MCAA applies to the Scottish Offshore Region between 12 nm and 200 nm). Both acts set out the requirements for a Marine Licence to be obtained prior to construction, alteration or improvement of any works, deposit of any substance or objects in or over the sea, or on or under the seabed, or to carry out activities such as dredging. As such, a single Marine Licence will be sought for activities listed under Part 4 (Marine Licencing) of the Marine (Scotland) Act 2010 and Part 4 (Marine Licencing) of the MCAA 2009, where required to construct the Bellrock OfTDA (Scottish Government, 2023c).
71. In Scottish waters, Marine Licences are administered by MD-LOT<sup>15</sup> on behalf of Scottish Ministers.
72. A s.36 Consent under the Electricity Act 1989 and Marine Licence under the MCAA 2009 will be required for the Bellrock WFDA and has been applied for in the **Bellrock WFDA EIA Report** and associated documents (submitted April 2026). As the infrastructure within the Bellrock OfTDA is not classed as a generating station, the Electricity Act 1989 is not considered further in this **Bellrock OfTDA Scoping Report**. Where additional licences are required for site preparation works or operational works, these will be sought from the relevant consenting authority at the appropriate time.

<sup>15</sup> Decisions on Marine Licences, under section 58 of the MCAA 2009, are taken in accordance with any relevant marine policy documents. Under section 69 of the MCAA 2009, MD-LOT are also required to have regard to the need to protect the environment, to protect human health, and to prevent interference with legitimate uses of the sea, as well as such other matters as MD-LOT think relevant.

73. The Applicant will also be submitting an Application for Planning Permission in Principle to Aberdeenshire Council under The Town and Country Planning (Scotland) Act 1997 for the Bellrock Onshore Transmission Infrastructure.

## **2.5 Environmental Impact Assessment Regulations**

74. The requirement to undertake EIA was originally established under the EIA Directive (2011/92/EU, as amended by Directive 2014/52/EU) (as transposed into domestic law) and earlier Directives (85/337/EEC as amended by 97/11/EC, 2003/35/EC and 2009/31/EC) continues to be applicable. As such, the EIA Directive remains relevant to the EIA process in Scotland and is relevant to any Marine Licence Applications in Scottish waters if a project is likely to have a significant effect on the environment due to its size, nature or location.
75. The following legislation implementing the EIA Directive into Scots law relevant for the purposes of the Bellrock OFTDA:
- The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 which applies in relation to Marine Licence Applications in the Scottish inshore waters (0 nm to 12 nm) (**Section 2.5.1**); and
  - The Marine Works (Environmental Impact Assessment) Regulations 2007, which applies in relation to Marine Licence Applications in the Scottish Offshore Region (12 nm to 200 nm) (**Section 2.5.2**).
76. The approach to Scoping and EIA for the Bellrock OFTDA is set out in detail in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

### **2.5.1 The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017**

77. Under Schedule 3 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (which applies in Scottish inshore waters between 0 nm and 12 nm), an EIA is required for any project where the project in question is likely, because of the characteristics of the works, location of the works, and characteristics of the potential impacts, to have significant effects on the environment. The Applicant acknowledges the potential for significant environmental effects from infrastructure and activities associated with the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure and will therefore prepare an EIA Report in accordance with these regulations.
78. The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 make provision for the Scottish Ministers (facilitated by MD-LOT) to provide a Scoping Opinion (an opinion on the scope of information proposed to be provided within the Bellrock OFTDA EIA Report) if a written request for this is submitted by the Applicant. This document forms the **Bellrock OFTDA**

**Scoping Report**, which will set out the proposed scope of information to be provided within the Bellrock OfTDA EIA Report and will form the basis of a request to MD-LOT for a Scoping Opinion.

## **2.5.2 The Marine Works (Environmental Impact Assessment) Regulations 2007**

79. Under Schedule A2 of the Marine Works (Environmental Impact Assessment) Regulations 2007 (which applies in Scottish offshore waters beyond 12 nm), an EIA is required for any project where the project in question is likely, because of its size, nature or location to have significant effects on the environment. The Applicant acknowledges the potential for significant environmental effects from infrastructure and activities associated with the construction and operation of the Bellrock OfTDA and will therefore prepare an EIA Report in accordance with these regulations.
80. The Marine Works (Environmental Impact Assessment) Regulations 2007 make provision for the Scottish Ministers (facilitated by MD-LOT) to provide a Scoping Opinion (an opinion on the scope of information proposed to be provided within the Bellrock OfTDA EIA Report) if a written request for this is submitted by the Applicant. This document forms the **Bellrock OfTDA Scoping Report**, which will set out the proposed scope of information to be provided within the Bellrock OfTDA EIA Report and will form the basis of a request to MD-LOT on behalf of the Scottish Ministers, for a Scoping Opinion.

## **2.6 Nature Conservation Legislation and Policy**

### **2.6.1 Habitat Regulations Appraisal**

81. In 1992, the EU Directive 92/43/EEC, known as the 'Habitats Directive', was adopted to enable EU member states to meet obligations set out under the Bern Convention. The purpose of the Habitats Directive is to maintain or restore natural habitats and wild species listed in the Annexes (Annex I, II) at Favourable Conservation Status. Protection to meet Favourable Conservation Status is given through designation of European sites (Special Areas of Conservation).
82. In addition, the EU Directive 2009/147/EC, known as the 'Birds Directive', was implemented to provide a framework for conservation and management of wild birds in the EU. Annex I of the Birds Directive provides a list of rare, vulnerable and migratory species, which are protected through the designation of Special Protection Areas (SPAs).
83. These directives are transposed into Scottish law by the Conservation (Natural Habitats, &c.) Regulations 1994, which apply in respect of marine licences within 12nm, and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (which apply to Marine Licences within the Scottish Offshore Region (12 nm to 200 nm)). Both these regulations constitute the Habitats Regulations for the purposes of the Bellrock OfTDA Application.
84. Under the Habitats Regulations, the Scottish Ministers, as competent authority, must inform an Appropriate Assessment before granting consent for any plan or project that is likely to have a significant effect on a European site, either alone or in-combination with other plans or projects. The purpose of the Appropriate Assessment is to determine whether the proposal would adversely affect the integrity of a European site, in view of that site's conservation objectives. See

**Chapter 4: Approach to Scoping and Environmental Impact Assessment** for further details on the HRA approach and process.

85. In accordance with the above-mentioned Habitats Regulations, the Applicant is undertaking the relevant assessments to inform an appropriate assessment to be undertaken by MD-LOT on behalf of the Scottish Ministers. A standalone **Bellrock OfTDA HRA Screening Report (Volume 2)** for the Bellrock OfTDA has been prepared and submitted for consideration alongside this **Bellrock OfTDA Scoping Report**. A Report to Inform Appropriate Assessment will be submitted alongside the Bellrock OfTDA EIA Report and Application documentation for the Bellrock OfTDA. A separate HRA Screening Report was submitted for the Bellrock WFDA on 22 March 2024 and subsequently a Report to Inform Appropriate Assessment on 2 April 2026 (Bellrock Offshore Wind Farm Limited, 2024; Bellrock Offshore Wind Farm Limited, 2026).

### 2.6.2 Marine Protected Area Assessment

86. In Scotland, Marine Protected Areas (MPAs) are designated under the Marine (Scotland) Act 2010 within 12 nautical miles (nm), and under the Marine and Coastal Access Act 2009 in offshore waters between 12 nm and 200 nm. MPAs can be designated for nature conservation, for research and demonstration, or to protect heritage areas and historic sites like shipwrecks.
87. Under the Marine (Scotland) Act 2010 and the MCAA 2009, provisions are made for the relevant public authority (in this instance, MD-LOT on behalf of the Scottish Ministers) to consider whether a licensable activity is capable of affecting (other than insignificantly) an MPA.
88. An MPA screening assessment has been prepared and submitted for consideration in the **Bellrock OfTDA MPA Screening Report (Volume 3)**. Further details on the methodology for the MPA assessment are also provided in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and the **Bellrock OfTDA MPA Screening Report (Volume 3)**.

### 2.6.3 European Protected Species Licence

89. Annex IV of the Habitats Directive sets out a list of animals and plants that are considered European Protected Species (EPS) and protected under the Habitats Regulations. Under the Habitats Regulations, it is unlawful to:
- Deliberately capture, injure or kill an EPS;
  - Deliberately disturb an EPS; and
  - Damage or destroy a breeding site or resting place of an EPS.
90. However, it may be lawful to carry out certain activities which are likely to cause disturbance or injury to EPS, if an EPS licence is sought. This process is detailed in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**. The Applicant will apply to MD-LOT for EPS licence(s) for the Bellrock OfTDA as appropriate should these be required in the future.

## **2.6.4 Basking Shark Licence**

91. Basking sharks *Cetorhinus maximus* are a Priority Marine Feature (PMF) in Scotland's seas and are protected under Schedule 5 of the Wildlife and Countryside Act 1981, and under Part 3 and Schedule 6 of the Nature Conservation (Scotland) Act 2004. Under these protections, it is prohibited to kill, injure or take by any method basking sharks and any other species listed in Schedule 5, or to disturb these species intentionally or recklessly.
92. For commercial survey activities (e.g. geophysical surveys), a licence to disturb basking sharks may be required. The Applicant will apply for a basking shark licence should this be required with MD-LOT as the relevant licensing authority.
93. Further information on basking sharks is provided in **Chapter 7: Fish and Shellfish Ecology**.

## **2.6.5 Priority Marine Features**

94. As part of its approach to effective marine nature conservation as presented in the Marine Nature Conservation Strategy, the Scottish Government developed a list of the PMF in Scotland's Seas. Scotland's National Marine Plan provides policy for the protection for PMFs (General Policy 9).
95. Since 2014, 81 species and habitats present in the seas around Scotland have been identified as PMFs. The list, which was developed by Marine Scotland (now Marine Directorate), the Joint Nature Conservation Committee and Scottish Natural Heritage (now NatureScot), covers species and habitats that are a priority for conservation in Scotland, including intertidal and continental shelf habitats, deep sea habitats, mammals, fish, shellfish and other invertebrates. Please refer to **Chapter 6: Intertidal and Benthic Ecology**; **Chapter 7: Fish and Shellfish Ecology**; and **Chapter 8: Marine Mammals**.

## **2.6.6 Biodiversity Enhancement**

96. Scottish Government Policy, including the Scottish Biodiversity Strategy to 2045 (Scottish Government, 2024b), SNMP and NPF4 (Scottish Government, 2023a), contain an emphasis on addressing the nature crises through developments making a contribution towards both halting biodiversity loss and supporting biodiversity and marine enhancement. The Bellrock OfTDA EIA Report will provide details of how specific embedded environmental measures are proposed to avoid or reduce environmental effects for Offshore Transmission Infrastructure. In the terrestrial environment the Bellrock Onshore Transmission Development Area EIA will consider biodiversity enhancement and Nature Inclusive Design options for Onshore Transmission Infrastructure.
97. The Applicant acknowledges the importance of contributing positively to biodiversity and supports the principle of including nature inclusive design and nature enhancement where feasible. During the detailed design of the Bellrock Offshore Transmission Infrastructure, consideration will be given to apply Nature Inclusive Design to the Bellrock Project in order to contribute to biodiversity enhancement and nature positive outcomes, in line with available guidance at the time.

## 2.7 Other Consenting Requirements

### 2.7.1 Decommissioning

98. Sections 105 to 114 of the Energy Act 2004 (the Act) contain the statutory decommissioning scheme for offshore wind and marine energy installations and their related electric lines (collectively termed Offshore Renewable Energy Installations (OREIs). The Scottish Ministers will require a costed decommissioning programme for OREIs in Scottish waters to be submitted by the Applicant for approval. Scottish Ministers further have the power to determine specific approaches to decommissioning, including stipulating the form, timing, and size of financial securities required.
99. The document ‘Decommissioning of Offshore Renewable Energy Installations in Scottish Waters or in the Scottish part of the Renewable Energy Zone under The Energy Act 2004: Guidance Notes for Industry (in Scotland)’ was published by Marine Scotland in July 2022 (Scottish Government, 2022a). This guidance document sets out the legislative and policy framework; decommissioning requirements in Scotland; requirements for Decommissioning Programmes; environmental and safety considerations; and financial considerations. Decommissioning Programmes are expected to contain information on decommissioning standards, financial security, residual liability and industrial cooperation and collaboration.
100. Section 5 of the Guidance Note states that “*an indication of the decommissioning proposals should be included as part of the statutory consenting or licensing process so that the feasibility of removing the infrastructure can be assessed as part of the application process*”. The Bellrock OfTDA EIA Report will include an assessment of potentially significant effects during the decommissioning phase, with any uncertainty on the impacts upon receptors from activities during decommissioning clearly explained, along with the implications for the assessment of effects.

### 2.7.2 Safety Zone Applications

101. Section 95 and Schedule 16 of the Energy Act 2004 set out that Safety Zones can be established for any phase of an offshore renewable energy project in designated areas, where it is deemed appropriate for safety reasons.
102. Safety Zones are intended to ensure the safety of individuals on the relevant Offshore Transmission Infrastructure and vessel(s) during construction, O&M, extension or decommissioning by prohibiting non-project vessels from navigating through a designated area for a specific period. Vessels are generally prohibited from entering an active Safety Zone unless for the purposes of saving life, property, or if in distress, with further exceptions detailed in the Electricity Regulations 2007.
103. While the total number and sequencing of Safety Zones to be established within the Bellrock OfTDA has not yet been defined, anticipated details of Safety Zones are detailed in **Section 3.5.5 of Chapter 3: Project Description**.
104. Further details on Safety Zones are discussed in **Chapter 11: Shipping and Navigation**.

### **2.7.3 Pre-application Consultation**

105. The Marine Licensing (Pre-application Consultation (PAC)) (Scotland) Regulations 2013 (hereafter referred to as the PAC Regulations), apply to activities occurring within Scottish Territorial Waters (within 12 nm). There is currently no provision for PAC in the MCAA 2009, so these requirements are not applicable in respect of relevant applications in the Scottish Offshore Region (12 nm to 200 nm), however the Applicant has committed to adopting the principles of PAC in accordance with the PAC Regulations for the entire Bellrock OfTDA to ensure that all potential stakeholders are aware of the Bellrock Project prior to the submission of the Marine Licence Application and Bellrock OfTDA EIA Report. This approach was also taken for the Bellrock WFDA, which is also located beyond 12 nm of the coast. Details on the approach to stakeholder engagement and public consultation carried out in relation to the Bellrock OfTDA is provided in **Section 4.3**.

## **2.8 Scoping Questions to Consultees**

106. The following question is posed to consultees to help frame and focus their response to the legislative and policy context for the Bellrock OfTDA, which will in turn inform the EIA:
- Considering the Scottish Biodiversity Strategy to 2045 (Scottish Government, 2024b), can any advice be provided around expected levels of biodiversity enhancement that might be expected for Offshore Transmission Infrastructure in addition to embedded and additional mitigation, and do you accept that biodiversity enhancement will be considered during the detailed design phase of the Bellrock Project?



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## 3 Project Description

### 3.1 Introduction

107. This Chapter provides an overview of the Bellrock Offshore Transmission Development Area (OfTDA) and describes the Bellrock Offshore Transmission infrastructure to be included within the Bellrock OfTDA Marine Licence Application. It also provides an overview of the main activities that will be undertaken during construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure under the Marine Licence.
108. The Bellrock OfTDA (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. An overview of the Bellrock Offshore Transmission Infrastructure is provided in **Section 3.3** and **Section 3.4**.
109. **Section 1.5 in Chapter 1: Introduction** provides an overview of the Bellrock Development Areas. As noted in **Chapter 1: Introduction**, part of the Bellrock OfTDA overlaps with the whole of the Bellrock Wind Farm Development Area (WFDA). The scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment; therefore, the Bellrock Wind Farm Infrastructure is not included in this **Bellrock OfTDA Scoping Report** other than in the Bellrock OfTDA Whole Project Assessment (see **Section 4.6**). Planning Permission in Principle will be sought for the Bellrock Onshore Transmission Infrastructure under the Town and Country Planning (Scotland) Act 1997 (a Scoping Report which is due for submission to Aberdeenshire Council by the end of 2026).

### 3.2 Design Envelope Approach

110. A parameter-based design envelope approach will be adopted within the Bellrock OfTDA EIA Report. The Project Design Envelope (PDE) will set out a minimum and maximum design scenario for each design parameter (where relevant) within which the final Bellrock Offshore Transmission Infrastructure design will fall. These parameters will be further refined once more detailed engineering studies (including acquisition of site-specific data) have been undertaken.
111. The PDE will include all relevant technical, spatial and temporal elements of the Bellrock Offshore Transmission Infrastructure, and the proposed methodology to be employed for construction, O&M, and decommissioning.
112. In each of the technical chapters of the Bellrock OfTDA EIA Report, the receptor specific worst-case scenario will be determined from the PDE parameters and then assessed. This is a standard approach widely accepted by stakeholders and regulators and is necessary to maintain design

flexibility at this early stage of project development. Further details of the PDE approach are provided in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

113. The information presented in this Chapter outlines the options and flexibility required by the Applicant and the range of potential design, location and activity parameters upon which the scoping of impacts is based. The final design of the Offshore Transmission Infrastructure will be within the PDE and requirements of the subsequent Marine Licence, enabling detailed design and procurement to be undertaken post-consent award whilst retaining the validity of the Bellrock OfTDA EIA Report and consents.
114. The need for flexibility in consents is a key aspect of any large development but is particularly necessary for offshore wind farm projects where technology is expected to evolve over long project development timescales. The PDE must, therefore, provide sufficient flexibility to allow the Applicant and their supply chain to use the most efficient and economical technology and techniques in the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure, without affecting the surrounding environment to a greater extent than the worst-case scenarios assessed within the Bellrock OfTDA EIA Report.
115. The PDE presented in this **Bellrock OfTDA Scoping Report** will continue to evolve as the Bellrock Project progresses, incorporating new information, regulatory requirements, and stakeholder feedback. For example, site investigation results from the Bellrock OfTDA, where it overlaps with the whole of the Bellrock WFDA, have informed foundation studies and helped narrow the range of feasible offshore substation (OfSS) foundation options. Ongoing refinement of the PDE will be documented within the Bellrock OfTDA EIA Report.

### 3.3 Bellrock Offshore Transmission Development Area Overview

116. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary extends seaward of Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and consequently the Bellrock OfTDA also includes all marine considerations in this intertidal area of overlap. The Bellrock OfTDA also overlaps with whole of the Bellrock WFDA (see **Figure 1.1 (Appendix A (Volume 1))**).
117. The Bellrock Offshore Transmission Infrastructure includes:
- **OfSS(s)**: up to six fixed bottom substructure (FBSS) OfSS(s) (**Section 3.4.1**), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s)**: up to five High Voltage Alternating Current (HVAC) interconnector cable(s) (**Section 3.4.5.2**), each approximately 25 km in length, all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA, with associated cable protection where required;

- **Offshore export cables:** between two and six offshore export cables (either HVAC or High Voltage Direct Current (HVDC)), each approximately 170 km in length, with associated cable protection where required;
- **Offshore reactive compensations station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) (**Section 3.4.2**), located at least 39 km from the Scottish coastline (MHWS) (not required should a HVDC electrical design be adopted);
- **Scour protection:** for the OfSS(s) and the OfRCS(s) where required (**Section 3.4.4**);
- **Landfall:** between two and six ducts installed by a trenchless technique and offshore export cables installed below MHWS at Cowie, Aberdeenshire (**Section 3.4.6**); and
- Ancillary infrastructure including buoys (**Section 3.4.7**).

118. The Bellrock Project will connect into the National Electricity Transmission System at the Hurlie substation, west of Stonehaven in Aberdeenshire. The Bellrock OfTDA Scoping Boundary extends to 155 km from shore, in water depths up to 145 m below Lowest Astronomical Tide (LAT) and covers an area of 3,610 km<sup>2</sup>. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (see **Section 3.6**) to form the Bellrock OfTDA on which the Marine Licence Application (and accompanying Bellrock OfTDA EIA) will be based (see **Section 1.4 of Chapter 1: Introduction**).
119. At the time of writing, the extent of the OnTDA is also being refined and verified. Site selection activities are ongoing and will be presented in the Bellrock OnTDA Scoping Report.

## 3.4 Infrastructure

### 3.4.1 Offshore Substation(s)

120. The OfSS(s) are required to transform the electricity generated by the wind turbine generators within the Bellrock WFDA to allow for the reliable and efficient transport of electricity to the grid connection point at the Hurlie substation.
121. The PDE includes a maximum of six OfSS(s), each consisting of topside (above water) mounted on a FBSS (**Section 3.4.3**). The topside will comprise the substation equipment and ancillary facilities (e.g. transformers, switchgears, auxiliary systems). The OfSS(s) may also include a helideck.
122. The OfSS(s) will be installed within the part of the Bellrock OfTDA that overlaps with the whole of the Bellrock WFDA. The PDE parameters for the OfSS(s) topsides are presented in **Table 3.1**. These parameters will be refined post-scoping.



**Table 3.1: Offshore Substation Design Envelope**

| Parameter/Unit                                                                                                                                                                                                             | Minimum      | Maximum   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Number of OfSS(s)                                                                                                                                                                                                          | 1            | 6         |
| Transmission type                                                                                                                                                                                                          | HVDC or HVAC |           |
| Approximate topside dimensions (m) (l x w) <sup>1</sup>                                                                                                                                                                    | 45 x 35      | 135 x 100 |
| Approximate topside height above LAT (m) <sup>2</sup>                                                                                                                                                                      | 40           | 90        |
| <p>Notes:</p> <p><sup>1</sup> The topside dimensions will be influenced by the number of OfSS(s) and the resulting export capacity of each OfSS(s).</p> <p><sup>2</sup> Maximum height including lightning protection.</p> |              |           |

### 3.4.2 Offshore Reactive Compensation Station(s) (High Voltage Alternating Current Only)

123. If HVAC transmission technology is used, the length of the offshore export cable route may require the installation of reactive compensation equipment on a FBSS (referred to as an OfRCS(s)). An OfRCS(s) is similar in structure to an OfSS and is used to control reactive power flows and maintain acceptable voltage levels in the HVAC transmission system.
124. The PDE includes a maximum of two OfRCS(s) (**Section 3.4.3**). The topside will comprise the reactive compensation station main equipment (e.g. shunt reactors, switchgear, control and protection systems) and ancillary facilities.
125. The OfRCS(s) will be located within the OfRCS Area of Search (see **Figure 1.3 (Appendix A (Volume 1))**). The OfRCS(s) Area of Search has been defined to ensure that its western boundary is no closer than 39 km from the coastline (at MHWS) to ensure no onshore visual impact from the OfRCS(s) (see **Chapter 15: Seascape, Landscape and Visual Impact** for details). The eastern boundary of the OfRCS(s) Area of Search has been defined to represent an adequate distance from the Bellrock WFDA for the OfRCS(s) to operate effectively.
126. The PDE parameters for the OfRCS(s) topsides are presented in **Table 3.2**. These parameters will be further refined and updated post-scoping.

**Table 3.2: Offshore Reactive Compensation Station Design Envelope**

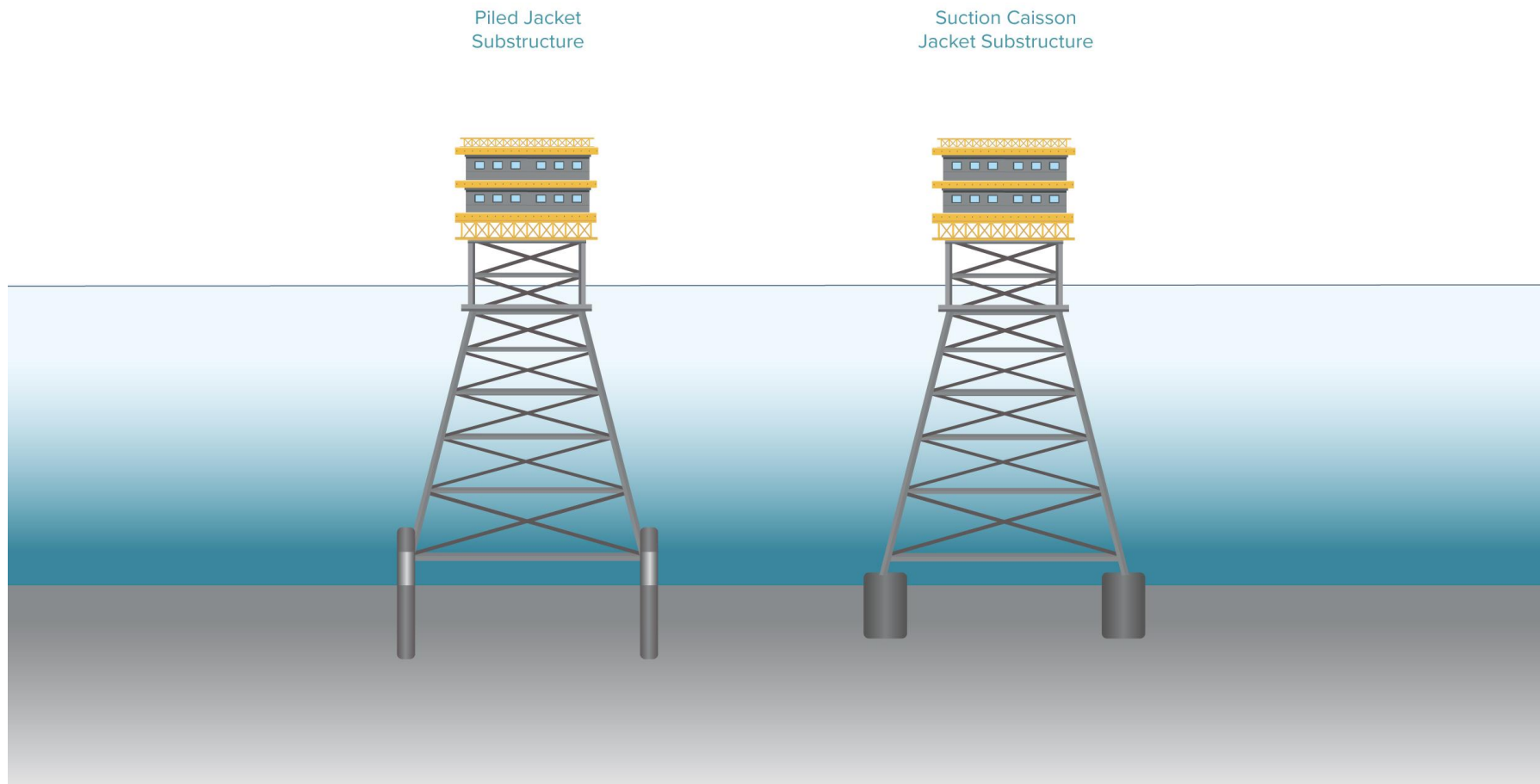
| Parameter                                                                                                                                                                 | Minimum | Maximum  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| Number of OfRCS(s)                                                                                                                                                        | 1       | 2        |
| Transmission type                                                                                                                                                         | HVAC    |          |
| Approximate topside dimensions (m x m) <sup>1</sup>                                                                                                                       | 40 x 40 | 100 x 90 |
| Approximate topside height above LAT (m) <sup>2</sup>                                                                                                                     | 40      | 70       |
| <p>Notes:</p> <p><sup>1</sup> The topside dimensions will be influenced by the number of OfRCS(s).</p> <p><sup>2</sup> Maximum height including lightning protection.</p> |         |          |

### 3.4.3 OfSS and OfRCS Fixed Bottom Substructures

127. The OfSS(s) and OfRCS(s) will be installed on FBSSs. The final design of the substructures will depend on factors including but not limited to technology readiness and availability, seabed conditions, water depth, wave, wind and tidal conditions, health and safety, economics and procurement approach. As site conditions (e.g. water depth and seabed type) vary across the Bellrock OfTDA Scoping Boundary it is possible that more than one substructure design will be used. A summary matrix of substructure options is provided in **Section 3.4.3.3**.
128. The Bellrock OfTDA EIA Report will consider different FBSS options based on their worst-case design parameters. Piled jacket substructures or suction caisson substructures may be used for the Bellrock OfSS(s)/OfRCS(s). **Table 3.3** outlines the parameters for FBSSs, while **Plate 3.1** shows a diagram of each FBSS under consideration.



Plate 3.1: FBSS Options



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### 3.4.3.1 Piled Jacket Substructure

129. Piled jacket substructures are formed of a steel lattice construction, which comprises steel members (such as steel tubes) and welded joints. The jacket substructure is anchored to the seabed by pin piles which are attached to the jacket feet and driven or drilled into the seabed.

#### 3.4.3.1.1 Driven Piles

130. During driving, the pin pile is typically driven to the required penetration depth by an impact or vibratory hammer. In the event of a pile refusal (i.e. the pile becoming stuck due to challenging or unforeseen conditions) drilling may be used to progress the pile before being driven again until final penetration is reached.

#### 3.4.3.1.2 Drilled and Grouted Piles

131. Drilled and grouted piles are similar to driven piles and are typically used in hard soil conditions. However, pin piles are installed through drilling a void into the seabed to a target depth and then grouting in-situ to seal the connection between the pile and the surrounding ground.

### 3.4.3.2 Suction Caisson Jacket Substructure

132. Suction caisson jacket substructures (also known as suction piles, suction buckets or suction cans) are similar to the piled jacket substructure described above, differing by the method in which the jacket is attached to the seabed, using suction caissons rather than pin piles. Suction caissons are typically hollow steel canisters, capped at the top and open at the bottom and attached underneath the legs of the jacket.
133. The substructure is installed by lowering it onto the prepared seabed. A pipe runs through each suction caisson which pumps/sucks water out of each caisson. As this happens, and because of the suction force generated, the caissons are pulled down into the seabed. Once the required penetration depth has been achieved the pump is switched off and, if needed, grout is injected under the caisson to fill any remaining airgaps and ensure contact between the soil and the caisson. Suction caissons do not require to be drilled or hammered into the seabed.

### 3.4.3.3 Summary of Fixed Bottom Substructures

134. **Table 3.3** provides a summary of the PDE for FBSSs for the Bellrock OfSS(s) and OfRCS(s).

**Table 3.3: FBSS Design Envelope**

| Parameter                                                       | Minimum (per OfSS/OfRCS) | Maximum (per OfSS/OfRCS) |
|-----------------------------------------------------------------|--------------------------|--------------------------|
| <b>Piled Jacket Substructure</b>                                |                          |                          |
| Number of legs                                                  | 4                        | 6                        |
| Approximate maximum total footprint on seabed (m <sup>2</sup> ) | 2,025                    | 4,800                    |
| Number of pin piles per jacket                                  | 8                        | 16                       |
| Approximate pin pile diameter (m)                               | 3                        | 4                        |

| Parameter                                                       | Minimum (per OfSS/OfRCS) | Maximum (per OfSS/OfRCS) |
|-----------------------------------------------------------------|--------------------------|--------------------------|
| Approximate pin pile blow energy (kJ)                           | -                        | 3,000                    |
| <b>Suction Caisson Jacket Substructure</b>                      |                          |                          |
| Number of legs                                                  | 3                        | 8                        |
| Approximate maximum total footprint on seabed (m <sup>2</sup> ) | -                        | 15,000                   |
| Approximate suction caisson diameter (m)                        | -                        | 20                       |

135. A summary of the potential substructure types, detailing potential compatible configurations of associated substructure types is presented in **Table 3.4**. **Table 3.4** also identifies which options would require scour protection and/or piling activities.

**Table 3.4: Summary Matrix of FBSS Types**

| Substructure Type                   | Foundation Options                                                                            | Scour Protection | Impact Piling |
|-------------------------------------|-----------------------------------------------------------------------------------------------|------------------|---------------|
| Piled jacket structure              | <ul style="list-style-type: none"> <li>Driven pin piles</li> <li>Drilled pin piles</li> </ul> | Yes              | Yes           |
| Suction caisson jacket substructure | <ul style="list-style-type: none"> <li>Suction caissons</li> </ul>                            | Yes              | No            |

### 3.4.4 Scour Protection

136. Where the seabed sediment is soft enough to be mobilised, sediment transport can lead to the formation of scour around infrastructure installed on or in the seabed (e.g. substructures). The depth of scour is dependent on the shape of the infrastructure installed, the characteristics of the seabed sedimentology and metocean conditions (mainly currents near the seabed).
137. Scour created around substructures can, in turn, lead to additional fatigue, wear and tear to the installed infrastructure. In the worst-case, it can lead to the need for complex corrective maintenance campaigns. Therefore, the use of scour protection, both in terms of volume and material, is an important consideration for projects. Commonly used scour protection types and those which are under consideration for the Bellrock OfTDA include concrete mattresses, graded rock placement/rock bags, grout bags, and artificial frond mats.
138. **Table 3.5** outlines these main types of scour protection and the volumes anticipated to be required for each foundation type.

**Table 3.5: Scour Protection Design Envelope**

| Parameter                                                                             | Design Envelope                                                                                                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scour protection type                                                                 | <ul style="list-style-type: none"> <li>Concrete mattresses;</li> <li>Rock placement (berm or rock bags);</li> <li>Grout bags; and</li> <li>Artificial frond mats.</li> </ul> |
| Approximate maximum scour protection area per driven pile (m <sup>2</sup> )           | 804                                                                                                                                                                          |
| Approximate maximum scour protection area per suction caisson (m <sup>2</sup> )       | 8,000                                                                                                                                                                        |
| Approximate maximum scour protection footprint per OfSS(s)/OfRCS(s) (m <sup>2</sup> ) | 24,200                                                                                                                                                                       |

### 3.4.5 Offshore Export Cables and Interconnector Cable(s)

139. The Bellrock Offshore Transmission Infrastructure includes offshore export cables and, if required, interconnector cable(s), including associated ancillary equipment. These are described below, together with the proposed burial and protection methods to be employed.

#### 3.4.5.1 Offshore Export Cables

140. Offshore export cables will be laid between the OfSS(s) and the landfall, to allow the transmission of renewable electricity from the Bellrock Wind Farm Infrastructure to the National Electricity Transmission System. These will be HVAC or HVDC armoured cables containing electrical and fibre optic cores. For the HVAC solution, the offshore export cables will be routed from the OfSS(s) to the OfRCS(s) and from the OfRCS(s) to the landfall.
141. Between two and six cables will be laid within an offshore export cable corridor located within the Bellrock OfTDA Scoping Boundary shown in **Figure 1.1 (Appendix A (Volume 1))**, with a maximum total cable length of 1,020 km (i.e. the total length of all offshore export cables combined).
142. The offshore export cables voltage rating will depend on the selected technology for the transmission system. The typical voltage ratings for an HVAC offshore export cables are 220 kV or 275 kV and for HVDC are 320 kV or 525 kV. Therefore, this range of voltage ratings is being considered at this stage of project design, pending confirmation of the transmission technology selection. Offshore export cables parameters are given in **Table 3.6**.
143. The offshore export cables will be buried below the seabed, where possible, to ensure these are protected and to minimise interaction with other sea users. Considering the anticipated length of the offshore export cables, a combination of burial and external protection methods may be required, to be defined at later stage through a Cable Burial Risk Assessment (CBRA). See **Section 3.4.5.3** for further details on cable burial and protection.

144. Due to the limitations of cable lay vessels to hold a certain volume or length of cable, there may be the need for cable joints on the offshore export cable. These joints would be put in place during the installation of the offshore export cables and would be either “straight line” joints or joints which require a cable “bite” (or loop) to be installed adjacent to the initial cable trench.
145. Prior to any installation on the seabed, it is likely that seabed preparation activities will be required, either as site preparation works<sup>16</sup> or as part of the construction works. This would involve activities such as boulder clearance and sand wave levelling and management of unexploded ordnance (UXO). These are outlined in **Section 3.5.1**.

#### 3.4.5.2 Interconnector Cable(s)

146. Interconnector cable(s) may be necessary between the OfSS(s) to improve the reliability and efficiency of the electrical system and to minimise the total length of inter-array cables required within the Bellrock WFDA. These will be HVAC armoured cables containing electrical and optic cores.
147. The number and total length of interconnector cable(s) utilised will be determined by the number and locations of OfSS(s) together with the overall electrical design. While these items remain to be developed, for the purpose of this **Bellrock OfTDA Scoping Report**, it has been assumed that up to five interconnector cable(s) may be installed, totalling up to 125 km in length. See all considered parameters in **Table 3.6**.
148. The interconnector cable(s) will either be surface laid or buried. Should they require burying or protection this would be subject to further studies and a CBRA.
149. As with the offshore export cables, the exact installation and cable protection methods and measures are unlikely to be known until post-consent.

#### 3.4.5.3 Cable Burial and Protection

150. Where cable burial is undertaken (i.e. offshore export cables and interconnector cable(s)), a detailed CBRA (following relevant guidance) will be prepared to determine the target burial depth and methods to be used for installation at each point on the route.
151. The burial target depths are typically 1 to 2.5 m. Greater burial depth may be targeted in specific areas (up to 3.5 m), for example in areas of increased commercial fishing or shipping density.
152. The burial methods that may be used include jet trenching, mechanical trenching, cable ploughing and mass flow excavator. The maximum width of the cable trench for each offshore export cable is typically 2 m, with potential for wider sections up to 5 m depending on seabed conditions. The typical maximum width of seabed directly disturbed by the installation tool is up to 7 m, per cable, depending on the burial method used. The maximum width of seabed affected by installation of each offshore export cable and interconnector cable, and the volume of material to be deployed for cable protection will be presented within the Bellrock OfTDA EIA Report.

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<sup>16</sup> For the purposes of EIA, site preparation is assessed under construction works

153. If burial to the required depth is not possible, either due to seabed conditions or crossings with other infrastructure, then cable protection may be required. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative protection is needed. The type of cable protection selected will be dependent on various factors, for example seabed conditions, the physical processes present, and safety considerations associated with installation, O&M and decommissioning.
154. External cable protection may include concrete mattresses, rock placement (rock berms/rock bags) and grout bags. Additional cable protection may be required at structures, including cast-iron shells (articulated pipes), bend restrictors and High-Density Polyethylene Tubular Protection.

#### 3.4.5.4 Cable Crossings

155. There may be a requirement for the Bellrock offshore export cables and/or interconnector cable(s) to cross each other or third-party subsea cables or pipelines. Any such third-party crossing will have a specific crossing design which will be agreed with the relevant asset owner in advance of installation, in the form of a crossing agreement.

#### 3.4.5.5 Summary of Offshore Export Cable and Interconnector Cable Design

156. A summary of the PDE for the offshore export cables and interconnector cable(s) is provided in **Table 3.6**. **Table 3.6** also identifies cable burial requirements.

**Table 3.6: Offshore Export Cable and Interconnector Cable Design Envelope**

| Parameter                                                                                | Minimum              | Maximum              |
|------------------------------------------------------------------------------------------|----------------------|----------------------|
| <b>Offshore Export Cables</b>                                                            |                      |                      |
| Number of offshore export cables                                                         | 2                    | 6                    |
| Approximate total length of all offshore export cables (km)                              | -                    | 1020                 |
| Voltage (kV)                                                                             | 220 HVAC<br>320 HVDC | 275 HVAC<br>525 HVDC |
| Approximate offshore export cable corridor width (m)                                     | 800                  | 2500                 |
| <b>Interconnector Cable(s)</b>                                                           |                      |                      |
| Number of interconnector cable(s)                                                        | 0                    | 5                    |
| Approximate total length of all interconnector cable(s) (km)                             | -                    | 125                  |
| Voltage of interconnector cable(s) (kV)                                                  | 66                   | 275                  |
| <b>Cable Burial</b>                                                                      |                      |                      |
| Target burial depth for offshore export cables (m) (if burial is required) <sup>1</sup>  | 1                    | 3.5                  |
| Target burial depth for interconnector cable(s) (m) (if burial is required) <sup>1</sup> | 1                    | 2.5                  |
| Approximate cable trench width (m) (if required) <sup>2</sup>                            | 1                    | 2                    |

| Parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Minimum | Maximum |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|
| Approximate width of seabed disturbance from installation tool/process per cable (m) based on trench or plough <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                            | 2       | 7       |
| <p>Notes:</p> <p><sup>1</sup> Burial depth could be up to 5 m in certain areas depending on seabed conditions and will be subject to the findings of the CBRA.</p> <p><sup>2</sup> Trench width could be up to 5 m in certain areas depending on seabed conditions and will be subject to the findings of the CBRA.</p> <p><sup>3</sup> Width of seabed disturbance will vary depending on the burial technique adopted. A maximum width of up to 25 m is expected when using pre-lay grapnel run.</p> |         |         |

### 3.4.6 Landfall

157. The offshore export cables will be brought ashore and connected to the onshore export cables at landfall. The landfall works will take place within a temporary construction compound located landward of MHWS within the Landfall Area of Search.
158. A trenchless technique will be utilised at landfall to install underground ducting (or other conduit) between the onshore entry point and the offshore exit point (the latter being seaward of MHWS). Horizontal directional drill (HDD) is the reference trenchless method, while microtunnelling/pipe jacking and Direct Pipe are recognised industry alternatives that may be screened for suitability based on bore length, geology, duct configuration, and environmental constraints (which will all be confirmed at a future stage of engineering development).
159. Trenchless techniques involve the horizontal drilling bores underground and installing ducts to allow the offshore export cables to be pulled through the ducts, significantly minimising surface disturbance. The use of trenchless techniques will avoid open-cut trenching in the intertidal zone and therefore avoids the associated impacts to intertidal habitats and disturbance to beach and coastal users. The offshore export cables will come ashore at Cowie, north of Stonehaven, Aberdeenshire. Between two and six ducts will be required for the Bellrock offshore export cables. The entry point alignment and exit point will be determined post-consent, during the detailed design stage.
160. For the purpose of this **Bellrock OfTDA Scoping Report**, details of the construction process for HDD are provided, as an example of the landfall construction process in **Section 3.5.2.1**. The actual trenchless technique will be selected and described within the Bellrock OfTDA EIA Report. As alternatives to HDD, microtunnelling/pipe jacking is a trenchless installation method where a remotely controlled micro tunnel boring machine excavates soil while prefabricated pipes are hydraulically jacked in behind it. It provides high accuracy, is suitable for long, deep, or geologically challenging crossings, and minimises surface disruption. Direct Pipe is a trenchless technique combining microtunnelling and pipe jacking: a large cutting head excavates while the final steel pipe is pushed in simultaneously. It allows longer drives, handles high groundwater pressures, and avoids the need for a separate tunnel making it efficient for major infrastructure or environmentally sensitive crossings.



161. **Table 3.7** sets out the PDE for the landfall. These parameters will be further refined and updated post-scoping and once additional engineering studies have been completed to inform these potential solutions. The worst-case scenario parameters for the landfall will be set out in the Bellrock OfTDA EIA Report.
162. The landfall design envelope is described in **Table 3.7**.

**Table 3.7: Landfall Design Envelope (Seaward of MHWS)**

| Parameter/Unit                                                                                 | Bellrock OfTDA Project Design Envelope |
|------------------------------------------------------------------------------------------------|----------------------------------------|
| Landfall location                                                                              | Cowie                                  |
| Installation method                                                                            | Trenchless technique                   |
| Number of ducts installed                                                                      | 2 – 6                                  |
| Approximate minimum length of trenchless technique at landfall (to 10 m below LAT contour) (m) | 850                                    |
| Approximate maximum length of trenchless technique at landfall (to 10 m below LAT contour) (m) | 1200                                   |

163. The length of the ducts will depend on factors such as land/seabed topology, water depth, geology/soil conditions and environmental constraints and will be determined during the detailed design phase post-consent. Each duct breakout location on the seabed will be spaced typically 20 m to 50 m apart. Water depth for the duct breakout location will not be reduced to less than 6 m below LAT for permanent works. There may be a requirement to go less than this for temporary works during construction.
164. The trenchless technology entry point is located within the landfall temporary construction compound, located landward of MHWS. Infrastructure and associated activities located landward of MHWS are outside the scope of this **Bellrock OfTDA Scoping Report** and are included in the Bellrock OnTDA Scoping Report.

### 3.4.7 Ancillary Infrastructure

165. Details of ancillary infrastructure to be utilised will be determined at the detailed design phase, post-consent. However, it is anticipated that the following will be included within the Bellrock OfTDA:
- Metocean buoys (refer to **Section 3.4.7.1**); and
  - Marker buoys (refer to **Section 3.4.7.2**).
166. Any temporary works during construction would also be determined at the detailed design phase.

### 3.4.7.1 Metocean Buoys

167. Data from the on-site weather and sea condition monitoring equipment will be used to inform the detailed design of the Bellrock Offshore Transmission Infrastructure. Fixed light detection and ranging may be installed on the OfSS(s) to measure weather during the operational phase. Metocean buoys may also be deployed to measure, for example, waves, currents, wind, temperature and air pressure.
168. It is anticipated that each metocean buoy would include a lantern suitable for use as a navigational aid. Metocean buoys would likely be attached to the seabed using mooring devices such as common sinkers (a small block of heavy material such as concrete or steel) or anchored (e.g. clump weights). They could have one single mooring point or several points (usually up to three), with an anticipated total footprint including scour protection of 5 m<sup>2</sup> per anchor. **Table 3.8** outlines the PDE for metocean buoys.

**Table 3.8: Design Envelope for Metocean Buoys**

| Parameter                                                                | Value |
|--------------------------------------------------------------------------|-------|
| Approximate maximum dimensions (m) (w x h)                               | 5 x 4 |
| Maximum number during construction                                       | 2     |
| Approximate total anchor footprint during construction (m <sup>2</sup> ) | 30    |
| Maximum number during operation                                          | 2     |
| Approximate total anchor footprint during operation (m <sup>2</sup> )    | 30    |

### 3.4.7.2 Marker Buoys

169. A marker buoy is a floating device anchored to the seabed used to mark specific points or areas on the water. The number of marker buoys required across the construction phase to mark the Bellrock OfTDA and Offshore Transmission Infrastructure will be finalised as part of the construction programme development and in consultation with the Northern Lighthouse Board (NLB) and the Maritime and Coastguard Agency (MCA) and other marine users.
170. Temporary construction buoys (cardinal/special marks) may be required across the Bellrock OfTDA for above sea surface infrastructure (i.e. the OfRCS(s) and OfSS(s) and ducts for the trenchless works at landfall. It is anticipated that buoyage along the offshore export cable corridor would only be requested in the event of an ongoing hazard such as a snagging or under keel risk, and this may be temporary until suitable repairs are undertaken.
171. These temporary measures may be replaced by permanent markings in accordance with agreed requirements, for the lifetime of the Bellrock Offshore Transmission Infrastructure. During the O&M phase, if required the Bellrock OfTDA will be marked where appropriate with navigational marker buoys to provide the necessary warning to mariners of the presence of the Bellrock Offshore Transmission Infrastructure. The exact type and configuration of any navigational markers will be determined via consultation with the MCA and the NLB and will also be informed by the outputs of the project-specific Navigation Risk Assessment and supported by non-physical aids to navigation.

## 3.5 Project Timeline and Activities

172. The Bellrock Offshore Transmission Infrastructure is at an early stage of development, therefore, the details provided below are indicative. Further details on the programme of works will be set out in the Bellrock OfTDA EIA Report.
173. The timing and commencement of site preparation works, and construction activities is subject to variables such as grid connection dates, consents approval, securing project financing, supply chain and port availability, and procurement and contract award.

### 3.5.1 Site Preparation Works

174. Preparatory activities undertaken within the Bellrock OfTDA prior to the commencement of construction of the Offshore Transmission Infrastructure, which may comprise:
- Surveys, including geophysical surveys, geotechnical surveys and non-archaeological/archaeological diver/remotely operated vehicle surveys;
  - Seabed preparation including sand wave levelling, boulder clearance, and pre-lay grapnel runs;
  - Unexploded ordnance survey and/or clearance;
  - Debris clearance; and
  - Out of service cable/pipeline removal/protection.
175. Site preparation works (undertaken prior to commencement of construction) are outside the scope of the Bellrock OfTDA Marine Licence Application and will be consented through separate Marine Licence Application(s). However, to ensure a comprehensive EIA is undertaken which considers and assesses all impacts associated with the Bellrock Offshore Transmission Infrastructure, site preparation works will be assessed in the relevant technical chapters of the Bellrock OfTDA EIA Report within the construction phase assessment of the Bellrock Offshore Transmission Infrastructure.
176. Site preparation works will be undertaken for up to one year before commencement of construction, at which point such activities may continue albeit as construction works (rather than site preparation works).
177. Seabed preparation activities include sand wave levelling, boulder clearance and Pre-lay Grapnel Run which are undertaken to prepare the seabed for the laying of infrastructure such as cables and FBSSs. This is particularly important for cable laying works where boulder clearance may need to be undertaken to provide a flat seabed free from obstructions and mobile sediments prior to the cable laying vessel commencing works. These seabed preparations also assist with minimising damage to the offshore export cables and interconnector cable(s) and maintaining the required cable burial depths.
178. UXO on or in the seabed may exist as a result of previous conflict or munition dumping and, if present, poses a significant health and safety hazard during construction within the Bellrock OfTDA. Therefore, UXO must be appropriately managed (e.g. identification of potential UXOs

through undertaking desktop studies, geophysical surveys, and field investigations, avoiding potential UXOs through micro-siting of the Bellrock Offshore Transmission Infrastructure, and ultimately relocation (if applicable and permitted as an option), or UXO clearance in-situ). If UXO clearance is considered necessary, separate Marine Licence Application(s) will be submitted prior to UXO clearance works, supported by an accompanying assessment of potential impacts on relevant receptors.

179. Detailed layout design works will be undertaken prior to conducting the detailed UXO survey prior to construction, to ensure the UXO survey is targeted in the areas where infrastructure is to be placed. A desktop UXO Threat and Risk Assessment for the Bellrock OfTDA will be undertaken to inform the Bellrock OfTDA EIA Report. This will be confirmed as the understanding of the Bellrock OfTDA evolves through geophysical surveys.
180. The hierarchy of UXO mitigation and clearance techniques which will be adopted during design and construction and if necessary, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure, in order of preference, are:
- Avoid (through micro-siting of infrastructure);
  - Move UXO without clearing it (if applicable and accepted as an option);
  - Remove the UXO without clearing it (if applicable and accepted as an option);
  - Low-order clearance, such as deflagration (if above options not suitable/unsafe); and
  - High-order clearance (if above options not suitable/unsafe or in the event that low-order deflagration was unsuccessful after a minimum of three attempts, as per Marine Environment: UXO Clearance Joint Position Statement (United Kingdom Government, 2025).

### 3.5.2 Construction

181. Commencement of construction to install the Bellrock Offshore Transmission Infrastructure as authorised by the Bellrock OfTDA Marine Licence (excluding site preparation works), includes:
- Pre-installation surveys (intrusive and/or non-intrusive);
  - OfSS/OfRCS installation and associated vessel activities; fixed foundation installation; scour protection installation; topside lifting, installation and integration; offshore lifting operations and testing and commissioning;
  - Offshore export cable installation and associated vessel activities, landfall installation (seaward of MHWS), cable lay and burial, installation of cable crossings, cable installation at OfSS(s)/OfRCS(s), installation of terminations at the OfSS(s)/OfRCS(s), installation of subsea joints, post-lay burial and cable protection installation;
  - Final commissioning following cable connections and snagging; and
  - Post-installation surveys.
182. The construction of the Bellrock Offshore Transmission Infrastructure is anticipated to take up to six years. However, this duration is indicative, and the final durations will be subject to a number of factors, such as number of OfSS(s), OfRCS(s) and offshore export cables being deployed and their energisation schedule, substructure installation methods, weather conditions, availability of resources and supply chain arrangements, among other factors.
183. The construction activities outlined below will be developed and defined as the Bellrock OfTDA progresses.
184. The Bellrock OfTDA EIA Report will not include consideration of earlier manufacturing activities, port activities (e.g. substation assembly), or transportation of the OfSS(s)/OfRCS(s) substructures. Those do not form part of the Bellrock OfTDA or activities for which consent is sought. Where those activities constitute development requiring a new planning permission or requiring a Marine Licence, that would need to be applied for, separately, by the relevant party seeking such consent. This application would need to be accompanied by any appropriate environmental assessment or required appraisal.

#### 3.5.2.1 Construction of Landfall

185. General activities for installation of offshore export cables at the landfall are as follows (details of a HDD construction are provided as an example of the landfall construction process, however as noted in **Section 3.4.6** other trenchless techniques may be used):
- Establish construction compound (onshore);
  - Drill a pilot hole from the landfall temporary construction compound, under the cliff line and intertidal area, and enlarge it to the required bore diameter through repeated reaming. Bentonite drilling fluid (a non-toxic liquified natural clay) is used to lubricate the drill, stabilise the borehole and transport drill cuttings back to the landfall temporary construction compound for processing;

- Where required, a temporary offshore exit pit may be excavated or dredged, to the required depth, at the offshore end of the trenchless installation to facilitate installation of the duct and subsequent cable pull-in;
- Install a pre-assembled duct which is pulled through the bore. When required, an offshore export cable is then pulled into each bore from an offshore vessel, either straight from the vessel without buoyancy assistance (typically along or near the seabed), or supported by buoyancy aids so that the offshore export cable floats in the water column during installation (note that duct may be stored on the seabed locally prior to transport to the site for installation through the HDD exit point, or stored on land for installation through the HDD entry point);
- Where temporary offshore exit pits are created by dredging, they will be temporarily backfilled following duct installation, until the cable pull-in operation commencement. The ducts would be re-exposed by dredging in order to provide access for cable pull-in. Alternatively, rock mattresses and/or rock bags may be used to secure the duct prior to cable installation, in which case these would be removed prior to cable installation. In either scenario, the duct and cable will be buried once cable installation is complete;
- Ducts are connected to onshore infrastructure, proved for cable pull-in, and the cables are installed from an offshore vessel;
- Construction and installation may operate continuously (24-hour operation) and may use either direct or floating pull-in methods, where the pre-assembled duct is installed from the offshore end of the bore. Detailed design will define the entry point, burial depth and bore profile, and exit point; and
- A cable duct will be required for each offshore export cable.

186. The construction activities at the landfall would likely require four to ten vessels to undertake works and manage navigational safety around the temporary works area. Not all vessels may be present at once. As a worst case, the ducts will be installed sequentially, with each duct estimated to take between five and 16 weeks to install, however further site-specific investigations to inform methodology, vessel spread and programme are still to be undertaken. Nearshore activities may occur intermittently, depending on methodology and nearshore weather conditions.

### 3.5.2.2 Construction of OfSS(s) and OfRCS(s) with Fixed Bottom Substructures

187. General activities for installation of FBSS OfSS(s) and OfRCS(s) are as follows:

- Works described in **Section 3.5.1** would be undertaken following commencement of construction;
- FBSS installation:
  - Transportation of piles and jackets from port to site and installation using an appropriate vessel spread and methodology, such as being towed out to site by barge;
  - Piles (if used) will be driven and/or drilled into the seabed from either a floating vessel or a heavy lift vessel using hydraulic or vibratory hammers for driven piles or a drilling rig for drilled piles. There is also a possibility of a post-piling strategy where jackets are installed, followed by piles driven through the jacket base;

- Suction caissons (if used), will be lowered onto the seabed, and water pumped out of each bucket to pull down the caisson into the seabed through the resulting differential pressure; and
- Deployment of scour protection where required.
- OfSS(s) and OfRCS(s) topside installation:
  - Transportation of the OfSS(s)/OfRCS(s) topsides to the Bellrock OfTDA; and
  - Integration of the OfSS(s)/OfRCS(s) topsides with the FBSSs within the Bellrock OfTDA using a suitable crane vessel.
- OfSS(s) and OfRCS(s) commissioning;
- Final commissioning following cable connections and snagging; and
- Post-installation surveys.

### 3.5.2.3 Offshore Export Cables and Interconnector Cable(s) Installation

188. General activities for installation of offshore export cables and interconnector cable(s) are described as follows:

- Works described in **Section 3.5.1** would be undertaken following commencement of construction;
- A cable laying vessel (CLV) will be used to install the cables. Surface laid, simultaneous cable lay and burial, and post-lay burial methods are being considered. Where cable jointing is required, the ends of installed sections will be temporarily left on the seabed, and then recovered to complete the joints on board of the CLV;
- The cables will be pulled into each OfSS(s)/OfRCS(s) during installation by the CLV. Alternatively, the cable ends may be temporarily laid on the seabed, followed by recovery by the CLV and pulled into the OfSS(s)/OfRCS(s) by a winch. Following pull in and connection to the OfSS(s)/OfRCS(s), the required commissioning and testing will take place;
- The specifications for cable burial and protection for the offshore export cables and, if required, interconnector cable(s), will be subject to further studies and a CBRA. The anticipated methods are described in **Section 3.4.5.3**;
- If cable/pipe crossings are required, appropriate protection will be installed to create the required separation between the assets; and
- Post-installation surveys will be completed to confirm the burial depths as installed.

### 3.5.2.4 Site Preparation and Construction Vessels and Transport

189. Typical vessels and transport used during site preparation works and construction of the Bellrock Offshore Transmission Infrastructure may include:

- Accommodation vessels;
- Anchor handling tug supply vessels;

- CLV (pre-lay grapnel run, lay and burial);
- Crew transfer vessel;
- Guard vessels;
- Heavy lift vessels;
- Helicopters;
- Jack-up vessels;
- Remotely operated vehicle support vessels;
- Scour protection installation vessels;
- Service and commissioning vessels;
- Service operation vessels;
- Support vessels;
- Survey vessels; and
- Tow tug vessels.

### 3.5.3 Operation and Maintenance

190. The operational phase of the Bellrock Offshore Transmission Infrastructure is anticipated to be up to 40 years.
191. At this early scoping stage of the development, the overall O&M strategy is not yet finalised. A maintenance plan will be established prior to the commencement of the O&M period, which will outline the activities and the frequency of inspections and maintenance to be carried out on the Bellrock Offshore Transmission Infrastructure. Further details will be provided in the Bellrock OfTDA EIA Report.
192. Routine maintenance activities will include scheduled maintenance, mandatory inspections, condition and structural health monitoring, geophysical surveys and minor repairs such as marine growth and guano removal and OfSS(s)/OfRCS(s) painting repairs to protect from corrosion. Non-routine corrective maintenance will be required in the case of faults and failures on the Bellrock Offshore Transmission Infrastructure and may include cable reburial and repair activities of the offshore export cables and interconnector cable(s).
193. The CBRA will determine the frequency of inspection of the offshore export cables to ensure that cables are buried to an adequate depth. The integrity of the cable protection system (including external protection and bend restrictors) will also be inspected.
194. The following vessels and transport may be used during the O&M phase:
- Cable repair vessel;
  - CLV;
  - Crew transfer vessel;



- Drone;
- Guard vessel;
- Helicopter;
- Heavy-lift vessel;
- Jack-up vessel;
- Remotely operated vehicle;
- Service operation vessels;
- Survey vessel;
- Tow tug; and
- Uncrewed service vessel.

### **3.5.4 Decommissioning**

195. At the end of operational life, the Bellrock Offshore Transmission Infrastructure will be decommissioned. Details of the decommissioning of the Bellrock Offshore Transmission Infrastructure will be included in a Decommissioning Programme, which is a requirement under Section 105 of the Energy Act 2004 for developers of 'electric lines'. The Decommissioning Programme will be subject to approval by the Scottish Ministers.
196. The Decommissioning Programme will consider good industry practice, guidance and legislation for decommissioning works which includes anticipated costs and financial securities.
197. Further details will be provided in the Bellrock OFTDA EIA Report.

### **3.5.5 Safety Zones**

198. Section 95 and Schedule 16 of the Energy Act 2004 set out that Safety Zones can be established for any phase of an offshore renewable energy project in designated areas, where it is deemed appropriate for safety reasons.
199. The Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007 were introduced in August 2006 clarifying the process for applying for a Safety Zone and advertising such applications. The Applicant will follow these regulations and associated guidelines when applying for Safety Zones noting that the Marine Directorate are now responsible for Safety Zone applications for projects within Scottish waters.
200. Safety Zones are intended to ensure the safety of individuals on the relevant Offshore Transmission Infrastructure and vessel(s) during construction, O&M, extension or decommissioning by prohibiting non-project vessels from navigating through a designated area for a specific period. Vessels are generally prohibited from entering an active Safety Zone unless for the purposes of saving life, property, or if in distress, with further exceptions detailed in the Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007.

201. While the total number and sequencing of Safety Zones to be established within the Bellrock OfTDA has not yet been defined, it is anticipated that the following Safety Zones will be applied for in advance of construction, O&M and decommissioning, in relation to all relevant sea surface structures within the Bellrock OfTDA:
- Safety Zones for up to 500 m around each OfSS(s) and OfRCS(s) during its construction;
  - Safety Zones for up to 50 m around each OfSS(s) and OfRCS(s) when construction works have been completed but prior to commissioning, or where construction works are partially completed and a construction vessel is not present;
  - Safety Zones for up to 500 m around each OfSS(s) and OfRCS(s) during major maintenance during operation;
  - Prior to commencement of decommissioning, Safety Zones for up to 500 m around each OfSS(s) and OfRCS(s) during its decommissioning; and
  - Consideration will also be given to an application for up to 500 m operational Safety Zones throughout the O&M phase, with any such application following the relevant application process and consultation requirements in place at the time.
202. Details of the Safety Zones will be published by the Applicant and communicated through multiple channels to ensure that mariners and other stakeholders are fully aware of any access restrictions within the Bellrock OfTDA. The Safety Zones will also be monitored by support craft (i.e. guard vessels). The means and level of required monitoring will be risk assessed and agreed with the MCA prior to the commencement of construction.
203. Advisory safe passing distance may also be requested around maintenance activities on offshore export cables and/or interconnector cable(s) as required.

## 3.6 Site Selection and Consideration of Alternatives

204. This section provides an overview of the site selection process and consideration of alternatives to date for the Bellrock OfTDA.
205. The Bellrock OfTDA EIA Report will outline the stages of site selection and will set out any optioneering or refinements to the PDE (including, but not limited to technologies, infrastructure options, and offshore export cable corridor refinement) that have taken place as a result of iterative engineering design and the EIA process or in response to consultation and stakeholder feedback.
206. The main alternatives that have been considered as part of this process will also be presented in the Bellrock OfTDA EIA Report, including a 'no development option' (i.e. the scenario where the Bellrock Project is not developed) and Offshore Transmission Infrastructure that has been considered and discounted. The Bellrock OfTDA EIA Report will set out the alternatives that have been considered as part of this process and the main reasons for selecting particular options,

considering environmental sensitivities, technical feasibility and the Bellrock Project's objectives (see **Section 1.3 of Chapter 1: Introduction**).

### 3.6.1 Site Selection for the Bellrock Project

207. This section presents the Bellrock Project site selection process to date, including the identification of the Bellrock WFDA and the defining of the Bellrock OfTDA Scoping Boundary, including linkages with the development of the Bellrock OnTDA. Further details on the site selection process for the Bellrock OnTDA will be presented in the Bellrock OnTDA Scoping Report.

#### 3.6.1.1 Bellrock Wind Farm Development Area

208. In November 2017, Crown Estate Scotland (CES) announced their intention to run a leasing round for commercial scale offshore wind energy projects in Scottish waters. This leasing round became known as the 'ScotWind' leasing round.

209. To inform the spatial development of the ScotWind leasing round, Marine Scotland (now Marine Directorate), as Planning Authority for Scotland's seas undertook a planning exercise to identify areas of search for offshore wind development. The study considered various geospatial data layers to carry out a multi-criteria analysis depicting both opportunities (such as average wind speed or existing grid connections) and constraints (such as fishing activity, shipping traffic or environmental sensitivities).

210. This informed the draft Sectoral Marine Plan (SMP) for Offshore Wind Energy (the draft SMP) (Marine Scotland, 2018a) which identified the 17 most sustainable areas (known as Draft Plan Options) for the future development of commercial-scale offshore wind energy in Scotland. In 2020, the Scottish Government published the SMP for Offshore Wind Energy (Scottish Government, 2020) which provided the spatial strategy to support CES's ScotWind leasing round. The SMP was informed by stakeholder engagement and a Sustainability Appraisal (comprising a Strategic Environmental Assessment, a Habitats Regulations Appraisal, and a Social and Economic Impact Assessment). Amendments were made to the boundaries of seven of the Draft Plan Options, two Draft Plan Options were not progressed and 15 sustainable areas (known as Plan Options) were identified for commercial-scale offshore wind development. (see **Section 2.2.1**). In January 2021, CES launched the ScotWind leasing round which released the 15 Plan Options defined within the SMP for new commercial scale offshore wind developments to help Scotland achieve its Net Zero emissions target by 2045.

211. To select the Plan Option for which the Applicant would seek development rights, the Applicant undertook a desktop appraisal of the 15 Plan Options released under the ScotWind leasing process to identify (in the Applicant's view) the most viable Plan Option(s) for the development of a floating offshore wind farm. Noting each Plan Option was already identified within the SMP (Scottish Government, 2020) as being, in principle, a sustainable location for future offshore wind development, the Applicant's desktop appraisal considered environmental, commercial, socioeconomic, engineering, constructability and technical constraints and opportunities. In January 2022 the Applicant was awarded seabed rights for the E1 Option Area for the development of the Bellrock Project.

212. Through the SMP and CES leasing process, the Applicant defined the boundary of the Bellrock WFDA shown in **Figure 1.1 (Appendix A (Volume 1))** (within which the Bellrock Wind Farm

Infrastructure, OfSS(s), interconnector cable(s), and the start of the offshore export cables will be located). The Applicant submitted consent Applications for the Bellrock Wind Farm Infrastructure in April 2026 (see **Section 1.5** for details).

### 3.6.1.2 Bellrock Offshore Transmission Development Area

213. As noted in **Chapter 1: Introduction**, in April 2025 the National Energy System Operator, in its statutory role as system operator and under licence from Ofgem, directed the Bellrock Project to connect to the National Electricity Transmission System at the Hurlie substation west of Stonehaven in Aberdeenshire. The policy background to this is provided in **Section 1.2 of Chapter 1: Introduction** and **Section 2.2.2 of Chapter 2: Legislative and Policy Context**.
214. The site selection process for the Bellrock OfTDA and OnTDA has been undertaken concurrently, ensuring a holistic approach to considering environmental and engineering constraints across marine and terrestrial environments.
215. The site selection process has followed a staged approach, firstly by considering landfall options along the east Aberdeenshire coastline between Findon and St Cyrus to bring the offshore export cables ashore. During this initial stage, 12 potential landfall locations were identified. To assess technical feasibility, an area of 12,000 m<sup>2</sup> was assumed for the landfall temporary construction compound. Several potential landfall locations were removed from the longlist stage for reasons including unfeasible long length of trenchless crossing, inaccessibility, and insufficient space, resulting in a landfall shortlist which comprised of options at Portlethen, Cowie and Tangleha.
216. A structured appraisal of environmental constraints was undertaken for these three potential landfall locations and broad potential corridors for Offshore Transmission Infrastructure and Onshore Transmission Infrastructure (in the area immediately surrounding the landfall) were also considered simultaneously at this stage.
217. Alongside the consideration of potential landfall locations, investigations were conducted into identifying suitable locations for the OfRCS(s) to define the OfRCS(s) Area of Search (**Figure 1.3 (Appendix A (Volume 1))**). In parallel to this, potential onshore substation locations in proximity to the Hurlie substation were also considered to ensure the entire Bellrock transmission assets were considered as a whole.
218. The Portlethen landfall was discounted due to onshore environmental constraints. Public consultation and further technical and environmental appraisal were undertaken on the Cowie and Tangleha Landfall Areas of Search. Following this appraisal the Cowie Landfall Area of Search, north of Stonehaven, was selected as the preferred Bellrock landfall option due to fewer overall environmental and technical constraints compared to the Tangleha Landfall Area of Search.
219. Key considerations within the site selection process for the Bellrock OfTDA include (but are not limited to):
- Nature conservation designated sites;
  - Commercial fishing activity;
  - Bathymetry, geology and water depth;
  - Marine infrastructure and other users (existing and proposed);

- Marine archaeological and cultural heritage;
- Navigational safety (for the OfRCS(s)); and
- Seascape, landscape, and visual impacts (for the OfRCS(s)).

### 3.6.1.3 Site Selection Methodology

220. The site selection process included a detailed constraint mapping exercise to map potential environmental and technical constraints and identify potentially less-constrained corridors linking the identified landfalls with the Bellrock WFDA, via suitable areas for the OfRCS(s).
221. A 'Black-Red-Amber-Green' assessment of identified landfall, OfRCS(s) and Offshore export corridor options was undertaken against a suite of environmental and engineering criteria, undertaken by specialists in each discipline. Each criterion was assessed as follows:
- Black - Option may not be deliverable due to environmental, consenting or engineering risk;
  - Red - Option has a high environmental or engineering risk;
  - Amber - Option has a medium environmental or engineering risk; and
  - Green - Option has a low environmental or engineering risk.
222. This multidisciplinary site selection process has informed the Bellrock OfTDA Scoping Boundary (see **Section 1.4** and **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))**), which incorporates the chosen landfall at Cowie and the OfRCS(s) Area of Search (**Figure 1.3 (Appendix A (Volume 1))**). The Applicant is continuing the site selection and design refinement, considering the constraints and receptors identified during desk-based research, site specific geophysical, benthic and vessel surveys and consultation, to identify offshore export cable corridors which are environmentally, technically and economically acceptable, and appropriate for accommodating the required Offshore Transmission Infrastructure. A structured appraisal is being undertaken to fully understand the environmental impact, constructability and commercial considerations, to facilitate reducing the Bellrock OfTDA Scoping Boundary to the OfTDA boundary upon which the Bellrock OfTDA Marine Licence Application and associated Bellrock OfTDA EIA Report will be based. This process is being supported by consultation with key stakeholders, including CES, Marine Directorate Licensing Operations Team, NatureScot, the MCA and the NLB, fishers, local communities and other marine users including other offshore wind developers (see **Section 4.3**).

### 3.6.2 Alternatives Considered for the Bellrock Offshore Transmission Infrastructure

223. Although in an early phase of design development, the Applicant has already considered and made a series of design decisions to seek to minimise the potential environment effects of the Bellrock Offshore Transmission Infrastructure during its construction, O&M and decommissioning. This includes commitment to install landfall infrastructure via trenchless techniques (see **Section 3.4.6**) to avoid open-cut trenching in the intertidal zone and therefore avoiding direct impacts to Garron Point Site of Special Scientific Interest (see **Chapter 5: Marine Geology, Oceanography, and**

**Physical Processes**), impacts to intertidal habitats (see **Chapter 6: Intertidal and Benthic Ecology**) and disturbance to beach and coastal users (see **Chapter 13: Marine Infrastructure and Other Users**).

- 224. In addition, the use of floating technology for the OfSS(s) and OfRCS(s) has been discounted at this stage, due to the early phase of technology development and the limited design information to inform the OfTDA EIA.
- 225. Feedback received during the scoping process and through ongoing consultation and design refinement will identify further alternatives that can be considered prior to submission of the application.

### 3.6.3 Further Design Envelope Refinement

- 226. The PDE (including, where appropriate, the boundary of the Bellrock OfTDA and the Offshore Transmission Infrastructure) will be refined as more detailed site-specific information (including geophysical surveys and benthic sampling undertaken within the offshore export cable corridor and OfRCS(s) Area of Search) becomes available, further stakeholder engagement (including request for a Scoping Opinion) is undertaken and the EIA progresses.
- 227. As the Bellrock Project develops and options are refined, environmental mitigation measures and methodologies for construction, O&M, and decommissioning will also be developed. The Bellrock OfTDA EIA Report will describe how the project design, infrastructure, routes and locations have evolved as the Bellrock Project progresses through the EIA process.

## 3.7 References

Bellrock Offshore Wind Farm Limited (2026). Bellrock WFDA Section 36 Consent and Marine Licence Applications, including the Environmental Impact Assessment Report, Report to Inform Appropriate Assessment, and Supporting Documentation (Volume I to VII). Available at: <https://marine.gov.scot/?q=node/27552>

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# 4 Approach to Scoping and Environmental Impact Assessment

## 4.1 Overview of Environmental Impact Assessment

228. An Environmental Impact Assessment (EIA) is a process for identifying the potential impacts and likely significant environmental effects of the construction, operation and maintenance (O&M), and decommissioning of a proposed development, and outlining how the severity of a potential significant effect will be reduced to an acceptable level. Effects can be positive or negative. An EIA Report will be submitted to the Marine Directorate - Licensing Operations Team (MD-LOT) setting out the Applicant's assessment of likely significant environmental effects, to support the Bellrock Offshore Transmission Development Area (OfTDA) Marine Licence Application (see **Chapter 1: Introduction**) and acts to inform the decision-making process for determining the Marine Licence.
229. This Chapter describes the principles of EIA and the approach being taken to identify and evaluate likely significant effects of the Bellrock Offshore Transmission Infrastructure on the physical, biological and human environment. This Chapter also details the stakeholder consultation and engagement that will be undertaken as part of the EIA process. An overview of the proposed methodologies for the Bellrock OfTDA Whole Project Assessment, Cumulative Effects Assessment (CEA), Habitats Regulations Appraisal (HRA) and Marine Protected Area (MPA) assessment is also presented.
230. Where the assessment methodology for considering the significance of a potential impact upon a receptor deviates from the assessment methodology presented in this Chapter (due to guidance or legislation), the receptor-specific methodology is presented within the receptor's technical chapter. This is relevant for:
- **Chapter 11: Shipping and Navigation;**
  - **Chapter 15: Seascape, Landscape and Visual Impact;**
  - **Chapter 16: Socioeconomics and Tourism;**
  - **Chapter 17: Climate Change;** and
  - **Chapter 19: Major Accidents and Disasters.**



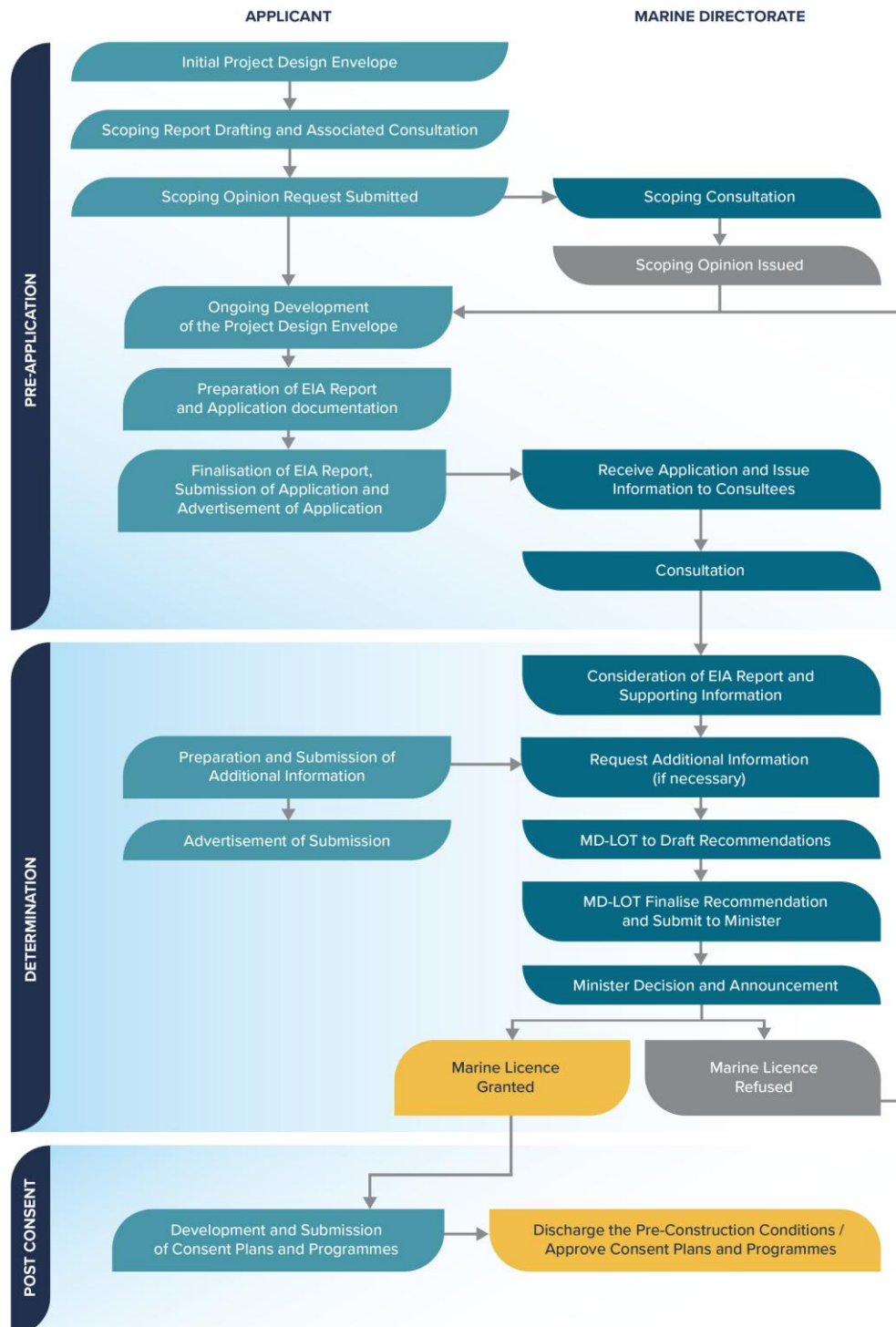
### 4.1.1 Environmental Impact Assessment Process

231. The EIA process comprises several stages, namely scoping, consultation, environmental assessment and reporting, determination and post-consent monitoring:
- **Scoping** – a voluntary process involving the production of a Scoping Report (this document; the **Bellrock OfTDA Scoping Report**) to request a formal Scoping Opinion from the Scottish Ministers;
  - **Consultation** - undertaken in the pre-application phase to inform the Bellrock OfTDA site selection process and the design and assessment of the Bellrock Offshore Transmission Infrastructure;
  - **EIA Report** – a written report that contains an outline of the policy and guidance, a consultation summary, description of the environmental baseline, the results of the EIA for each technical receptor, an assessment of effects during all phases of the Bellrock Offshore Transmission Infrastructure, identification of any required mitigation, and an assessment of cumulative effects between EIA chapter topics and with other developments;
  - **Determination** – consultation on, and examination of the Bellrock OfTDA EIA Report by the competent authority, after which they must reach their reasoned conclusion on the likely significant effects of the Bellrock Offshore Transmission Infrastructure on the environment. The competent authority<sup>17</sup> must publish their ‘decision notice’; and
  - **Post-consent Monitoring** - undertaken during the site preparation, construction and operational phases of the Bellrock Offshore Transmission Infrastructure. This may be a requirement as part of the decision notice.
232. **Plate 4.1** provides an overview of the stages involved in the Marine Licence process and illustrates how the Scoping stage fits within this process.

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<sup>17</sup> For the Bellrock OfTDA, the competent authority is the Scottish Ministers, with MD-LOT acting on their behalf.

Plate 4.1: Stages of the Consenting Process in Scottish Waters



233. The EIA process involves understanding the proposed construction, O&M, and decommissioning activities of the Bellrock Offshore Transmission Infrastructure, and the environment within which it will be located. The potential impacts of the Bellrock Offshore Transmission Infrastructure are then evaluated to determine the resulting potential effects upon the receiving environment/receptors and the significance of those effects. This enables the predicted effects of the Bellrock Offshore

Transmission Infrastructure to be understood by statutory consultees, and other interested parties such as members of the public, and the relevant determining authorities before a consenting decision is made.

234. For the purposes of this **Bellrock OfTDA Scoping Report** and the Bellrock OfTDA EIA Report, the term 'impact' is used to describe the changes that arise as a result of the Bellrock Offshore Transmission Infrastructure (for example, underwater noise during piling or vessel activity). The term 'effects' refers to the consequences of those changes (for example, disturbance of marine mammals).
235. Schedule 3 of the Marine Works (Environmental Impact Assessment) Regulations 2007 and Schedule 4 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (hereafter collectively termed the 'EIA Regulations') state that the description of the likely significant effects should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. For receptors which are scoped into the EIA, these factors will be assessed in full in the EIA technical chapters.
236. Where potential impacts are likely to result in significant effects, specific measures will need to be taken to reduce or avoid such impacts (mitigation measures). The approach to mitigation measures is set out in **Section 4.5.3.5**.

## 4.1.2 Environmental Impact Assessment Scoping

237. This **Bellrock OfTDA Scoping Report** has been prepared to support a request for a Scoping Opinion for the Bellrock Offshore Transmission Infrastructure from MD-LOT, on behalf of the Scottish Ministers. This **Bellrock OfTDA Scoping Report** identifies which potential impacts and receptors will be assessed as part of the Bellrock OfTDA EIA Report, based on an initial understanding of the design of the Bellrock Offshore Transmission Infrastructure and environmental baseline, and identifies the receptors which can be scoped out of the Bellrock OfTDA EIA. It also describes the methodologies which will be used for the assessment, as per industry best practice and receptor-specific guidelines, as set out in **Chapter 5** to **Chapter 19**.
238. Under the EIA Regulations, once a request for a Scoping Opinion has been submitted to the Scottish Ministers for consideration, they are required to consult with the consultation bodies outlined in Regulation 2(1) of each set of EIA Regulations.
239. Effective scoping enables agreement to be reached on the environmental effects and methodologies to be taken forward and reported in much greater detail in the Bellrock OfTDA EIA Report. This **Bellrock OfTDA Scoping Report** defines the scope of the assessment and focuses on the key matters. It also provides an opportunity for early interaction with stakeholders, strengthening the assessment evidence base and allowing active participation of interested parties in project development and decision-making. This can in turn improve project design and reduce its environmental impact.
240. The Scoping Boundary presented within this **Bellrock OfTDA Scoping Report** is described in **Section 1.4** and shown within **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))**.

### 4.1.3 Design Evolution Process

241. The EIA process allows opportunities for environmental concerns to be addressed within the design of the Bellrock Offshore Transmission Infrastructure. Typically, a number of design iterations take place prior to the final design to account for environmental constraints and stakeholder engagement comments received. This iterative design process is fundamental to the Bellrock OfTDA EIA and will develop following feedback via the Scoping Opinion and other engagement with stakeholders, including marine users.
242. The iterative design process integrates the advice and experience of the environmental receptor experts that undertake the scoping and impact assessments for the Bellrock OfTDA EIA Report in regular liaison with the Applicant's development team. This ensures that design evolution is informed by a project-wide understanding of environmental sensitivities such that the mitigation hierarchy, including consideration of the avoidance of key receptors, is adhered to throughout the development of the Bellrock Offshore Transmission Infrastructure and the wider Bellrock Project.
243. Environmental and social considerations have been central to the design evolution of the Bellrock Offshore Transmission Infrastructure to date, informed by a combination of stakeholder engagement, EIA surveys and technical studies. The design evolution process undertaken to date is evidenced in **Chapter 3: Project Description**.

## 4.2 Guidance and Best Practice

244. The assessment of potential effects in the Bellrock OfTDA EIA Report will use the standard guidance detailed below to assist with the production of a robust and proportionate EIA, in particular:
- National Planning Framework 4 (Scottish Government, 2023);
  - Planning Circular 1/2017: Environmental Impact Assessment Regulations (Scottish Government, 2017);
  - Planning Advice Note (PAN) 1/2013 Environmental Impact Assessment (Scottish Government, 2013);
  - A Handbook on Environmental Impact Assessment (Scottish National Heritage, 2018);
  - Marine environment: licensing and consenting requirements<sup>18</sup> (MD-LOT, 2024a);
  - Mitigation and monitoring plans (Marine Directorate, 2025);
  - Guidelines for Ecological Impact Assessment in the United Kingdom (UK) and Ireland. Terrestrial, Freshwater, Coastal and Marine (Chartered Institute for Ecology and Environmental Management, 2018);
  - Delivering Proportionate EIA. A Collaborative Strategy for Enhancing UK EIA Practice (Institute of Environmental Management and Assessment (IEMA), 2017);

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<sup>18</sup> Note the Applicant is aware that the Marine Directorate is currently consulting on updates to this guidance. Any updated guidance will be considered in the Bellrock OfTDA EIA Report, as appropriate.

- IEMA Guidance: Implementing the Mitigation Hierarchy from Concept to Construction (IEMA, 2024);
- Offshore Wind Farms: Guidance Note for EIA in Respect of Food and Environmental Protection Act and Coast Protection Act Requirements (Centre for Environment, Fisheries and Aquaculture, 2004);
- Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms (RenewableUK, 2013);
- Assessment of the Environmental Impacts of Cables (Convention for the Protection of the Marine Environment of the North-East Atlantic, 2009);
- EIA of Projects – Guidance on the preparation of the Environmental Impact Assessment Report. (Office for Official Publications of the European Communities 2017) (European Commission, 2017);
- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission, 1999);
- Guidelines for data acquisition to support marine environmental assessments of offshore renewable energy projects (Centre for Environment, Fisheries and Aquaculture, 2012);
- A Review of Assessment Methodologies for Offshore Windfarms (Collaborative Offshore Wind Research into The Environment METH-08-08) (Maclean et al., 2009);
- IEMA Environmental Impact Assessment Guide to Shaping Quality Development (IEMA, 2015);
- Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024);
- Electricity Act 1989 – s. 36 applications: guidance for applicants on using the design envelope (*generally relevant guidance relating to the design envelope.*) (Scottish Government, 2022); and
- The Cumulative Effects Framework (CEF), which is under development by MD-LOT and NatureScot will be considered for use in the Bellrock OFTDA EIA Report (for relevant receptors) when available.

245. Each technical chapter (**Chapter 5** to **Chapter 19**) also refers to chapter-specific guidance proposed to undertake their assessments.

## 4.3 Consultation and Stakeholder Engagement

### 4.3.1 Introduction

246. Regular engagement with stakeholders is key to the delivery of the EIA for the Bellrock Offshore Transmission Infrastructure. In advance of the formal submission of the Bellrock OfTDA Marine Licence Application, consultation and engagement will be carried out to allow stakeholders and local communities the opportunity to provide feedback on all aspects of the Bellrock OfTDA, and inform the scope of studies, surveys and assessments being undertaken, and influence the project design. This is in accordance with best practice and guidance and will build on feedback provided by MD-LOT's consultees in the Scoping Opinion.
247. Where relevant, and if applicable, advice received in respect of the Bellrock Wind Farm Development Area (WFDA) has been considered in the technical chapters of this **Bellrock OfTDA Scoping Report**.

### 4.3.2 Engagement to Date

248. Stakeholder engagement undertaken to support early planning of the Bellrock OfTDA and pre-scoping activities has been through virtual and in-person meetings and consultation events, workshops, and wider industry events. The purpose of this engagement was to provide general Bellrock Project and OfTDA updates, including programme and survey updates; identify potential collaboration opportunities; identify and discuss potential constraints with environmental, social and economic stakeholders; and receive notification of any forthcoming regulatory guidance or updates.
249. Ongoing engagement includes separate quarterly update meetings with MD-LOT, Crown Estate Scotland and Scottish Fishermen's Federation to discuss the Bellrock Project; and bi-weekly meetings with the East Region Shipping and Navigation Group of ScotWind Developers Forum and the East Region Commercial Fisheries Group of ScotWind Developers Forum.
250. In addition, the Applicant submitted a Scoping Information Package to MD-LOT, Marine Directorate - Marine Analytical Unit, Marine Directorate - Science Evidence Data Digital, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package detailed the key potential impacts and assessment methodologies proposed by the Applicant to obtain feedback and updates pertinent to the Bellrock OfTDA submission. Responses were received in June 2026. Relevant responses are detailed in **Table 4.1**.
251. Stakeholders engaged on environmental, consenting, policy and/or project update matters relating to the Bellrock OfTDA to date include but are not limited to:
- Aberdeenshire Council;
  - His Majesty's Coastguard;
  - Historic Environment Scotland;
  - Maritime and Coastguard Agency;

- Northern Lighthouse Board;
- Developers of other proposed offshore wind farm projects such as Bowdun, Ossian, and Aspen Offshore Wind Farms;
- Crown Estate Scotland;
- Fisheries associations (Scottish Fishermen's Federation, Scottish White Fish Producers Association, Scottish Pelagic Fishermen's Association and the North and East Coast Regional Inshore Fisheries Group);
- Fishers in the Stonehaven area;
- Local communities;
- MD-LOT (including Marine Directorate - Marine Analytical Unit and Marine Directorate - Science Evidence Data Digital);
- NatureScot;
- East Region Shipping and Navigation Group of ScotWind Developers Forum; and
- East Region Commercial Fisheries Group of ScotWind Developers Forum.

252. Agreements to date are summarised in **Table 4.2**<sup>19</sup>. Receptor-specific consultation is provided in each technical chapter (**Chapter 5** to **Chapter 19** of this **Bellrock OfTDA Scoping Report**).

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<sup>19</sup> **Table 4.2** sets out consultation in respect of the Bellrock OfTDA only, however, consultation responses received in respect of the Bellrock WFDA through the WFDA Scoping Opinion (MD-LOT, 2024b) and any other relevant representations will be considered as appropriate.

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**Table 4.1: Scoping Information Package Consultation Relevant to Proposed Approach to Impact Assessment**

| <b>Consultee</b> | <b>Date/Document</b>                                                              | <b>Stakeholder Comment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>How Comment is Addressed</b>                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot       | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the proposed approach for determining effect significance?</u></b><br><br>The approach presented in slide 11 appears to be a standard approach, in which effect significance is to be assessed using a matrix-based approach to combine sensitivity and magnitude. A similar question is included within receptor specific slides, as such NatureScot provide further comment in receptor specific sections below.                                                                                                                                                                                       | Noted. Receptor specific comments from NatureScot are addressed in the relevant technical chapters.                                                                                                                                                                                                                                                                                                                            |
| NatureScot       | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with this definition of Whole Project for the Bellrock Project?</u></b><br><br>The 'Whole Project' overlaps the WFDA, OfTDA and Onshore Transmission Development Area (OnTDA). NatureScot agree with this definition of the Whole Project.                                                                                                                                                                                                                                                                                                                                                                    | Noted                                                                                                                                                                                                                                                                                                                                                                                                                          |
| NatureScot       | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with this approach to assess the Bellrock Project as a whole?</u></b><br><br>NatureScot agree with the approach to assess the Bellrock Project as a whole, within the OfTDA Report. It is appropriate to assess the overall impacts of the whole project, and not to separately assess infrastructure impacts separately. However, NatureScot note that this may be confusing to appraise during consultation. It will be important to clearly indicate that the OfTDA itself, whilst being considered with the WFDA and OnTDA, is to form a separate Application to other aspects of the Offshore Wind Farm. | The Bellrock OfTDA Whole Project Assessment approach has been further developed following the Scoping Information Package and is now detailed in <b>Section 4.6</b> . The approach sets out how interactions between the Bellrock OfTDA and the other Development Areas will be considered, where these have the potential to influence the magnitude of identified impact pathways and the significance of resulting effects. |
| NatureScot       | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: When is the CEF expected to be available to inform project level environmental assessments?</u></b><br><br><b><u>Question: If the CEF is not available within the Bellrock OfTDA EIA timescales, do you agree with the proposed CEA guidance?</u></b><br><br><b><u>Question: Is a 6-month cut off for any projects/plans considered quantitatively in the CEA considered proportionate?</u></b>                                                                                                                                                                                                                            | Noted. NatureScot advised that further input should be sought from MD-LOT regarding the proposed CEA approach and the CEF. As no specific comments were received from Marine Directorate on these matters during the consultation on the Scoping Information Package, the relevant scoping questions have been retained within <b>Section 4.10</b> to seek further consultee input.                                            |

| Consultee  | Date/Document                                                                     | Stakeholder Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | How Comment is Addressed                                                                                                                                                            |
|------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   | <p><b><u>Question: Do you agree with this tiered approach as a mechanism to assess cumulative impacts with other plans and projects?</u></b></p> <p>Advice should be sought from Marine Directorate in relation to questions on the CEA methodology and the CEF. However, at this point NatureScot are broadly content the proposed approach to CEA as outlined in the Scoping Information Package.</p> <p>NatureScot note a potential discrepancy with the proposed approach for the Bellrock OfTDA and that undertaken in the <b>Bellrock WFDA EIA Report</b>, which used a four-month cut-off period pre-submission for all receptors other than marine mammals and ornithology, which used a six-month cut-off.</p> | The proposed approach to the identification of plans and projects to be considered in the CEA, including the application of a six-month cut-off is detailed in <b>Section 4.7</b> . |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the HRA?</u></b></p> <p>NatureScot agree with the outlined approach to HRA.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Noted. See the <b>Bellrock OfTDA HRA Screening Report (Volume 2)</b> .                                                                                                              |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the nature conservation Marine Protected Areas (ncMPA) Assessment?</u></b></p> <p>NatureScot agree with the proposed approach to the ncMPA Assessment (noting however our comments above).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Noted. See the <b>Bellrock OfTDA MPA Screening Report (Volume 3)</b> .                                                                                                              |

| Consultee             | Date/Document                                                                     | Stakeholder Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot            | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Are all mitigation and monitoring plans set out in current guidance expected to apply to the OfTDA as they did for the Bellrock WFDA?</u></b></p> <p><b><u>Question: The Bellrock WFDA application included full and outline plans. For the Bellrock OfTDA, are separate plans required, or can existing Bellrock WFDA plans be updated/expanded to incorporate the Offshore Transmission Infrastructure resulting in a suite of project wide plans?</u></b></p> <p>Advice should be sought from Marine Directorate (as the competent authority) in relation to questions on the Consent Plans Approach.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Noted. NatureScot advised that MD-LOT should be consulted regarding the requirement for consent plans. As no response on the requirements for consent plans was received during consultation on the Scoping Information Package, this question is retained within <b>Section 4.10</b> of the <b>Bellrock OfTDA Scoping Report</b> to seek further consultee input on the consent plans required for the Bellrock OfTDA Marine Licence Application. |
| Aberdeenshire Council | 23 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p>Aberdeenshire Council noted that the Bellrock OfTDA EIA scope appears to include consideration of a Whole Project Assessment, as set out in the Scoping Information Package. To support the development of the assessment of the whole project, Aberdeenshire Council highlighted paragraphs 2.4.18 to 2.4.22 of the Report for Infrastructure Committee for the Planning Permission in Principle application for the Caledonia Offshore Wind Farm Onshore Transmission Infrastructure, which are reproduced below:</p> <p><b><u>“Raeshaw Decision and Implications for Environmental Impact Assessment</u></b></p> <p><i>On 17 February 2026, the Inner House of the Court of Session issued its decision in Raeshaw Farms Ltd v Scottish Ministers [2026] CSIH 10 (‘the Raeshaw judgment’). The Court held that decision makers must undertake a fact-specific assessment of whether functionally linked elements should be treated as a single project when considering the likely significant environmental effects of a development. The Court did not determine what constituted a single ‘project’, instead the Court’s focus was on the adequacy and transparency of the decision-maker’s reasoning. It confirmed that defining the scope of the ‘project’ for EIA purposes is an evaluative judgment for the competent authority, to be reached on the facts and clearly explained (including by reference to relevant factors such as functional interdependence, as reflected in the Wingfield factors discussed in the judgment).</i></p> | Noted. The proposed approach to the Bellrock OfTDA Whole Project Assessment is detailed in <b>Section 4.6</b> . The Applicant considers the proposed approach to be compliant in light of the Raeshaw judgement.                                                                                                                                                                                                                                   |

| Consultee | Date/Document | Stakeholder Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | How Comment is Addressed |
|-----------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|           |               | <p><i>In light of the Raeshaw judgment, the Planning Service has had specific regard to whether the EIA screening undertaken in relation to the proposal accurately reflects the wider 'EIA project' that requires assessment. In reaching a view, officers have had regard to the degree of connection and functional interdependence between the elements of development that are the subject of this application, alongside other relevant factors identified in the case law.</i></p> <p><i>This application (APP/2025/1930) is for Planning Permission in Principle for the installation of up to four 400 kilovolt (kV) underground cables circuits, connecting the Caledonia offshore wind farm onshore substation at Burnside to the Scottish and Southern Electricity Networks Transmission substation proposed at Greens. This application for a cable circuit relates to the Caledonia OWF (subject of APP/2024/1812), and should be considered as one project for the benefit of Environmental Impact Assessment Regulations. Officers therefore made the decision to re-screen the proposal to ensure the decision clearly considered the whole project. The Raeshaw decision does not introduce any new or standalone requirement to assess the "whole project" outside the EIA regime, nor does it alter the statutory tests applicable to non-EIA development. Accordingly, while the principles in Raeshaw are relevant in informing a robust and lawful EIA screening opinion, they do not give rise to any additional assessment requirements for APP/2025/1930 beyond those undertaken as part of the screening process.</i></p> <p><i>While the Caledonia cable circuit terminates at the proposed Greens Substation, officers consider that does not, of itself, mean that any separate substation works form part of the same EIA 'project' as the development now being applied for. In particular: (i) the substation infrastructure is controlled and delivered independently of the applicant's onshore works; (ii) it is subject to separate consenting processes and timescales; and (iii) the Greens Substation is part of the wider transmission network and is not solely dependent on the Caledonia Offshore Wind connection to function. Accordingly, officers conclude that the 'project' for EIA purposes in this instance is the onshore transmission infrastructure applied for under APP/2025/1930, and the related Caledonia OWF onshore works consented under APP/2024.1812. Any separate works at the proposed Greens</i></p> |                          |

| Consultee | Date/Document | Stakeholder Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | How Comment is Addressed |
|-----------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|           |               | <p><i>Substation fall to be assessed and consented as a separate project, with cumulative interactions considered through the EIA cumulative assessment process as appropriate.</i></p> <p><i>Accordingly, the Planning Service considers that the implications of the Raeshaw judgment have been addressed through the officer assessment of EIA screening (updated to explicitly consider the project as a whole), and the reasoning set out above, and that no further procedural steps are required as a consequence of the Raeshaw judgment in determining this application."</i></p> |                          |

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**Table 4.2: Consultation to Date for the Bellrock OfTDA**

| Stakeholder/<br>Event                                      | Date/<br>Document                                                     | Agreement/Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scottish Skippers Expo 2026                                | 7 and 8 May 2026                                                      | Exhibiting to raise awareness of the Bellrock Project and facilitate engagement with commercial fisheries and other marine users, engaging in collaboration with other ScotWind developers and Scottish Renewables.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Bellrock public exhibition event                           | 3 - 5 March 2026 inclusive                                            | In person consultation event held across three locations on the 3, 4 and 5 March 2026 in Drumlithie, Stonehaven and St Cyrus respectively. The consultation events provided an opportunity for local stakeholders and communities to meet the development team, discuss the site selection process for the Bellrock offshore export cable corridors, and onshore substation, landfall and the underground onshore cable corridors, as well as finding out more about the project while offering feedback that could help shape and inform its development going forward.                                                                                                                                                                                                                                                                                                                                                                         |
| Bellrock virtual consultation event                        | 17 – 30 November 2025 inclusive                                       | Consultation event open to all stakeholders and including online consultation with four live question and answer sessions with the Applicant and digital feedback forms. The consultation event provided updates on the Bellrock OfTDA site selection and project design information and preliminary environmental information from the Bellrock WFDA EIA and provided an opportunity for stakeholders to provide feedback.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Various stakeholders                                       | Bellrock Project Update Consultation Letter (sent October 2025)       | Bellrock Project update consultation letter, emailed to 210 stakeholders outlining key updates to the Bellrock Project since the <b>Bellrock WFDA Scoping Report</b> (Bellrock Offshore Wind Farm Limited, 2024), including conformation of the change in grid connection location to the Hurlie substation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Aberdeenshire Council                                      | Email from Aberdeenshire Council to the Applicant (sent 28 July 2025) | Aberdeenshire Council confirm agreement with the proposed socioeconomics methodology regarding the Bellrock Whole Project Assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Aberdeenshire Council                                      | Email from Aberdeenshire Council to the Applicant (sent 28 July 2025) | Aberdeenshire Council confirm agreement with the proposed greenhouse gas and climate change resilience assessment methodology regarding the Bellrock Whole Project Assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Bellrock WFDA Navigational Risk Assessment Hazard Workshop | 23 July 2025                                                          | <p>A workshop was held with local and national marine stakeholders to identify and discuss potential shipping and navigation hazards. Using the information gathered from the Hazard Workshop, a hazard log was produced for use as input into the risk assessment undertaken and presented in the Chapter 12: Shipping and Navigation (Volume II) of the <b>Bellrock WFDA EIA Report</b> (Bellrock Offshore Wind Farm Limited, 2026).</p> <p>The workshop is relevant also to the Bellrock OfTDA, as it comprised surface-piercing infrastructure within the Bellrock WFDA, which included offshore substation(s) (OfSS(s)). Attendees included Brown and May Marine; Maritime and Coastguard Agency; Montrose Port; NiMa Consultants; Northern Lighthouse Board; Royal Yachting Association Scotland (also on behalf of the Cruising Association); and Scottish White Fish Producers Association. A supplemental meeting was held with the</p> |

| Stakeholder/<br>Event                                                                                                                                                                                                                                                                                                          | Date/<br>Document                 | Agreement/Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                |                                   | UK Chamber of Shipping to discuss the Hazard Workshop and receive their input.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Scottish Fishermen's Federation <sup>1</sup>                                                                                                                                                                                                                                                                                   | 5 November 2024                   | Meeting held to present the Bellrock OFTDA Scoping Boundary and approach at scoping.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Scottish Pelagic Fishermen's Association <sup>1</sup>                                                                                                                                                                                                                                                                          | 16 July 2024                      | Meeting held to present the Bellrock OFTDA Scoping Boundary and approach at scoping.                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Scottish Traditional Boat Festival 2024 <sup>1</sup>                                                                                                                                                                                                                                                                           | 21 – 23 June 2024 inclusive       | <p>The Bellrock Project exhibited at the Scottish Traditional Boat Festival in Portsoy, Aberdeenshire between 21 and 23 June 2024 (inclusive). The event presented an opportunity for stakeholders to take part in early consultations to discuss the Bellrock and Projects.</p> <p>Insights and feedback received through this non-statutory consultation event were vital in aiding stakeholder understanding of the Bellrock Hub Projects, as well as generating insights which can influence the design of the Bellrock Projects.</p> |
| Scottish Skippers Expo 2024 <sup>1</sup>                                                                                                                                                                                                                                                                                       | 9 and 10 May 2024                 | Exhibiting to raise awareness of the Bellrock Project and facilitate engagement with commercial fisheries and other marine users.                                                                                                                                                                                                                                                                                                                                                                                                         |
| Local communities (Peterhead, Fraserburgh, Longside, Mintlaw and Crimond) <sup>1</sup>                                                                                                                                                                                                                                         | 5 February 2024 – 9 February 2024 | Public consultation events held to provide local stakeholders the opportunity to meet the Applicant, find out more about the Bellrock Project, discuss the proposed infrastructure and fisher activities within and around the Bellrock OFTDA and ask any questions.                                                                                                                                                                                                                                                                      |
| Fishers Consultation Events – Peterhead and Fraserburgh <sup>1</sup>                                                                                                                                                                                                                                                           | 9 and 10 May 2023                 | The events presented an opportunity for commercial fishing stakeholders to take part in early consultations to discuss the Bellrock Project. Insights and feedback received through these consultation events were vital in aiding stakeholder understanding of the Bellrock Project, as well as generating insights which can influence the design of the Bellrock and Broadshore Hub projects.                                                                                                                                          |
| <p>Notes:</p> <p><sup>1</sup> Consultation was based on the Bellrock Project's original connection to an OfSS (see <b>Section 1.2</b>), before the connection was changed by the National Energy System Operator in April 2025 to a connection to the Hurlie substation. The Applicant considers feedback to remain valid.</p> |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 4.3.3 Pre-application Consultation

253. The Marine Licensing (Pre-application Consultation (PAC)) (Scotland) Regulations 2013 (hereafter referred to as the PAC Regulations) apply where activity is planned within Scottish inshore waters (0 nm to 12 nm). For the proposed Bellrock OFTDA, this includes the Bellrock landfall works (seaward of Mean High Water Springs) and offshore export cables within 12 nm of the coast. At the time of writing, there is no similar provision for PAC in the Marine and Coastal Access Act 2009, so the requirements do not apply in respect of relevant applications in the Scottish Offshore Region



(12 nm to 200 nm), therefore part of the Bellrock OfTDA falls outside 12 nm, where the PAC Regulations do not apply. However the Applicant has committed to adopting the principles of PAC in accordance of the PAC Regulations for the entire Bellrock OfTDA and Bellrock WFDA to ensure that all potential stakeholders are aware of the Bellrock Project prior to the submission of the Marine Licence Application and Bellrock OfTDA EIA Report. This approach was also taken for the Bellrock WFDA, which is also located beyond 12 nm of the coast.

254. The Applicant will organise and manage at least one public consultation event where interested parties, including regulators, Statutory Nature Conservation Bodies, Non-Governmental Organisations, and local communities, may consider and comment upon a prospective application for an activity defined in the PAC Regulations and the Marine (Scotland) Act 2010. The Applicant will notify any relevant delegate appointed under the Marine (Scotland) Act 2010, up to six weeks prior to a public consultation event, that an Application for a Marine Licence is to be submitted to MD-LOT. Notifications will include information relating to the Application and the time and location of the public consultation event. The Applicant will also publish a notice in at least one local newspaper(s) six weeks prior to any public consultation event which will include the following information:

- A description, including location, of the marine licensable activity;
- Details as to where further details concerning the activity may be obtained;
- The date and place of the PAC event;
- A statement explaining how persons wishing to provide comments may do so and the date by which this must be done; and
- A statement clarifying that comments are made to the Applicant and not to MD-LOT and that there will be an opportunity for representations to be made to MD-LOT on the Application.

255. The Applicant will submit a PAC Report alongside the Bellrock OfTDA Marine Licence Application which will detail how the consultation responses provided as part of the PAC process have been considered by the Applicant for the Bellrock OfTDA, including for site selection and design refinement.

#### 4.3.4 Ongoing and Future Engagement

256. In line with the EIA Regulations, MD-LOT will consult stakeholders on this **Bellrock OfTDA Scoping Report** once it has been received and accepted by the Scottish Ministers. This consultation is required to obtain advice and feedback from consultees on the potential effects which should be scoped in or scoped out of the EIA and screened in or out of the MPA assessment and HRA. This feedback will be presented in the Scoping Opinion.

257. In addition, the Applicant will make this **Bellrock OfTDA Scoping Report** available on their website ([www.bellrockwind.co.uk](http://www.bellrockwind.co.uk)) to further promote the scoping consultation process.

258. In addition to the consultation outlined above (**Section 4.3.3**), the Applicant will continue to engage with statutory stakeholders, non-statutory stakeholders, and local communities throughout the development phase of the Bellrock OfTDA, including during the EIA process. This includes

continuing with the established recurring meetings with stakeholder groups detailed above, and engagement with local communities. The Bellrock OFTDA EIA Report will provide further detail on consultation undertaken, including the outcomes of the community engagement events.

259. A Gap Analysis will be submitted alongside the Marine Licence Application and will log all stakeholder comments received as part of the Scoping process. The Gap Analysis will explain how these have been addressed in the Bellrock OFTDA EIA Report, creating an audit trail of how each stakeholder representation has been considered in the development and design (where relevant) of the Bellrock OFTDA.

## 4.4 Proportionate Environmental Impact Assessment

260. Scoping is intended to inform a proportional and robust approach to assessment through early-stage evaluation and reporting of identified likely significant effects in the EIA Report. This proactive Scoping process allows for a robust Bellrock OFTDA EIA Report whilst focusing on environmental impacts which could give rise to likely significant effects.

261. Therefore, where appropriate, this **Bellrock OFTDA Scoping Report** seeks to scope out environmental receptors and specific impacts under an aspect from further assessment with suitable justification and evidence provided. This will focus the assessment on key likely significant effects and ensure the EIA for the Bellrock OFTDA is proportionate in accordance with PAN 1/2013 (Scottish Government, 2013) and IEMA's Delivering Proportionate EIA guidance document (IEMA, 2017).

262. The following key tools/approaches have been adopted at the Scoping stage for the Bellrock OFTDA, to assist in the delivery of a proportionate EIA:

- Use of existing evidence base; and
- Inclusion of embedded environmental measures, informed by good and standard practices.

263. Only potentially significant impacts have been 'scoped in' to the EIA.

### 4.4.1 Project Design Envelope

264. A parameter-based design envelope approach will be adopted within the Bellrock OFTDA EIA Report, as detailed in **Section 3.2** in **Chapter 3: Project Description**. The Project Design Envelope (PDE) will set out minimum and maximum design scenarios for each design parameter. The PDE will include all relevant technical, spatial and temporal elements of the Bellrock Offshore Transmission Infrastructure, and the proposed methodology to be employed for construction, O&M, and decommissioning. These parameters will enable technical specialists to accurately identify and assess the potential impacts, whilst retaining sufficient flexibility to accommodate further refinement during the detailed design stage once the Bellrock Offshore Transmission Infrastructure has been consented.

265. The PDE approach allows the Bellrock Offshore Transmission Infrastructure to be assessed on a reasonable receptor-specific worst-case scenario basis. The reasonable worst-case scenario defined for any given parameter may vary by technical aspect, depending on how the parameter can be expected to interact with the receptor being considered. This is considered a standard approach and is widely accepted by stakeholders and regulators and is necessary to ensure the necessary design flexibility at this early stage of project development.
266. The information presented in **Chapter 3: Project Description** outlines the options and flexibility required by the Applicant and the range of potential design, location and activity parameters upon which the scoping of impacts is based. The final detailed design will lie within the parameters of the PDE. This will allow detailed design work to be undertaken post-consent whilst retaining the validity of the Bellrock OfTDA EIA Report.
267. The need for flexibility in the consent is a key aspect of any large development but is particularly significant for offshore wind farm projects where technology is evolving. The PDE must therefore provide sufficient flexibility to enable the Applicant and their supply chain to use the most up to date, efficient and economical technology and techniques in the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure, without affecting the surrounding environment to a greater extent than the worst-case scenarios assessed in the Bellrock OfTDA EIA Report.
268. Guidance has been prepared by Marine Scotland and the Energy Consents Unit on using the design envelope approach for applications under s.36 of the Electricity Act 1989 where flexibility is required in applications (Scottish Government, 2022). This guidance will be referred to when refining the design envelope to inform the EIA for the Bellrock OfTDA to ensure a consistent approach with the Bellrock WFDA.
269. The description of the Bellrock Offshore Transmission Infrastructure will be further refined as stakeholder engagement progresses, and the design continues to evolve.

#### 4.4.2 Human Health

270. The requirement to consider human health within the EIA process was made explicit in amendments to the Marine Works (Environmental Impact Assessment) Regulations 2007. 'Health', for the purposes of this document, follows the definition set by the World Health Organisation: "*a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity*" (World Health Organisation, 2020).
271. Whilst it is recognised that human health considerations are more prevalent for onshore works, this **Bellrock OfTDA Scoping Report** includes the following chapters which will consider impacts to human health as appropriate:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 11: Shipping and Navigation;**
  - **Chapter 12: Aviation and Radar;**
  - **Chapter 13: Marine Infrastructure and Other Users;**
  - **Chapter 15: Seascape, Landscape and Visual Impact;**

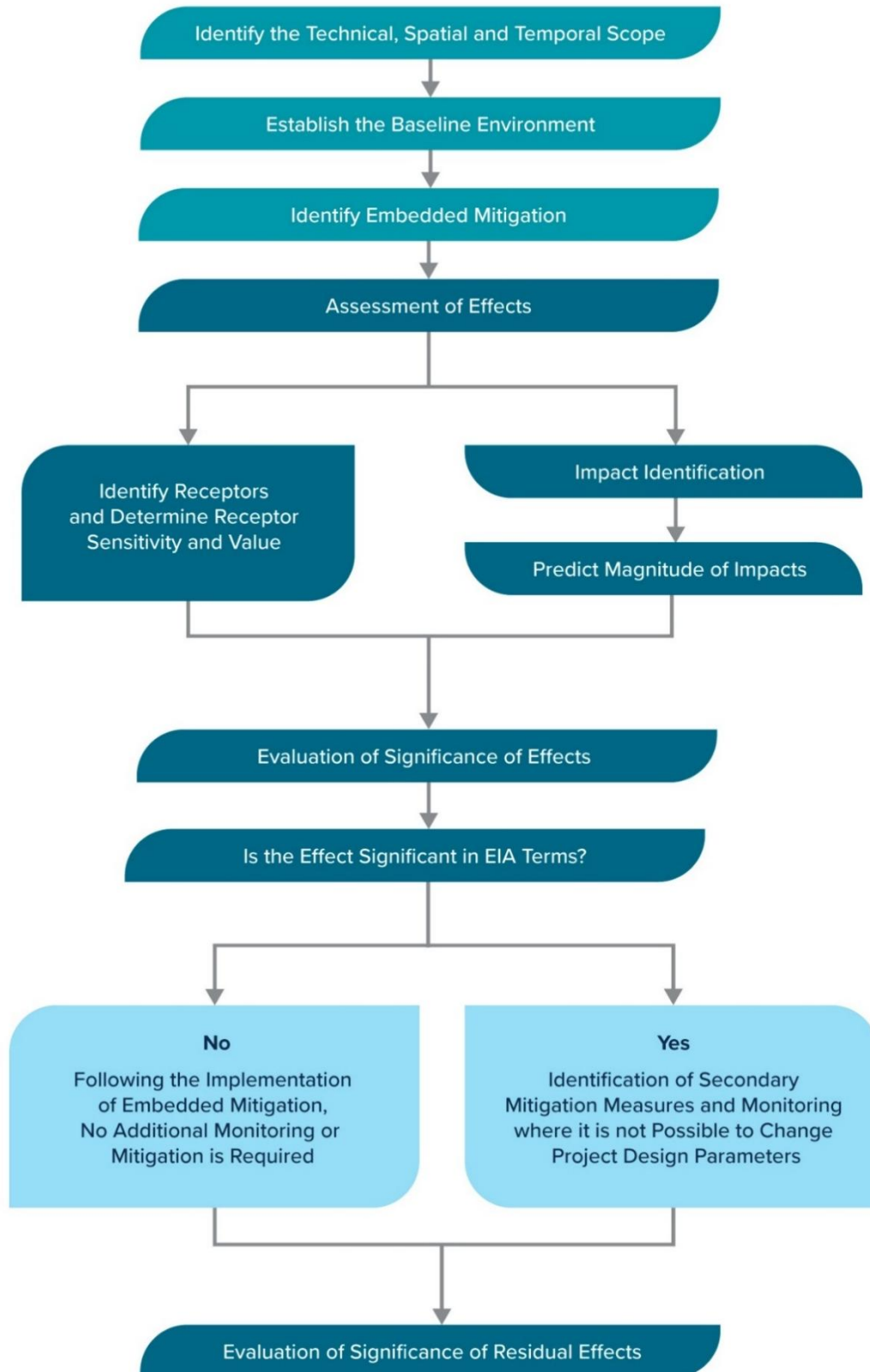
- **Chapter 16: Socioeconomics and Tourism;**
- **Chapter 17: Climate Change;**
- **Chapter 18: Offshore Air Quality;** and
- **Chapter 19: Major Accidents and Disasters.**

272. Consequently, a stand-alone human health chapter within the Bellrock OfTDA EIA Report is not proposed.

## 4.5 Environmental Impact Assessment Methodology

273. This section provides an overview of the proposed methodology approach for EIA, in line with the approach set out in **Plate 4.2**.

Plate 4.2: Overview of EIA Methodology



## 4.5.1 Identify the Technical, Spatial and Temporal Scope

### 4.5.1.1 Technical Scope

274. The technical scope covered by this **Bellrock OfTDA Scoping Report** is outlined in the respective chapters. Justification is provided for the individual approach and scoping of matters to be considered in the assessment for each environmental receptor. The technical scope also details the approach to baseline data collection and assessment methodologies and will detail any data gaps and limitations with the data collected to inform the baseline. **Chapter 20: Summary and Next Steps** provides a summary table of impacts and effects to be scoped in and out of the Bellrock OfTDA EIA Report.

### 4.5.1.2 Spatial Scope

275. The geographical context within which the Bellrock OfTDA is located is shown in **Figure 1.1** and **Figure 1.2 (Appendix A (Volume 1))**. The footprint of the Bellrock OfTDA overlaps with the entire Bellrock WFDA footprint. This is because the OfSS(s), interconnector cable(s), and sections of the offshore export cables, along with associated cable and scour protection, are located within the portion of the Bellrock OfTDA that overlaps with the Bellrock WFDA. As noted in **Section 1.4** in **Chapter 1: Introduction**, the Bellrock OfTDA will be further refined once the location of the landfall is confirmed. The spatial scope for each technical assessment will depend on the nature of the potential effects and the location of receptors that could be affected by the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure. The study area relevant to each environmental receptor is described in the respective technical chapter. The spatial scope of the technical assessments will therefore take account of:

- Relevant guidance;
- The physical area of the Bellrock OfTDA;
- The nature of the baseline environment; and
- The manner and extent to which environmental effects may occur within the Bellrock OfTDA or beyond its boundary.

276. The study area for any given receptor may need to be refined in consultation with relevant consultees to ensure they still adequately reflect the area of potential influence for likely significant environmental effects.

### 4.5.1.3 Temporal Scope

277. The temporal scope refers to the time periods over which impacts and effects may be experienced by sensitive receptors, and this will be defined further for each aspect in discussion with relevant consultees. The EIA will assess potential impacts and effects during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure.
278. While there is potential for impacts from the physical presence of operational infrastructure (i.e. OfSS(s), offshore reactive compensation station(s) and cable protection), during the construction phase of the Bellrock Offshore Transmission Infrastructure, these impacts will increase incrementally as the construction progresses, until the infrastructure is fully installed. It is proposed

that these impacts are therefore scoped out from further consideration in relation to the construction and decommissioning phases to avoid double counting of potential impacts, but they are included under the O&M phase of the assessment, as appropriate.

279. Environmental effects will be compared to the current environmental baseline and will also take into consideration the projected future baseline (i.e. the theoretical situation that would exist in the absence of the Bellrock Offshore Transmission Infrastructure) where possible (e.g. predictable changes such as climate change). Each technical chapter of the Bellrock OfTDA EIA Report will define the baseline (current and future where possible) against which the environmental effects of the Bellrock Offshore Transmission Infrastructure will be assessed. The baseline conditions which will be assessed for each receptor are outlined in the technical chapters of this **Bellrock OfTDA Scoping Report**.

#### 4.5.2 Establish the Baseline Environment

280. To assess the potential impacts and effects of the Bellrock Offshore Transmission Infrastructure, it is necessary to determine the environmental conditions that currently exist within the Bellrock OfTDA Scoping Boundary and in the wider study areas. These are known as the existing baseline conditions.
281. For each environmental receptor, the study area and approach which will be used to establish baseline conditions will vary depending on the receptor and is set out within its respective technical chapter. Baseline conditions will be determined using desk-based data searches and the results of site-specific surveys and investigations (where available), or a combination of these, as appropriate.
282. Relevant research from Scottish Marine Energy Research, or other relevant peer reviewed research will be considered within the Bellrock OfTDA EIA Report as necessary.

#### 4.5.3 Assessment of Effects

283. This section sets out the framework methodology for the assessment with each technical chapter providing details of how the methodology has been applied for that receptor. To provide a consistent framework and common set of tools and terminology, a matrix-based approach will be used to structure and present the judgements made. For each receptor considered in the EIA, the most relevant and latest guidance or best practice has been used and, therefore, definitions of sensitivity and magnitude are tailored to each receptor. These definitions are detailed fully in each technical chapter.
284. The impact assessment will consider the potential for effects during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. As required by the EIA Regulations, only effects that are likely to be significant require detailed assessment.
285. Impacts can be classified as follows:
- **Direct impacts:** occurring at the same time and place as the action or activity;



- **Indirect impacts:** experienced by a receptor that is removed (e.g. in space or time) from the direct impact (e.g. noise impacts upon fish which are a prey resource for fish or marine mammals);
- **Inter-relationships:** occurring between impacts (where different impacts interact to affect a single receptor, which may need to be brought together from assessments presented in separate chapters) and interactions between impacts (where impacts assessed in each chapter have the potential to interact with one another); and
- **Cumulative impacts:** these may occur as a result of the Bellrock OfTDA in conjunction with other existing or planned projects and plans within the study area for each receptor, including other offshore wind farms.

286. Mitigation and/or monitoring to manage impacts will then be considered where required and commitments made by the Applicant as appropriate. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the Bellrock OfTDA. Receptor specific study areas (see **Chapter 5 to Chapter 19 (Volume 1)**) will be updated in the Bellrock OfTDA EIA Report to reflect this refinement. Subsequent to receiving the Scoping Opinion any project refinements which are considered to potentially change the context of the Scoping Opinion (i.e. works outside the Bellrock OfTDA Scoping Boundary or un-scoped infrastructure or methodology) will be discussed with MD-LOT and highlighted in the Bellrock OfTDA EIA Report.

#### 4.5.3.1 Impact Identification

287. The **Bellrock OfTDA Scoping Report** distinguishes between the terms 'impact' and 'effect':

- **Impact:** is used to describe a change resulting from an activity via the Bellrock Offshore Transmission Infrastructure. Impacts are defined in terms of their magnitude (see **Section 4.5.3.3**); and
- **Effect:** is the consequence of an impact combining with a receptor. Effects are defined in terms of their significance (see **Section 4.5.3.4**).

288. Where appropriate to do so, the assessment will use the conceptual 'source-pathway-receptor' model. The model identifies potential impacts resulting from the proposed activities on the environment and sensitive receptors within it. This process provides an easy-to-follow assessment route between impact sources and potentially sensitive receptors ensuring a transparent impact assessment. The aspects of this model are defined as follows:

- **Source:** the origin of a potential impact (i.e. an activity such as piling and a resultant effect e.g. underwater noise resulting from OfSS(s) or offshore reactive compensation station(s) piling works);
- **Pathway:** the means by which the effect of the activity could impact a receptor (e.g. for the example above, disturbance/injury to nearby marine mammals); and
- **Receptor:** the element of the receiving environment that is impacted (this could either be a component of the physical, ecological or human environment, e.g. for the above example, species susceptible to noise impacts such as marine mammals).



289. Where a different approach has been adopted to reflect the specific assessment requirements of a particular receptor, this is described in the corresponding technical chapter in this **Bellrock OfTDA Scoping Report**.

#### 4.5.3.2 Determining Receptor Sensitivity and Value

290. The characterisation of the existing environment helps to determine the receptor sensitivity in order to assess the potential impacts upon it.
291. The ability of a receptor to adapt to change, tolerate, and/or recover from potential effects will be key in assessing its sensitivity to the effect under consideration. For ecological receptors, tolerance could relate to short term changes in the physical environment, whereas for human environment receptors, tolerance could relate to displacement effects (and therefore effects upon economics or safety). It also follows that the capacity to recover will be a key consideration in determining receptor sensitivity.
292. Example definitions of the different sensitivity levels for a generic receptor are given in **Table 4.3**.

**Table 4.3: Example Definition of Different Sensitivity Levels for a Generic Receptor**

| Sensitivity | Definition                                                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------|
| High        | Individual receptor has very limited or no capacity to avoid, adapt to, accommodate or recover from the anticipated impact. |
| Medium      | Individual receptor has limited capacity to avoid, adapt to, accommodate or recover from the anticipated impact.            |
| Low         | Individual receptor has some tolerance to accommodate, adapt to or recover from the anticipated impact.                     |
| Negligible  | Individual receptor is generally tolerant to and can accommodate or recover from the anticipated impact.                    |

293. For some assessments, the value of a receptor may also be an element to add to the assessment where relevant. Receptor value considers whether, for example, the receptor is rare, has protected or threatened status, importance at local, regional, national or international scale, and in the case of biological receptors whether the receptor has a key role in the ecosystem function.
294. Example definitions of the value levels for a generic receptor are given in **Table 4.4**.

**Table 4.4: Example Definitions of the Value Levels for a Generic Receptor**

| Value      | Definition                                                                               |
|------------|------------------------------------------------------------------------------------------|
| High       | Internationally/nationally important (e.g. internationally or nationally protected site) |
| Medium     | Regionally important (e.g. regionally protected site)                                    |
| Low        | Locally important/rare but with high potential for mitigation                            |
| Negligible | Not considered to be important (e.g. common or widespread)                               |

295. The overall receptor sensitivity is determined by considering a combination of value, adaptability, tolerance and recoverability. This is achieved through applying known research and information on the status and sensitivity of the feature under consideration coupled with professional judgement and experience.
296. The terms 'high value' and 'high sensitivity' are not necessarily linked within a particular impact, and it is important not to inflate impact significance specifically because a feature is valued. For example, a receptor could be of high value (e.g. an Annex I habitat) but have a low or negligible physical/ecological sensitivity to an impact. In this case, sensitivity should reflect the ecological robustness of the species and not necessarily default to its protected status.

#### 4.5.3.3 Predicting Magnitude of Impact

297. The magnitude of change affecting a receptor that would result from the Bellrock Offshore Transmission Infrastructure will be identified on a scale from minor alterations or change through to major changes or the total or substantial loss of the receptor. For certain environmental impacts, the magnitude of change would be related to guidance on levels of acceptability (for example, for air quality or noise) and is therefore based on numerical parameters. For other environmental impacts professional judgement will be used to determine the magnitude of change, using descriptive terminology. The relevant guidance for each receptor is discussed in the technical chapters of this **Bellrock OfTDA Scoping Report**.
298. The magnitude and probability of an impact occurring will be established through consideration of:
- Scale or spatial extent (small scale to large scale or a few individuals to most of the population);
  - Duration (short term to long term);
  - Likelihood of impact occurring;
  - Frequency; and
  - Nature of change relative to the baseline.
299. The categorisation of magnitude of impact will vary for specific pathways, receptors and technical assessments. Example definitions of the magnitude levels for a generic receptor are given in **Table 4.5**.

**Table 4.5: Example Definitions of the Magnitude Levels for a Generic Receptor**

| Value      | Definition                                                                                                                                                                                                                                                                       |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High       | Fundamental, permanent/irreversible changes, over the whole receptor, and/or fundamental alteration to key characteristics or features of the particular receptor's character or distinctiveness.                                                                                |
| Medium     | Considerable, permanent/irreversible changes, over the majority of the receptor, and/or discernible alteration to key characteristics or features of the particular receptor's character or distinctiveness.                                                                     |
| Low        | Discernible, temporary (throughout project duration) change, over a minority of the receptor, and/or limited but discernible alteration to key characteristics or features of the particular receptor's character or distinctiveness.                                            |
| Negligible | Discernible, temporary (for part of the project duration) change, or barely discernible change for any length of time, over a small area of the receptor, and/or slight alteration to key characteristics or features of the particular receptor's character or distinctiveness. |

#### 4.5.3.4 Evaluation of Significance of Effects

300. Once the technical chapters have defined the sensitivity of each receptor and the magnitude of potential impacts (based on expert judgement), the significance of effects matrix in **Table 4.6:** is applied. This matrix will determine the significance of the adverse and positive effects. All technical chapters will apply the significance of effects matrix, unless otherwise specified in the technical chapters.

**Table 4.6: Matrix for Evaluating the Significance of an Effect (Adverse or Beneficial)**

| Sensitivity | Magnitude |            |            |            |           |
|-------------|-----------|------------|------------|------------|-----------|
|             | High      | Medium     | Low        | Negligible | No Change |
| High        | Major     | Major      | Moderate   | Minor      | No effect |
| Medium      | Major     | Moderate   | Minor      | Negligible | No effect |
| Low         | Moderate  | Minor      | Minor      | Negligible | No effect |
| Negligible  | Minor     | Negligible | Negligible | Negligible | No effect |

301. In EIA terms, major and moderate adverse effects are generally considered to be significant, and as such, may require mitigation. Whilst minor effects are not significant in their own right, these may contribute to significant effects cumulatively or through interactions. Each technical chapter sets out receptor-specific guidance that will be used to assess the significance of effects. Definitions for each level of significance are presented in **Table 4.7.**

**Table 4.7: Definitions of Effect Significance**

| Effect Significance | Definition                                                                                                                                                     |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Major               | Very large or large change in receptor condition, both adverse or beneficial, which are likely to be important considerations at a regional or district level. |
| Moderate            | Intermediate change in receptor condition, which are likely to be important considerations at a local level.                                                   |
| Minor               | Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision-making process.                       |
| Negligible          | No discernible change in receptor condition.                                                                                                                   |
| No Effect           | No change in receptor condition; therefore, no effect.                                                                                                         |

#### 4.5.3.5 Identify Mitigation Measures and Monitoring

302. For each environmental topic, the EIA will reflect the mitigation hierarchy, whereby measures are identified to avoid, prevent, reduce or, where necessary, offset potential adverse effects (IEMA, 2024). In line with the approach advocated by IEMA, primary and tertiary mitigation are treated as embedded mitigation measures which are integral to the design, construction, O&M or decommissioning of the Bellrock Offshore Transmission Infrastructure.
303. A distinction between ‘potential effects’ and ‘residual effects’ will only be made where secondary mitigation is required to reduce the severity of an effect. In such cases, the assessment in the technical chapters of the Bellrock OfTDA EIA Report will present the significance prior to the application of secondary mitigation and the residual effect following its implementation. This approach will ensure a clear and proportionate EIA Report.
304. The three types of mitigation (noting only primary and tertiary have been applied within this **Bellrock OfTDA Scoping Report**) that will be applied within the Bellrock OfTDA EIA Report are defined below:
- **Primary mitigation:** Measures that are inherent components of the Bellrock Offshore Transmission Infrastructure and could include modifications to the location or design made during the pre-application phase (e.g. adoption of methods and equipment for seabed preparation which have been designed to minimise the potential for sediment suspension and dispersal);
  - **Secondary mitigation:** Measures that will require further activity to achieve the anticipated outcome. The effectiveness of these mitigation measures will be assessed within the Bellrock OfTDA EIA Report and appropriate mitigation will be secured by a consent or licence condition. For example, engaging with the local community and local authority once construction port(s) have been identified; and
  - **Tertiary mitigation:** Measures that would occur with or without input from the EIA, such as actions undertaken to meet other existing legislative requirements, or actions that are standard practices used to manage commonly occurring environmental effects. These

measures are treated as an inherent part of the Bellrock Onshore Transmission Infrastructure (e.g. development and adherence to management plans, such as a Construction Environmental Management Plan).

305. Primary and tertiary mitigation are considered to be ‘embedded’ mitigation. The assessment of the likely significant environmental effects under the pre-mitigation scenario incorporates this embedded mitigation when determining the magnitude of change.
306. Where mitigation relies on management or mitigation plans, sufficient information will be provided within the Bellrock OfTDA EIA Report to demonstrate how the measures would reduce the magnitude of impacts and enable the level of effect to be assessed. Monitoring requirements will be identified where appropriate in accordance with the EIA Regulations, particularly where significant adverse effects or uncertainty remain. Any proposed monitoring measures will be described within the relevant technical chapters and secured, where necessary, through consent conditions or approved plans. Monitoring measures will not, in themselves, be relied upon to reduce the magnitude of impacts or influence the assessment of effects unless linked to a defined mitigation or adaptive management measure.
307. Mitigation and monitoring measures will be recorded within the Bellrock OfTDA EIA Report through a **Mitigation and Monitoring Register (Appendix B (Volume 1))**, which will identify the measures proposed and the mechanisms through which they will be secured and implemented, where required. Opportunities will be provided for stakeholders to provide feedback on the proposed mitigation through the planned stakeholder engagement process.
308. A **Mitigation and Monitoring Register (Appendix B (Volume 1))** presents the preliminary embedded mitigation measures identified at the current stage of project development to inform this **Bellrock OfTDA Scoping Report**. Existing embedded mitigation measures may be refined as the design develops and additional embedded mitigation measures may also be developed as part of the iterative design process.
309. The following mitigation plans (at minimum) will be submitted alongside the Bellrock OfTDA Marine Licence Application, in line with Marine Directorate guidance (Marine Directorate, 2025):
- Fisheries Mitigation, Monitoring and Communication Plan;
  - Written Scheme of Investigation, which will include a Protocol for Archaeological Discoveries;
  - Marine Pollution Contingency Plan;
  - Invasive Non-Native Species Mitigation Plan;
  - Outline Vessel Management and Navigational Safety Plan;
  - Outline Lighting and Marking Plan;
  - Outline Environmental Management Plan; and
  - Outline Marine Mammal Mitigation Protocol.

310. In addition, the following mitigation and monitoring plans are proposed (**Mitigation and Monitoring Register (Appendix B (Volume 1))**) as embedded mitigation, and will be developed post-consent as appropriate:

- Construction Method Statement;
- Construction Programme;
- Decommissioning Programme;
- Development Specification and Layout Plan;
- Emergency Response Cooperation Plan;
- Cable Plan;
- Operation and Maintenance Plan;
- Project Environmental Monitoring Plan;
- Piling Noise Mitigation Plan; and
- Seabed Obstruction Mitigation Plan.

#### **4.5.3.6 Assessment of Residual Effects**

311. Following the application of any necessary secondary mitigation measures to reduce the severity of potential negative effects, the significance of residual effects will be assessed for each potential impact following the guidance outlined in **Section 4.5.3.4**.

### **4.5.4 Transboundary Effects**

312. Transboundary effects arise when impacts from a development within one European Economic Area (EEA) state's<sup>20</sup> territory significantly affects the environment or interests of another EEA state(s). The EIA Directive, and thus the relevant EIA Regulations, requires the assessment of transboundary effects.

313. The United Nations Economic Commission for Europe Convention on EIA in a Transboundary Context (the 'Espoo Convention') presents the need to consider transboundary effects and requires assessments to be extended across borders between Parties of the Convention when a planned activity may cause significant adverse transboundary effects. The Espoo Convention has been transposed into domestic law by way of Regulation 18 of the Marine Works (Environmental Impact Assessment) Regulations 2007. These Regulations set out the processes for consultation and notification. If a project is considered to cause significant transboundary effects, the EIA Regulations require the Scottish Ministers to engage with the affected EEA State and invite them to participate in consultation.

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<sup>20</sup> Following the exit of the UK from the European Union (EU) in December 2020, the UK is no longer an EEA state. However, for the purposes of assessing potential transboundary effects, the approach outlined above will be followed for the Bellrock Offshore Transmission Infrastructure.

314. The assessment of potential transboundary effects will consider the following elements:
- Characteristics of the Bellrock OfTDA;
  - Location of the Bellrock OfTDA, including proximity to relevant EEA states;
  - The Bellrock Offshore Transmission Infrastructure;
  - Environmental context/importance, for example any EEA protected areas which may be affected by the Bellrock Offshore Transmission Infrastructure;
  - Potential pathways of effect;
  - The extent of potential effects;
  - The scale of the potential effect, to consider magnitude, probability, duration, frequency and recoverability; and
  - Cumulative effects.
315. Consideration of transboundary effects will follow the standard approach to EIA with regards to sensitivity, magnitude, and significance, as presented in each technical chapter.

#### **4.5.5 Inter-related Effects**

316. Inter-related effects refer to the inter-relationships between EIA topics and interactions between impacts which may result in different or greater environmental effects than when considered in isolation. This provides a holistic understanding of potential impacts holistically at a wider ecosystem scale.
317. The inter-relationships between different EIA topics may result in greater in-combination environmental effects. The Bellrock OfTDA EIA Report will consider the potential for:
- Inter-relationships between impacts from different technical chapters, i.e. where different impacts from multiple chapters affect a single receptor. Offshore assessments are largely receptor based (e.g. marine mammals, fish, birds, marine users etc). There is the potential for an impact on a receptor to have secondary effects, spatially and temporally, on another receptor considered in another technical chapter and these inter-relationships will be identified and assessed within the Bellrock OfTDA EIA Report. For example, impacts on fish can have wider ecosystem implications, as this can lead to changes in prey resource for marine mammals and birds, but could also affect commercial fisheries through the disturbance of commercially important fish resources leading to subsequent displacement or disruption of fishing activity. As such inter-relationships will be covered as an integral part of the assessment; and
  - Interactions between impacts, i.e. where impacts identified and assessed for each technical chapter have the potential to interact with each other on the same receptor, which could give rise to synergistic effects as a result. Where impacts assessed in each technical chapter have the potential to interact with one another, these impacts will be assessed relative to each development phase (a 'phase assessment' i.e. construction, O&M or decommissioning) to ascertain where, for example, multiple construction impacts affecting the same receptor could

increase the magnitude of effect upon that receptor. Following this, a 'lifetime assessment' will be undertaken where necessary which will consider the potential for impacts to affect receptors across all development phases. For example, permanent or temporary habitat loss, increased suspended sediment concentrations and subsequent seabed deposition during construction activities would all give rise to interacting effects upon seabed habitats. As such interactions between impacts will be considered as an integral part of the assessment.

318. It should be noted that the inter-related effects assessment only considers the effects from the Bellrock OfTDA itself, with effects from other projects, including the Wind Farm Infrastructure and Onshore Transmission Infrastructure, considered within the Bellrock OfTDA Whole Project Assessment (see **Section 4.6**) and Cumulative Effects Assessment (see **Section 4.7**).

## 4.6 Approach to the Bellrock OfTDA Whole Project Assessment

319. The whole Bellrock Project encompasses infrastructure and associated activities from the Bellrock WFDA to the proposed grid connection at the Hurlie substation via the Bellrock OfTDA and OnTDA. As discussed in **Chapter 1: Introduction**, the Bellrock Project is being considered as three separate applications with associated EIAs<sup>21</sup> for:

- The Bellrock WFDA for the Wind Farm Infrastructure;
- The Bellrock OfTDA for the Offshore Transmission Infrastructure; and
- The Bellrock OnTDA for the Onshore Transmission Infrastructure.

320. To undertake the Bellrock OfTDA Whole Project Assessment, each technical chapter of the Bellrock OfTDA EIA Report will first assess the likely significant effects arising from the Bellrock Offshore Transmission Infrastructure alone. All impacts identified in the Bellrock OfTDA-alone assessment with a level of effect of negligible or greater will then be taken forward to the Bellrock OfTDA Whole Project Assessment. Within the Bellrock OfTDA Whole Project Assessment, consideration will be given to whether there are interactions between the Bellrock Offshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure and/or the Bellrock Onshore Transmission Infrastructure that have the potential to alter the magnitude of impacts or level of effects identified in the Bellrock OfTDA-alone assessment. Where no relevant interactions are identified, the conclusions of the Bellrock OfTDA-alone assessment remain unchanged. Assessment findings from the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited,

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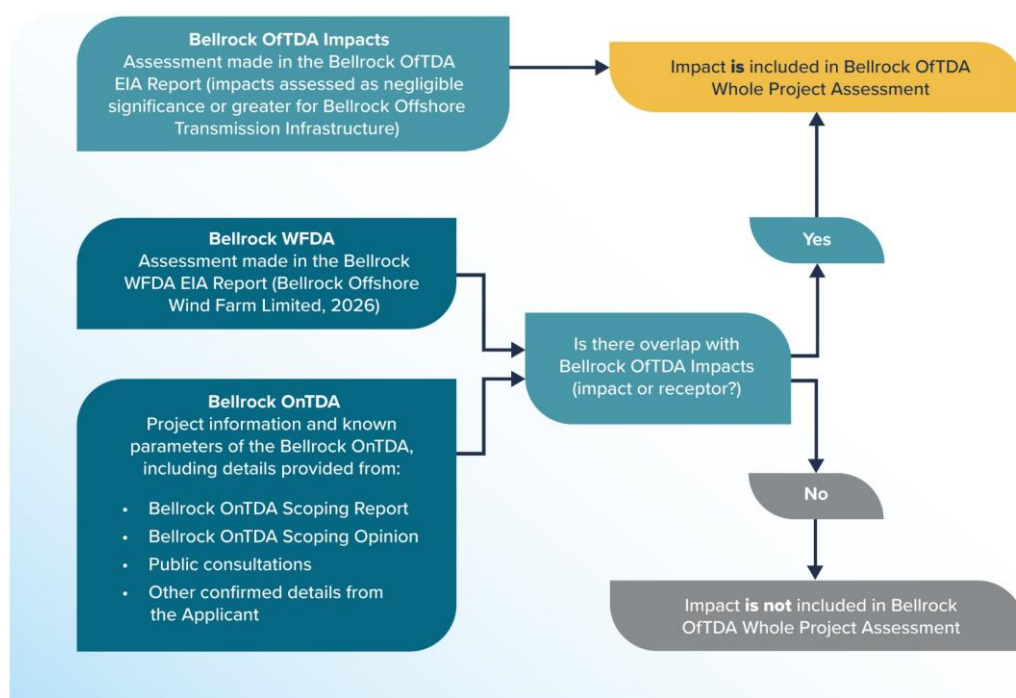
<sup>21</sup> At the time the Scoping Request for the Bellrock WFDA was submitted (March 2024), the Bellrock Project's grid connection solution was a coordinated connection to an offshore substation. However, in April 2025 the National Energy System Operator (NESO) imposed a change to the Bellrock Project's grid connection, with this revised to a radial onshore connection to the Hurlie substation in Fetteresso Forest, Aberdeenshire. As a result, the Applicant needed to undertake site selection processes for the Bellrock OfTDA and OnTDA and consent for the three development areas is being sought separately.



2026), together with available project information and known parameters for the Bellrock OnTDA, will be used to inform the Bellrock OfTDA Whole Project Assessment where relevant to the impact pathway under consideration (**see Plate 4.3**).

321. This approach is consistent with the relevant EIA Regulations, which make express provision for a multi-stage consent process, including in circumstances where the likely significant effects of a project are not fully identifiable at the point at which an application for consent is determined. This multi-stage consent process allows for the potential effects of a project with different component parts to be assessed as further information and detail becomes available.

**Plate 4.3: Bellrock Offshore Transmission Development Area Whole Project Assessment Flow Diagram**



322. Consent for the Bellrock Wind Farm Infrastructure has already been sought through a s.36 Consent and Marine Licence Application (applications submitted in April 2026, Bellrock Offshore Wind Farm, 2026). Planning Permission in Principle will be sought for the Bellrock Onshore Transmission Infrastructure under the Town and Country Planning (Scotland) Act 1997, and a Scoping Report for the Bellrock OnTDA is due for submission to Aberdeenshire Council in quarter 4 2026.

323. The Bellrock OfTDA Whole Project Assessment will be undertaken using:

- The results of the Bellrock OfTDA EIA Report, specifically the Bellrock OfTDA-alone assessments;
- The results of the **Bellrock WFDA EIA Report** (application submitted April 2026, Bellrock Offshore Wind Farm Limited, 2026); and

- Project information relating to the Bellrock OnTDA available six months prior to submission of the Bellrock OfTDA EIA Report, for example the Bellrock OnTDA Scoping Report, the Bellrock OnTDA Scoping Opinion, public exhibitions and other confirmed details from the Applicant.

324. This approach will ensure that in relation to impacts arising from the Bellrock Offshore Transmission Infrastructure, the relevant interactions with the Bellrock Wind Farm Infrastructure and the Bellrock Onshore Transmission Infrastructure are considered.
325. The scope of the Bellrock Project does not include consideration of port activities (e.g. substation assembly). These will be subject to separate consenting process(es) where required. Where such activities require separate planning permission or Marine Licence(s), they will be accompanied by any environmental assessment or appraisal required under the relevant legislation. Accordingly, these activities will be considered within the CEA (see **Section 4.7**).

#### 4.6.1 Bellrock Project Assessment for Greenhouse Gases

326. The greenhouse gas assessment differs from the Bellrock OfTDA Whole Project Assessment approach described in **Section 4.6**. For this topic, a Bellrock Project assessment is undertaken, encompassing the whole Bellrock Project (i.e. the WFDA, OfTDA, and OnTDA combined). Further details are provided in **Chapter 17: Climate Change**.
327. During preparation of the **Bellrock WFDA EIA Report**, it was possible to identify the likely significant effects of the Bellrock Project as a whole for the greenhouse gas assessment. Accordingly, a Bellrock Project whole project assessment was undertaken for this topic. This Bellrock Project whole project assessment will be updated in the Bellrock OfTDA and OnTDA EIA Reports to reflect refinements to the PDEs for each Development Area.
328. For all other technical topics, the **Bellrock WFDA EIA Report** considered the relationship and potential interactions between the Bellrock Wind Farm Infrastructure and the Bellrock Offshore Transmission Infrastructure and Onshore Transmission Infrastructure. As the landfall location and offshore export cable corridor were still being defined in the site selection process, these assessments were undertaken using a PDE and worst-case parameters.

## 4.7 Approach to Cumulative Effects Assessment

329. Schedule 3 of the Marine Works (Environmental Impact Assessment) Regulations 2007 and Schedule 4 of the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 require that cumulative effects of the development should be described in the Bellrock OfTDA EIA Report. Planning Circular 1/2017 (Scottish Government, 2017) and PAN 1/2013 (Scottish Government, 2013) also set out this requirement. There is currently no specific Scottish guidance on the methodological framework for assessing cumulative effects in general. PAN 1/2013 acknowledges that:

*“assessment methods for cumulative impacts and interactions vary” and that it is a “matter of professional judgement to ensure the relevant projects and activities – and their environmental*

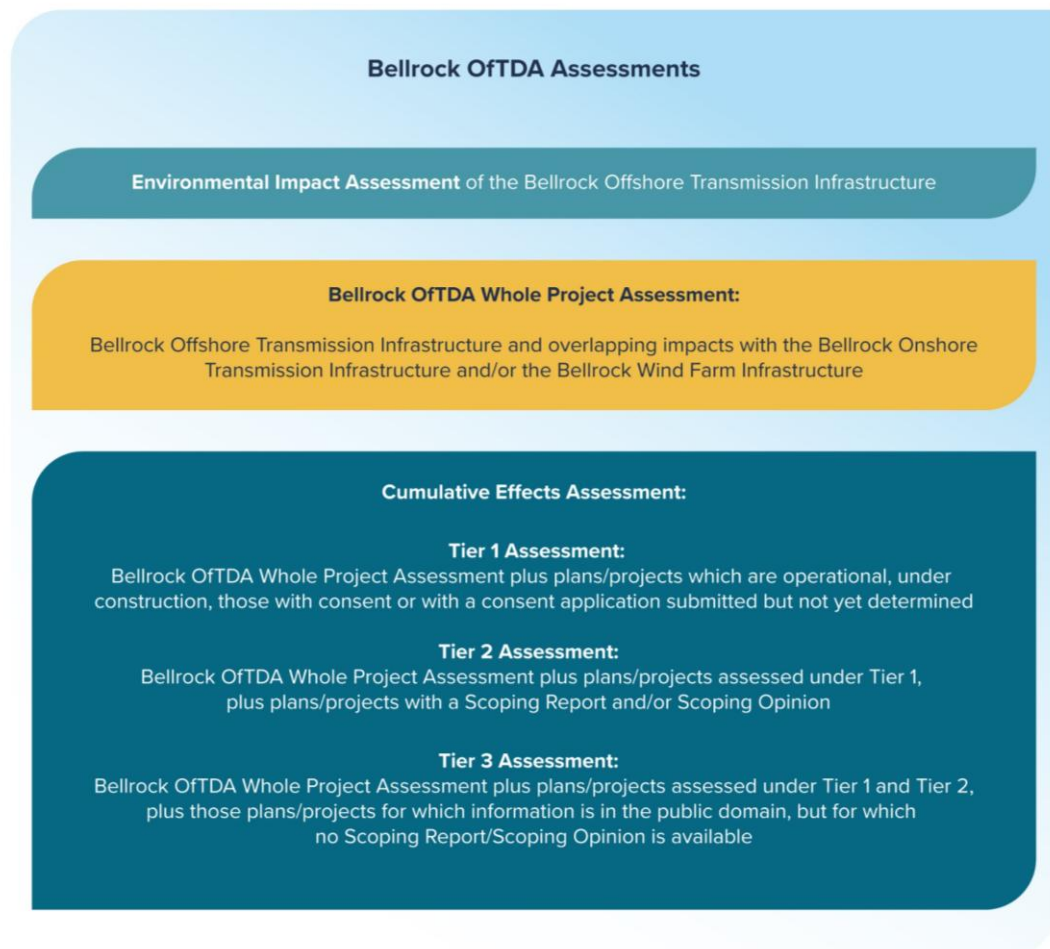
*effects – are identified, taking into account the circumstances of the individual proposal and its location”.*

330. The CEA is essential to identify other reasonably foreseeable plans, projects<sup>22</sup> or activities with which the Bellrock Offshore Transmission Infrastructure may interact, resulting in cumulative effects. Cumulative effects may arise from all phases (construction, O&M, and decommissioning) of the Bellrock Offshore Transmission Infrastructure.
331. The CEA will consider impacts identified from the Bellrock OfTDA Whole Project Assessment, as described in **Section 4.6** (see **Plate 4.4**). These impacts will be considered alongside impacts arising from other reasonably foreseeable plans, projects, and activities to identify where cumulative effects may occur. Following a screening exercise (**Section 4.7.1**), the CEA will assess the potential for cumulative effects on the same receptor arising from the Bellrock Offshore Transmission Infrastructure together with other projects, plans, and activities.

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<sup>22</sup> In November 2025 the CampionWind offshore wind farm Option to Lease Agreement was relinquished, and therefore the Applicant does not consider it reasonably foreseeable for inclusion in the CEA.

**Plate 4.4: Overview of the Bellrock OfTDA Assessments**



332. The CEA for the Bellrock OfTDA will be undertaken in accordance with the relevant guidance set out in **Section 4.2**, specifically the Planning Inspectorate guidance (2024)<sup>23</sup>, and will be updated with relevant information from the Cumulative Effects Framework (relevant only to marine mammals and ornithology) when this is made publicly available. The CEA will be considered in two stages:
- Stage 1: Cumulative Effects Screening (**Section 4.7.1**); and
  - Stage 2: Cumulative Effects Assessment (**Section 4.7.2**).

### 4.7.1 Stage 1: Cumulative Effects Screening

333. In accordance with the above guidance documents, other plans or projects that are deemed likely to go ahead or are going ahead, and for which sufficient information is available, will be taken forward for cumulative effects screening. For the purposes of the CEA, the criteria of other offshore wind and non-wind plans or projects that are proposed for consideration include:
- Already constructed;
  - Under construction;
  - Permitted application(s), but not yet implemented;
  - Submitted application(s) not yet determined; and
  - Plans and projects which are 'reasonably foreseeable' including:
    - Projects in Scottish waters;
    - Projects in English waters, or other non-UK parts of the North Sea if considered to be relevant, have connectivity, or the potential of a cumulative impact; and
    - Any proposed project that has submitted a Scoping Report up to six months<sup>24</sup> prior to the Bellrock OfTDA Marine Licence Application date.
334. The initial 'long list' of plans or projects will be developed based on the above criteria, and will be screened for each potential impact-receptor pathway using the following process:
- **Conceptual overlap:** an impact-receptor pathway (in EIA terms) describes the mechanism by which an impact which has the potential to directly or indirectly affect the receptor(s) in question;

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<sup>23</sup> This guidance is considered most robust and appropriate for the Bellrock OfTDA, in the absence of the Cumulative Effects Framework. Whilst this advice relates to nationally significant infrastructure projects in England and Wales, it nevertheless provides useful guidance on assessing cumulative effects for any large-scale project.

<sup>24</sup> Six months will be used as the cut off period, however updated information from other plans and projects within the six-month cut off may be considered by the Applicant, depending on programme.

- **Physical overlap:** ability for impacts identified from the Bellrock OfTDA Whole Project Assessment to overlap with those from other plans or projects on a receptor basis. An overlap of the physical extents of impacts arising from the two (or more) projects/plans must be established for a cumulative effect may occur. There are exceptions to this for certain mobile receptors that are potentially subject to impacts from multiple plans or projects; and
- **Temporal overlap:** for a cumulative effect to occur from two or more plans or projects, a temporal overlap of impacts arising from each must be established. Some impacts are active only during certain phases of development (e.g. piling noise during construction). However, the absence of a strict overlap may not necessarily mean there is no potential for cumulative effects, as receptors may become further affected by additional, non-temporally overlapping projects.

335. The cumulative impact screening stage will be undertaken by experienced specialists, using current guidance and best practice. After review of the long list, the remaining projects or plans are taken forward to the assessment stage. Ongoing consultation with stakeholders and the Scottish Ministers via MD-LOT will inform this process.

## 4.7.2 Stage 2: Cumulative Effects Assessment

336. At the assessment stage, information will be gathered on plans or projects taken forward from the screening stage. Where the likely significant effects (as defined by the EIA Regulations) identified from the Bellrock OfTDA Whole Project Assessment are predicted to be highly localised, these will not be considered within the Bellrock OfTDA CEA, as it is considered that there would be no potential for cumulative impacts with other plans or projects.

337. A tiered approach will be used when undertaking Stage 2 of the CEA of the Bellrock Offshore Transmission Infrastructure, which provides a framework for placing relative weight upon each plan or project based upon its current stage of maturity and certainty in the design or effects. All other relevant plans or projects that are in the public domain six months prior to submission of the Bellrock OfTDA Application will be considered in the CEA, in line with the tier system. For impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 4.6**), other projects and plans will be assessed as follows:

- **Tier 1 assessment:** Bellrock OfTDA Whole Project Assessment plus plans/projects which are operational, under construction, those with consent or with a consent application submitted but not yet determined;
- **Tier 2 assessment:** Bellrock OfTDA Whole Project Assessment plus plans/projects assessed under Tier 1, plus plans/projects with a Scoping Report and/or Scoping Opinion; and
- **Tier 3 assessment:** Bellrock OfTDA Whole Project Assessment plus plans/projects assessed under Tier 1 and Tier 2, plus those plans/projects for which information is in the public domain, but for which no Scoping Report/Scoping Opinion is available.

338. The CEA will follow the methodology described in **Section 4.5**, where possible, for consistency throughout the Bellrock OfTDA EIA. Potential cumulative environmental effects will be considered further in the Bellrock OfTDA EIA Report.
339. It is expected that the following activity types will be considered in the Bellrock OfTDA CEA based on maximum Zones of Influence (Zols) identified from the relevant technical assessments and agreed with stakeholders, as detailed within the Bellrock OfTDA EIA Report:
- Marine disposal and dredging sites;
  - Energy projects (including offshore wind, wave, and tidal projects, National Electricity Transmission Systems reinforcement works, Innovation and Targeted Oil and Gas projects, Carbon Capture and Storage, Underground Coal Gasification and wet storage projects);
  - Oil and gas infrastructure;
  - Cables and pipelines;
  - Ports and harbours; and
  - Military, aviation and radar.

## 4.8 Related Environmental Assessments

### 4.8.1 Habitats Regulations Appraisal

340. HRA is a precautionary, rigorous and legally binding procedure to protect Scotland's European sites (including Special Areas of Conservation and Special Protection Areas, which form part of the UK's National Site Network). The HRA considers the potential for likely significant effects arising from a plan or project that could affect the integrity of the national site network and their associated qualifying features. A HRA is required under The Conservation (Natural Habitats, &c.) Regulations 1994 and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (together referred to herein as the 'Habitats Regulations'), and may comprise up to nine stages (NatureScot, 2026). Full details of the HRA process and the outcome of the HRA Screening process are provided in the **Bellrock OfTDA HRA Screening Report (Volume 2)**.

### 4.8.2 Marine Protected Area Assessment

341. As set out in **Chapter 2: Legislative and Policy Context**, MPAs in Scotland are designated under the Marine (Scotland) Act 2010 within 12 nm and under the Marine and Coastal Access Act 2009 in offshore waters between 12 nm and 200 nm. MPAs can be designated for nature conservation, for research and demonstration, or to protect heritage areas and historic sites like shipwrecks. An MPA screening assessment for the Bellrock Offshore Transmission Infrastructure is presented in the **Bellrock OfTDA MPA Screening Report (Volume 3)**.
342. The **Bellrock OfTDA MPA Screening Report (Volume 3)** provides full details of the process and assesses the potential for impacts on MPAs, informed by engagement with MD-LOT as the Public



Authority on behalf of the Scottish Ministers, and NatureScot, and any other relevant information deemed appropriate.

### 4.8.3 European Protected Species Risk Assessments

343. As described in **Chapter 2: Legislative and Policy Context**, under the Habitats Regulations, it is unlawful to:

- Deliberately capture, injure, or kill a European Protected Species (EPS);
- Deliberately disturb an EPS; and
- Damage or destroy a breeding site or resting place of an EPS.

344. It may be lawful to carry out certain activities which are likely to cause disturbance or injury to EPS, if an EPS licence is obtained. EPS licences for licensable activities (e.g. geophysical surveys) will be granted by MD-LOT on behalf of the Scottish Ministers, subject to three tests being met:

- **Test 1:** The reason for the licence must relate to one of the purposes specified in Conservation of Offshore Marine Habitats and Species Regulations 2017 (for activities within 12 nm – 200 nm);
- **Test 2:** There is no satisfactory alternative to undertaking the licensable activity; and
- **Test 3:** the proposed licensable activity must not be detrimental to maintaining the species at 'favourable conservation status'.

345. The Applicant will apply for EPS licences for surveys and activities associated with the Bellrock Offshore Transmission Infrastructure, as appropriate, should these be required in the future.

## 4.9 Structure and Content of the Environmental Impact Assessment Report

346. As outlined in **Section 1.5**, consent will be sought for the Bellrock Offshore Transmission Infrastructure. The Bellrock OfTDA Marine Licence Application will be accompanied by the Bellrock OfTDA EIA Report, which will present an assessment of likely significant effects on the environment.

347. The Bellrock OfTDA EIA Report will be submitted in a series of volumes as described below:

- **Volume 1: EIA Report Non-technical Summary** – The consent application will be accompanied by a Non-technical Summary, presenting the key findings of the EIA in a clear and concise format;
- **Volume 2: EIA Report Chapters** – A series of documents presenting the introductory chapters and the impact assessment technical chapters of the Bellrock OfTDA. The impact



assessment chapters will be based on the maximum design envelope and therefore the worst-case scenario for each technical receptor.

- Each impact assessment chapter will present the assessment of the Bellrock Offshore Transmission Infrastructure;

Each impact assessment chapter, if relevant, will present the Bellrock OfTDA Whole Project Assessment for the impacts assessed as negligible or greater within the Bellrock OfTDA-alone assessment; and

- Each impact assessment chapter, if relevant, will present the CEA considering the impacts assessed as negligible or higher within the Bellrock OfTDA Whole Project Assessment cumulatively with other relevant plans, projects, and activities (as set out in **Section 4.6**).
- **Volume 3: EIA Report Figures** – A series of documents presenting the figures supporting the Bellrock OfTDA EIA;
- **Volume 4: EIA Report Appendices** – A single document, presenting technical appendices supporting the Bellrock OfTDA EIA;
- **Volume 5: Management Plans** – Multiple documents of full and outline plans to support the Bellrock OfTDA Marine Licence Application;
- **Volume 6: Shadow Habitats Regulations Appraisal** – A single Report to Inform Appropriate Assessment informing the second stage of the HRA for the Bellrock OfTDA;
- **Volume 7: Shadow Marine Protected Area Assessment** – A single document informing the MPA for the Bellrock OfTDA; and
- **Supporting Information** – Including Marine Licence Application Form, Bellrock OfTDA Planning Statement and other documentation to support the Bellrock OfTDA Marine Licence Application.

## 4.10 Scoping Questions to Consultees

348. The following questions are posed to consultees to help frame and focus their response to the approach to scoping and EIA for the Bellrock OfTDA, which will in turn inform the EIA:

- Do you agree with the proposed methodology for identifying and assessing significant effects?
- Do you agree that a stand-alone human health chapter is not required within the EIA?
- Do you agree with the definition of Bellrock OfTDA Whole Project for the Bellrock Project, provided in **Section 4.6**?
- Do you agree with the approach to assess the Bellrock Project as a whole, presented in **Section 4.6**?
- Do you agree that the proposed methodology for assessing cumulative impacts is appropriate for identifying significant effects?
- The Applicant proposes to have 6 months cut off for any projects/plans to be considered quantitatively in the CEA. Do you agree that this is suitable?
- Do you agree with the tiered approach for the other plans or projects to be assessed in the CEA?
- In the absence of the CEF, do you agree with the guidance proposed to be followed for CEA?
- Does MD-LOT agree that CampionWind project should no longer be included in the CEA?
- Do you agree with the proposed approach for HRA and MPA Assessment?
- Do you agree with the proposed mitigation and monitoring plans set out in **Section 4.5.3.5**?
- Do you agree that the Bellrock WFDA plans can be updated and/or expanded to incorporate the Offshore Transmission Infrastructure in support of the Bellrock OfTDA Application?
- Do you have any other matters or information sources that they wish to present?

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# 5 Marine Geology, Oceanography, and Physical Processes

## 5.1 Introduction

349. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on marine geology, oceanography, and physical processes.
350. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4** in **Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
351. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
352. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

353. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
354. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on marine geology, oceanography, and physical processes within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
355. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 6: Intertidal and Benthic Ecology;**
  - **Chapter 7: Fish and Shellfish Ecology;**
  - **Chapter 8: Marine Mammals;**
  - **Chapter 13: Marine Infrastructure and Other Users;** and
  - **Chapter 14: Marine Archaeology and Cultural Heritage.**
356. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 5.2 Legislation, Policy and Guidance

357. **Table 5.1** describes the relevant policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching policy and legislation relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 5.1: Summary of Relevant Legislation, Policy and Guidance for Marine Geology, Oceanography and Physical Processes**

| Relevant Legislation, Policy and Guidance                                               | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Bathing Waters Directive (2006/7/EC) and the Bathing Waters (Scotland) Regulations 2008 | Bathing waters in Scotland are governed by The Bathing Waters (Scotland) Regulations 2008, which mandate the monitoring, classification, and management of designated sites to protect public health. Classifications describe the general water quality condition for each bathing water based on four years of monitoring data. They are calculated at the end of one season and apply during the following season. Parameters monitored are focussed on bacteriological parameters. |

| Relevant Legislation, Policy and Guidance                                                                                                                                       | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water Framework Directive (WFD) (2000/60/EC)                                                                                                                                    | <p>The WFD is implemented through the Water Environment and Water Services (Scotland) Act 2003 and aims to protect and improve the water environment (rivers, lochs, coastal waters, groundwater). The Scottish Environment Protection Agency (SEPA) manages the implementation of this directive via River Basin Management Plans (RBMPs). A classification system is applied to management units called water bodies, with a classification produced for each body. The classification system aligns with European Union (EU) and United Kingdom (UK) guidance and is underpinned by a range of biological quality elements, supported by measurements of chemistry, hydrology (changes to water levels and water flows) morphology (changes to the beds, banks and shores of water bodies) and assessment of invasive non-native species. At the coast, water bodies are defined out to three nautical miles.</p> <p>The WFD requires Member States (including the UK when it was part of the European Union) to identify and register certain water-dependent sites as “Protected Areas”. These areas are stretches of surface water or groundwater that require special protection under EU legislation, or are particularly sensitive due to ecological, human health, or economic importance. These include bathing waters designed under the Bathing Waters Directive (2006/7/EC). For Protected Areas, the WFD sets a higher obligation, not just requiring good status, but compliance with all relevant standards and objectives from the underlying legislation.</p> |
| International Convention for Prevention of Marine Pollution by Ships (MARPOL)                                                                                                   | <p>MARPOL is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years. The Convention covers all the technical aspects of pollution from ships, except the disposal of waste into the sea by dumping, and applies to ships of all types, although it does not apply to pollution arising out of the exploration and exploitation of seabed mineral resources.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Policy</b>                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Scotland’s National Marine Plan (Scottish Government, 2015) details strategic policies for the sustainable development of Scotland’s marine resources out to 200 nautical miles | <p>Policy GEN 8 Coastal Process and Flooding states:<br/><i>“Developments and activities in the marine environment should be resilient to coastal change and flooding and not have unacceptable adverse impact on coastal processes or contribute to coastal flooding.”</i></p> <p>Paragraph 4.36 states: <i>“Marine planners and decision makers should also be satisfied that activities and developments will be resilient to risks from coastal change and flooding over their lifetime and will not have an unacceptable impact on coastal change. They should seek to ensure that any geomorphological changes that an activity or development bring about in coastal processes, including sediment movement and wave patterns, are minimised, and mitigated, bearing in mind the potential impact on commercial interests such as fisheries and conservation of the natural environment and key coastal heritage sites. Developments which may affect areas at high risk and increase the probability of coastal change should not be permitted unless the impacts upon the area can be managed effectively.”</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                                                                     | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                               | <p>Policy GEN 12 Water Quality and Resource states: <i>“Developments and activities should not result in a deterioration of the quality of waters to which the Water Framework Directive (WFD), Marine Strategy Framework Directive or other related Directives apply”.</i></p> <p>Paragraph 4.67 states: <i>“The Marine Strategy Framework Directive introduces requirements for targets on contamination and eutrophication for marine waters out to 200 nautical mile.”</i></p> <p>When published, Scotland’s National Marine Plan 2 will be considered at the post-consent stage, as part of the discharge of relevant consent and licence conditions and the development and approval of post-consent plans and programmes. It is assumed that when published, Scotland’s National Marine Plan 2 will supersede the existing National Marine Plan.</p> <p>Consultation on Scotland’s National Marine Plan 2 ran from 5 November 2024 to 7 February 2025 and a consultation analysis report has been produced by the Scottish Government (2025).</p>                                                                                                                                              |
| <p>The Marine Policy Statement (Her/his Majesty’s Government, 2011) provides the high-level approach to marine planning and general principles for decision making that contribute to achieving this vision. It also sets out the framework for environmental, social, and economic factors that need to be considered in marine planning</p> | <p>The key reference is Section 2.6.8.6 which states: <i>“Marine plan authorities should not consider development which may affect areas at high risk and probability of coastal change unless the impacts upon it can be managed. Marine plan authorities should seek to minimise and mitigate any geomorphological changes that an activity or development will have on coastal processes, including sediment movement.”</i></p> <p>For water quality, the key reference is Section 2.6.4.1 which states: <i>“Developments and other activities at the coast and at sea can have adverse effects on transitional waters, coastal waters and marine waters. During the construction, operation and decommissioning phases of developments, there can be increased demand for water, discharges to water and adverse ecological effects resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants into the water environment and the likelihood of transmission of invasive non-native species, for example through construction equipment, and their impacts on ecological water quality need to be considered.”</i></p> |
| <b>Guidance</b>                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Marine Scotland (2017) Pre-disposal Sampling Guidance Version 2 – November 2017                                                                                                                                                                                                                                                               | Sampling and analysis relating to sea disposal of dredged material – the guidance includes Action Levels for contaminants to assist in assessing risk to the water environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cefas (2011)                                                                                                                                                                                                                                                                                                                                  | Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Lambkin et al. (2009)                                                                                                                                                                                                                                                                                                                         | Coastal Process Modelling for Offshore Windfarm EIA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Department for Business, Enterprise and Regulatory Reform (2008)                                                                                                                                                                                                                                                                              | Review of Cabling Techniques and Environmental Effects applicable to the Offshore Windfarm Industry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Centre for Environment Fisheries and Aquaculture Science (Cefas) (2004)                                                                                                                                                                                                                                                                       | Offshore Wind Farms: Guidance Note for EIA in respect of Food and Environmental Protection Act and Coast Protection Act requirements: Version 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Relevant Legislation, Policy and Guidance                                                                                                      | Relevance to the Assessment                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SEPA Standing Advice for the Department for Business, Energy, and Industrial Strategy and Marine Scotland on Marine Consultations (SEPA, 2022) | Provides SEPA's standing advice to the Department for Business, Energy and Industrial Strategy and to the Marine Directorate (previously Marine Scotland) on how SEPA wishes to engage with marine consenting processes. It also outlines SEPA's position on different marine activities. |

## 5.3 Consultation

358. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital (MD-SEDD), Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to marine geology, oceanography and physical processes for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to marine geology, oceanography and physical processes are provided in **Table 5.2**. The input from this consultation process builds on existing considerations developed from previous consultation opportunities, undertaken as part of Chapter 6: Marine Geology, Oceanography and Physical Processes of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026).

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**Table 5.2: Consultation Relevant to Marine Geology, Oceanography and Physical Processes**

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MD-SEDD    | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the approach to the study area and baseline?</u></b><br><br>Yes. MD-SEDD advise the applicant considers using either Scottish Shelf Water – Reanalysis Service ( <a href="https://marine.gov.scot/information/scottish-shelf-waters-reanalysis-service">https://marine.gov.scot/information/scottish-shelf-waters-reanalysis-service</a> ) or other 3D model data from Copernicus Marine Service to characterise the baseline water column.                 | Noted. 3D hydrodynamic model data from Copernicus Marine Service has been used to inform the baseline water column characterisation presented in this <b>Bellrock OfTDA Scoping Report</b> . Existing regional model outputs developed for other offshore wind farm projects, with spatial coverage extending across the Bellrock OfTDA, have been used to inform baseline characterisation of the water column. Further details are provided in <b>Section 5.4.9</b> .                          |
| MD-SEDD    | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the proposed approach to the impact assessment?</u></b><br><br>MD-SEDD agree with the proposed approach to the impact assessment.                                                                                                                                                                                                                                                                                                                           | Noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| MD-SEDD    | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the potential impacts for scoping in / out?</u></b><br><br>MD-SEDD agree with the potential impacts scoped in/out.                                                                                                                                                                                                                                                                                                                                          | Noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| MD-SEDD    | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the identified key receptors?</u></b><br><br>MD-SEDD agree with the identified receptors.                                                                                                                                                                                                                                                                                                                                                                   | Noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the approach to the study area and baseline?</u></b><br><br>NatureScot welcome the inclusion of areas outside the OfTDA within the study area; however, NatureScot note that only tidal processes are considered. Waves and coastal/nearshore sediment transport should also be considered, as they could potentially be affected in areas outside the OfTDA. This is most commonly reflected in the Study Area by using coastal sub-cell(s) (most recently | Noted. <b>Section 5.4.1</b> provides detail on the study area adopted in this <b>Bellrock OfTDA Scoping Report</b> . The study area for the Bellrock OfTDA EIA will be refined based on the predicted zone of influence (Zol) of the Bellrock Offshore Transmission Infrastructure, taking account of all relevant impact pathways, including changes to tidal regime, wave regime, and bedload sediment transport.<br><br>The Dynamic Coast dataset has been included in <b>Section 5.4.2</b> . |

| Consultee  | Date/Document                                                                                | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                              | <p>represented on Dynamic Coast mapping), though on the largely rocky coast in the OfTDA, more local 'cells' are likely to be more relevant.</p> <p>NatureScot recommend an additional source of baseline data (modelled extent of future coastal erosion), available at <a href="http://www.dynamiccoast.com">www.dynamiccoast.com</a>.</p>                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NatureScot | <p>12 June 2026</p> <p>Formal response to the Bellrock OfTDA Scoping Information Package</p> | <p><b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b></p> <p>NatureScot agree that the three impacts listed on slide 5 should be scoped in, however:</p> <p>NatureScot consider that the current definition of Impact 2 and Impact 3 will likely not allow for a focused assessment. Instead, NatureScot recommend that Impact 2 should cover offshore sediment transport and seabed morphology, and Impact 3 should cover sediment transport and morphology in the coastal and nearshore area (defined as the zone of transport by waves (i.e. landward of the Depth of Closure for waves)). The three pathways currently listed for Impact 2 would apply to both of these.</p> | <p>Noted. The impacts under consideration are presented in <b>Section 5.5</b>. Separate impacts are presented for impacts on offshore bedload sediment transport regimes and morphological processes, and impacts on coastal sediment transport regimes and geomorphology.</p>                                                                                                                                                                                                                                                                                                                                                                                       |
| NatureScot | <p>12 June 2026</p> <p>Formal response to the Bellrock OfTDA Scoping Information Package</p> | <p><b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b></p> <p>NatureScot agree that the three impacts listed on slide 5 should be scoped in, however:</p> <p>NatureScot advise the assessment of an additional impact: Potential re-exposure of buried cable(s) at landfall. With accelerating sea level rise, recession of beaches and the coastal edge is a significant risk to buried/trenched landfalls. Assessing this within the EIA will help determine whether re-burial is possible, and if so, an enforceable commitment. If re-burial may not be possible, then potential effects of cable armouring should be assessed.</p>                                           | <p>Noted. The proposed landfall design will utilise a trenchless installation technique, marine exit point of the ducts at least 850 m from the shore in approximately 10 m Lowest Astronomical Tide. As a result, no buried or trenched cable(s) will be present within the intertidal or nearshore coastal zone where exposure due to coastal erosion or shoreline recession could occur.</p> <p>The potential implications of future coastal change on the Bellrock Offshore Transmission Infrastructure are considered in <b>Chapter 5</b>, where this impact pathway is <b><u>scoped out</u></b> of further assessment on the basis of the embedded design.</p> |

| Consultee  | Date/Document                                                                         | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br><br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the identified key receptors?</u></b></p> <p>Overall, NatureScot agree with the receptors identified as potentially affected. However, NatureScot highlight some potential confusion in relation ‘coastal receptors’ - locations of nationally/internationally important earth science (geology) should be called Geological Conservation Review (GCR) sites, not Geological Conservation Sites (as per slide 6). NatureScot agree with those identified, noting only that Dunottar Coast Section GCR has not been noted as a Site of Special Scientific Interest (SSSI).</p> <p>NatureScot note that it is unclear from slide 6 whether the Firth of Forth Banks Complex Nature Conservation Marine Protected Area (ncMPA) is considered as a receptor; as such, NatureScot advise that the Firth of Forth Banks Complex ncMPA should be considered as a receptor.</p> <p>NatureScot do not consider the earth science features of Montrose Basin SSSI (Maryton GCR site) and Rickle Craig – Scurdie Ness SSSI (Scurdie Ness to Usan GCR site) capable of being affected by the proposals and as such these can be scoped out.</p> <p>Additionally, NatureScot understand the OfTDA Scoping Boundary to indicate landfall to be in the Stonehaven area. However, previous public consultation event materials suggested a landfall location between Cowie and St Cyrus was under consideration. NatureScot assume the OfTDA has been refined since February; however, NatureScot request confirmation regarding the landfall area currently under consideration. Noting that should the Cowie – St Cyrus area still be under consideration, the coastal habitat interests of St Cyrus &amp; Kinnaber Links SSSI could be affected.</p> | <p>Noted. <b>Section 5.4.11</b> presents the designated sites located within the marine, oceanography, and physical processes study area and identifies whether each site is proposed to be scoped in or scoped out of the assessment.</p> <p>The closest points between the Bellrock OfTDA Scoping Boundary and St Cyrus and Kinnaber Links SSSI is approximately 25km. The maximum Zol for marine geology, oceanography and physical process is a 10 km wide buffer encompassing the Bellrock OfTDA Scoping Boundary, based on the maximum extent of tidal excursion ellipses overlapping with the boundary. Therefore, St Cyrus and Kinnaber Links SSSI has not been included as a potential designated site receptor as this site falls outside of the maximum Zol for marine geology, oceanography and physical process.</p> |

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## 5.4 Existing Environment

### 5.4.1 Study Area

359. The marine geology, oceanography and physical processes study area is defined by the distance over which impacts from the Bellrock OfTDA may occur and by the location of any receptors that may be affected by those potential impacts. This is presented as a Zol.
360. The Zol for marine geology, oceanography and physical processes is shown in **Figure 5.1 (Appendix A (Volume 1))** and encompasses a 10 km wide buffer around the Bellrock OfTDA Scoping Boundary, based on maximum tidal excursion ellipses within the boundary (ABPmer, 2008), noting this is a conservative distance as the length of the tidal excursion ellipse is often much smaller. The marine geology, oceanography and physical processes study area accounts for the potential local and regional effects on physical and sedimentary processes.
361. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The marine geology, oceanography, and physical processes study area will be updated for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4 of Chapter 1: Introduction**).
362. Additional refinements will be applied to the marine geology, oceanography, and physical processes study area following confirmation of the Bellrock OfTDA. These refinements will be based on considerations for the Zol varying depending on activity/infrastructure type and the changes introduced. This generates a unique Zol for each impact pathway including changes to:
- Wave regime;
  - Tidal regime;
  - Water circulation;
  - Suspended sediment concentration (SSC);
  - Changes to bedload sediment transport; and
  - Tidal excursion ellipses.
363. These Zols will be determined from all available data and information, including numerical modelling outputs, where appropriate. A total Zol will also be presented, representing the sum of the spatial extent of the Bellrock OfTDA and the Zol for all impact pathways.

### 5.4.2 Data and Information Sources

364. **Table 5.3** outlines the existing primary data that has been used to inform this Chapter and will also be used to inform the Bellrock OfTDA EIA Report.

**Table 5.3: Summary of Key Data and Information Sources for Marine Geology, Oceanography and Physical Processes**

| <b>Dataset</b>                                                                        | <b>Year(s)</b>                                  | <b>Description</b>                        |
|---------------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------|
| European Marine Observation and Data Network (EMODnet) (EMODnet, 2024)                | 2020                                            | Bathymetry                                |
| ABPmer (2008)                                                                         | 2007                                            | Tidal currents                            |
| ABPmer (2008)                                                                         | 2008                                            | Tidal excursion ellipses and tidal stream |
| ABPmer (2008)                                                                         | 2001-2008                                       | Waves                                     |
| UK Met Office's Wave Watch III model (Copernicus Marine Service Information, 2025)    | 2025                                            | Waves                                     |
| British Geological Survey (BGS) (BGS 1985a and 1985b))                                | Pre-1985 reports and current (2024) online maps | Seabed sediments and Quaternary geology   |
| Cefas (Cefas, 2016)                                                                   | 1998-2015                                       | Suspended sediment concentrations         |
| Scottish Shelf Waters Reanalysis Service (Barton et al., 2022)                        | 2018                                            | Stratification (temperature and salinity) |
| Morven Offshore Wind Array Project EIA Scoping Report (Bp/EnBW, 2023)                 | 2023                                            |                                           |
| Muir Mhòr Offshore Wind Farm, EIA Report (Muir Mhòr Offshore Wind Farm Limited, 2024) | 2024                                            |                                           |
| Cenos Offshore Windfarm, EIA Report (Cenos Offshore Wind Farm Limited, 2024)          | 2024                                            |                                           |
| Caledonia Offshore Wind Farm, EIA Report (Caledonia Offshore Wind Farm Limited, 2024) | 2024                                            |                                           |
| Ossian Array EIA Report (Ossian Offshore Wind Farm Limited, 2024)                     | 2024                                            |                                           |
| MarramWind Offshore Wind Farm EIA Report (MarramWind Limited, 2025)                   | 2025                                            |                                           |



| <b>Dataset</b>                                                                                                                             | <b>Year(s)</b>     | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ayre Offshore Windfarm EIA Report (Ayre Offshore Wind Farm Limited, 2025)                                                                  | 2025               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Quality Status Reports (QSR) (OSPAR, 2023a) | Latest report 2023 | Region II – Greater North Sea. Concentrations of contaminants in sediments/overall pollution status of each region                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Morven Offshore Wind Array Project EIA Scoping Report (Bp/EnBW, 2023)                                                                      | 2023               | Both projects are located immediately adjacent to the Bellrock OFTDA Scoping Boundary. It is considered that these two projects provide useful information regarding sediment quality of the region and sediment sampling for both projects identified that levels of contamination were, overall, very low across the marine geology oceanography and physical processes study area.                                                                                                                                                                                                  |
| Ossian Array EIA Report (Ossian Offshore Wind Farm Limited, 2024)                                                                          | 2024               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Bellrock WFDA EIA (Bellrock Offshore Wind Farm Limited, 2026)                                                                              | 2026               | The Bellrock WFDA overlaps with the Bellrock OFTDA Scoping Boundary. It is considered that this project provides useful information, including a range of relevant data for marine geology oceanography and physical processes. Due to this the characterisation and associated impact assessment of the Bellrock OFTDA for marine geology oceanography and physical processes can draw on this data to supplement project specific information.                                                                                                                                       |
| Bowdun Offshore Wind Farm EIA Report (Bowdun Offshore Wind Farm Limited, 2026)                                                             | 2026               | These projects are surrounded by the Bellrock OFTDA Scoping Boundary. It is considered that these projects provide useful information, including a range of relevant data for marine geology oceanography and physical processes. Due to this the characterisation and associated impact assessment of the Bellrock OFTDA for marine geology oceanography and physical processes can draw on this data to supplement project specific information.                                                                                                                                     |
| Kincardine Offshore Windfarm Environmental Statement (Kincardine Offshore Windfarm Limited, 2016)                                          | 2016               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Eastern Green Link 5 Preliminary Environmental Information Report (Eastern Green Link 5, 2026)                                             | 2026               | Eastern Green Link 5 runs through the Bellrock OFTDA Scoping Boundary (north to south), and a small section of the Aspen offshore export cable corridor runs through the Bellrock OFTDA Scoping Boundary. It is considered that these projects provide useful information, including a range of relevant data for marine geology oceanography and physical processes. Due to this the characterisation and associated impact assessment of the Bellrock OFTDA for marine geology oceanography and physical processes can draw on this data to supplement project specific information. |
| Aspen Offshore Wind Farm EIA Report (Cerulean Winds Aspen Project Limited, 2025)                                                           | 2025               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Bathing Waters information – available from SEPA                                                                                           | Last four years    | Compliance information regarding current and historical classifications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dynamic Coast (2026)                                                                                                                       | 2015-2021          | Modelled extent of future coastal erosion.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

#### 5.4.2.1 Site-specific Surveys

365. Site-specific surveys undertaken in 2023 within the Bellrock WFDA, which overlaps with part of the Bellrock OfTDA, will be used to inform the baseline characterisation where spatially relevant (**Table 5.4**).
366. In addition, site-specific environmental and geophysical surveys will be undertaken within the remaining Bellrock OfTDA in 2026, as noted in **Table 5.4**.
367. Subject to survey progress, the geophysical survey data collected within the remainder of the Bellrock OfTDA (i.e. the area outside the overlap with the Bellrock WFDA) may also be used to further inform the marine geology, oceanography, and physical processes baseline. Should the geophysical survey data not be available to inform the EIA, the assessment will rely on existing available datasets and publicly available information sources. The environmental survey (grab sampling and drop-down camera) will be used to characterise seabed morphology, surface sediments (including contaminants), and sub-surface geological conditions within the Bellrock OfTDA.
368. The combined use of existing Bellrock WFDA survey data and targeted Bellrock OfTDA surveys will provide sufficient spatial coverage to inform the baseline characterisation and impact assessment.
369. **Table 5.4** summarises the surveys relevant to marine geology, oceanography, and physical processes that have been, or will be, undertaken to inform the baseline<sup>25</sup>.

**Table 5.4: Summary of Site-specific Surveys for Marine Geology, Oceanography and Physical Processes**

| Dataset                                                                                                           | Description of Coverage                             | Dates               |
|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------|
| Geophysical survey (bathymetry and shallow geology)                                                               | Bellrock WFDA                                       | June to August 2023 |
| Grab sampling and particle size analysis                                                                          | 74 sample stations across the Bellrock WFDA         | July 2023           |
| Sediment contaminant analysis                                                                                     | 15 sample stations across the Bellrock WFDA         | July 2023           |
| Bellrock OfTDA geophysical survey                                                                                 | Bellrock OfTDA excluding the overlap with the WFDA. | 2026                |
| Bellrock OfTDA environmental survey (grab sampling and drop-down camera, including sediment contaminant analysis) | Bellrock OfTDA excluding the overlap with the WFDA. | 2026                |

<sup>25</sup> See **Figure 5.1 (Appendix A (Volume 1))** for an overview of the Bellrock OfTDA Scoping and WFDA Boundaries.

### 5.4.3 Bathymetry

370. The minimum and maximum water depths across the Bellrock OfTDA, from the overlap with the Bellrock WFDA up to 2 km from the coastline, based on available EMODnet (2020) bathymetry data, are approximately 32 m below Lowest Astronomical Tide (LAT) (at 2 km from the coastline) and 145 m below LAT, respectively (**Figure 5.2 (Appendix A (Volume 1))**). Within 2 km of the coast, water depths rapidly become shallower into the intertidal zone.
371. Notably, deeply incised tunnel valleys between approximately 20 to 50 km from the coastline present depths similar to the Bellrock WFDA (approximately 120 m below LAT), with potential changes in seabed elevation of 35 m over 1.5 km.

### 5.4.4 Seabed Sediments

372. BGS (1984, 1985a, 2024b) mapped sand as the dominant sediment type across the east of the Bellrock OfTDA Scoping Boundary. In the centre and west of the Bellrock OfTDA Scoping Boundary, slightly gravelly sand to sandy gravel is present. Minor areas of mud to muddy sand are also present in the southwest and near the centre of the Bellrock OfTDA Scoping Boundary (**Figure 5.3 (Appendix A (Volume 1))**). Sections of hard substrate are exposed at the seabed near the coast.

### 5.4.5 Shallow Geology

373. The shallow (Quaternary) geology of the Bellrock OfTDA Scoping Boundary is mainly sand and gravel with a small area of soft mud in the northwest, greater than 50 m thick (BGS, 1985b, 1985c, 2024a) (**Figure 5.4 (Appendix A (Volume 1))**). Sections of hard substrate are exposed at the seabed near the coast.

### 5.4.6 Tidal Currents

374. ABPmer (2008) modelled peak flows for mean spring tides of approximately a minimum of 0.26 to 0.5 m/s (in the Bellrock WFDA) and up to 1.25 m/s (10 km from the coastline) across the Bellrock OfTDA Scoping Boundary. The strongest currents occur in the west of the Bellrock OfTDA Scoping Boundary (**Figure 5.5 (Appendix A (Volume 1))**).

### 5.4.7 Waves

375. The most frequent waves across the Bellrock OfTDA Scoping Boundary during summer approach from all directions between the northeast to southeast and from a predominantly southerly direction in the winter (Scottish Government, 2020). ABPmer (2008) described annual mean significant wave heights of 1.76 m to 2.25 m within the Bellrock OfTDA Scoping Boundary approximately 50 km from the coastline, this reduces to 0.76 m to 1.75 m within 50 km of the coast (**Figure 5.6 (Appendix A (Volume 1))**). The lowest wave heights occur in the west of the Bellrock OfTDA Scoping Boundary.
376. Using wave data from the nearest wave buoy to the landfall (Arbroath buoy) to establish an effective significant wave height of 3.94 m ( $H_e$ ) for 2025, typical waves will stop interacting with the seabed in water depths of approximately 6 m ( $D_c$ ) using the method of Birkemeier (1985) (depth of closure ( $D_c$ ) =  $1.57 * \text{significant wave height } (H_e)$ ).

### 5.4.8 Suspended Sediment Concentrations

377. Cefas (2016) mapped the spatial distribution of average annual suspended sediment concentrations across the UK continental shelf between 1998 and 2015. The Bellrock OFTDA Scoping Boundary is characterised predominantly by values less than 1 mg/l (**Figure 5.7 (Appendix A (Volume 1))**). Large areas of the central North Sea are characterised by similar suspended sediment concentrations, with values becoming greater in shallower water towards the coast. Near the coast the Bellrock OFTDA Scoping Boundary is characterised predominantly by values  $\leq 3$  mg/l (**Figure 5.7 (Appendix A (Volume 1))**).

### 5.4.9 Stratification and Frontal Systems

378. As a part of Chapter 6: Marine Geology, Oceanography and Physical Processes and Appendix 6.2 of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) an analysis of stratification and frontal systems is provided for the Bellrock WFDA. From this analysis, stratification is shown to develop at depths of up to approximately 10 m to 40 m in May, peaking in August and weakening through September to October, until the water column becomes fully mixed by November. These conditions indicate the water column is strongly seasonally stratified within the most eastern part of the Bellrock OFTDA Scoping Boundary (at approximately  $\geq 105$  km from the coastline).

379. Evidence from calculations and modelling reported by other windfarms has been reviewed to determine how representative the Bellrock WFDA analysis is for the whole Bellrock OFTDA. This includes:

- Muir Mhòr Offshore Wind Farm (Muir Mhòr Offshore Wind Farm Limited, 2024);
- Cenoss Offshore Wind Farm (Cenoss Offshore Wind Farm Limited, 2024);
- Caledonia Offshore Wind Farm (Caledonia Offshore Wind Farm Limited, 2024);
- Marram Wind Offshore Wind Farm (Marram Wind Offshore Wind Farm, 2025);
- Ayre Offshore Wind Farm (Ayre Offshore Wind Farm Limited, 2025); and
- Bowdun Offshore Wind Farm (Bowdun Offshore Wind Farm Limited, 2026).

380. Notably, the summer potential energy anomaly of Northwest Europe, was calculated from Copernicus model outputs for Cenoss Offshore Wind Farm (Cenoss, 2024) and Ayre Offshore Wind Farm (Ayre Offshore Wind Farm Limited, 2025). The same summer potential energy anomaly of Northwest Europe was presented for both Ayre Offshore Wind Farm and Bowdun Offshore Wind Farm (Bowdun Offshore Wind Farm Limited, 2026). This provides a measure for the amount of seasonal stratification, calculated across the whole of the Bellrock OFTDA Scoping Boundary. This has been used to predict the likely stratification in the Bellrock OFTDA Scoping Boundary between the coastline and up to 105 km from the coastline near the WFDA. To the west of the Bellrock WFDA stratification likely also occurs during the summer, but this stratification is expected to be weaker than at the Bellrock WFDA. This means the period of stratification is shorter, more spatially varied and overall, less predictable between years. Between approximately 15 km to 105 km from the coastline, the water column may be permanently mixed to weakly seasonally stratified annually. This suggests a region of intermittent weak seasonal stratification which varies annually is present

across the central and western parts of the Bellrock OfTDA Scoping Boundary. Approximately  $\leq 15$  km from the coastline the water column is predicted to be permanently mixed, this accounts for the most western parts of the Bellrock OfTDA Scoping Boundary.

381. Between 15 km and 95 km from the coastline in the Bellrock OfTDA Scoping Boundary the modelling for Cenosis Offshore Wind Farm and Ayre Offshore Wind Farm. The modelling for the Cenosis Offshore Wind Farm suggests this region is permanently mixed, whereas the modelling for the Ayre Offshore Wind Farm indicates this region is weakly stratified. The central and western parts of the Bellrock OfTDA Scoping Boundary are therefore predicted to experience intermittent weak seasonal stratification which varies annually, although there is potential the majority of this region (up to the coast) may be permanently mixed.

#### 5.4.10 Water Quality

382. OSPAR is the mechanism by which 15 Governments and the EU cooperate to protect the marine environment of the North-East Atlantic<sup>26</sup>. Recognising the importance of clean, healthy, and productive seas to this region and to the world, OSPAR has committed to systematic periodic assessments of the drivers of degradation, the multiple pressures exerted on marine systems including the monitoring of chemicals in sediments and nutrients in the water. These assessments are reported in QSR (OSPAR, 2023a). OSPAR has divided its Maritime Area into five regions; the Bellrock OfTDA is located in Region II – Greater North Sea. The QSR 2023 highlights that concentrations of many of the most serious hazardous substances, such as Polychlorinated biphenyls (PCBs), Polyaromatic hydrocarbons (PAHs) and organochlorine insecticides, have decreased substantially compared with the 1980s and 1990s (OSPAR, 2023b). The last four assessments have described a steady improvement in the eutrophication status of three OSPAR Regions including the Greater North Sea region. The first assessment covering the period 1990 – 2000 was characterised by poor conditions in much of the North Sea (QSR 2000). With respect to hazardous substances, in most cases, the trends for assessed hazardous organic substances are downward, and most OSPAR Regions are also seeing a decline in heavy metal pollution. In the last two decades the downward trends have been smaller than in former decades, when decreases were driven by the elimination of large industrial point sources of contamination.
383. The WFD and associated regulations provide the main mechanism to control and improve water quality in all types of watercourses including at the coast out to three nautical miles. The WFD aims to:
- Prevent deterioration and enhance the status of aquatic ecosystems, including coastal waters;
  - Promote sustainable water use;
  - Reduce pollution; and
  - Contribute to the mitigation of floods and droughts.

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<sup>26</sup> OSPAR started in 1972 with the Oslo Convention against dumping and was broadened to cover land-based sources of marine pollution and the offshore industry by the Paris Convention of 1974. These two conventions were unified, updated and extended by the 1992 OSPAR Convention.

384. Surface waters are divided into water bodies, and the status of these water bodies is assessed by assigning them to a class from 'High' to 'Bad'. Contributing to these classification assessments are a number of compliance parameters which can be grouped into hydromorphology, biology and water quality. The Bellrock OfTDA Scoping Boundary overlaps four coastal water bodies which are summarised in **Table 5.5**. All water quality parameters monitored in these water bodies are classified as 'Good' or 'High'.

**Table 5.5: Summary of WFD Water Bodies within the Bellrock OfTDA Scoping Boundary**

| Water Body Name                           | Description                                                                                                                                                                                                                                                                                                                                                              | Water Body ID | Overall Classification (2024)                                                   |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------|
| Downie Point to Big Robs Cove             | Downie Point to Big Robs Cove is a coastal water body in the Scotland river basin district. It is 85.4 km <sup>2</sup> in area.                                                                                                                                                                                                                                          | 200092        | High                                                                            |
| Garron Point to Downie Point (Stonehaven) | Garron Point to Downie Point (Stonehaven) is a coastal water body in the Scotland river basin district. It is 16.7 km <sup>2</sup> in area.                                                                                                                                                                                                                              | 200517        | Good. High for majority of parameters. Good for macroalgae and hydromorphology. |
| Souter Head to Garron Point               | Souter Head to Garron Point is a coastal water body in the Scotland river basin district. It is 94.6 km <sup>2</sup> in area.                                                                                                                                                                                                                                            | 200518        | High                                                                            |
| Don Estuary to Souter Head (Aberdeen)     | Don Estuary to Souter Head (Aberdeen) is a coastal water body in the Scotland river basin district. It is 50.2 km <sup>2</sup> in area. The water body has been designated as a heavily modified water body on account of physical alterations that cannot be addressed without a significant impact on navigation and from an increased risk of subsidence or flooding. | 200105        | Good ecological potential.                                                      |

385. Within the Bellrock OfTDA Scoping Boundary is one designated bathing water; Stonehaven. The inner and outer bathing water control zones associated with the Stonehaven designated bathing water are also located within the Bellrock OfTDA Scoping Boundary. Stonehaven bathing water was classified as 'Excellent' in 2025 and 'Good' in the preceding three years<sup>27</sup>. These classifications are based on bacterial water quality indicators *Escherichia Coli* and *Intestinal Enterococci*. Calculating compliance accounts for both the average value and the range of values in a four-year rolling dataset. The profile for Stonehaven indicates that the bathing water is subject to short term pollution following heavy rainfall and pollution risks include sewer overflows, agricultural run-off and surface water discharges. Two rivers – the Carron Water and Cowie Water both drain into the Stonehaven bathing water which can impact on bathing water quality during

<sup>27</sup> <https://bathingwaters.sepa.org.uk/locations-and-results/results/?location=233617>



heavy rainfall. Whilst the proposed works would not release bacteria into the water (and therefore would not be expected to affect compliance with the bathing water classification), potential temporary increases in sediment concentrations in the water column could give rise to a visual plume which could raise concerns with the general public.

### 5.4.11 Designated Sites

386. The closest offshore designated site, the Firth of Forth Banks Complex ncMPA, is located at the southern edge of the Bellrock OfTDA Scoping Boundary (**Figure 5.8 (Appendix A (Volume 1))**). This is located within the 10 km precautionary Zol based on the alignment of tidal axes (north/south). Therefore, there is potential pathway for effects associated with marine geology, oceanography and physical processes to interact with this designated site. Receptors relevant to marine geology, oceanography, and physical processes associated with the Firth of Forth Banks Complex ncMPA include moraines and shelf banks and mounds. No other offshore designated sites are located within the marine geology, oceanography, and physical processes Zol.
387. At the coast, several designated sites fall within the marine geology, oceanography, and physical processes Zol. Coastal receptors include:
- SSSIs for geological features and GCR sites: Crawton Bay, Bay of Nigg, Garron Point;
  - GCR sites<sup>28</sup>: Dunnottar Coast Section, The Toutties, Garron Point to Slug Head; and
  - Local Nature Conservation Sites with important features relevant to marine geology, oceanography and physical processes: Downie Point to Todhead Coast, Todhead Point to Johnshaven Coast, Findon, Muchalls to Stonehaven Bay, and Portlethen to Muchalls Coast.

### 5.4.12 Future Coastal Erosion

388. Future coastal erosion has been considered as part of the Existing Environment section of this Chapter, following consultation with NatureScot, to inform **Chapter 5: Marine Geology, Oceanography, and Physical Processes** in relation to the potential risk of erosion affecting buried cables at the landfall over the operational lifetime of the Bellrock Project. Baseline information has been obtained from the Dynamic Coast research programme, including the Dynamic Coast DC2 Advanced WebMap<sup>29</sup>, to provide an indication of potential future coastal erosion trends (Dynamic Coast, 2026).
389. The present-day coastline within the proposed landfall Area of Search is classified as approximately 25% erodible and 75% unerodable (**Figure 5.9 (Appendix A (Volume 1))**). Owing to the predominance of unerodable coastline and the limited risk posed to existing infrastructure, future coastal erosion near the landfall location has not been modelled by the Dynamic Coast

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<sup>28</sup> National Park authorities and some local authorities treat unnotified GCR sites as 'candidate Sites of Special Scientific Interest' and afford them the same protection as Sites of Special Scientific Interest.

<sup>29</sup> <https://www.dynamiccoast.com/webmaps>

research programme. Consequently, no site-specific future erosion projections are available within the proposed landfall Area of Search.

390. The nearest available future erosion projections are located at Cowie, immediately south-southeast of the proposed landfall Area of Search. The coastline at Cowie is classified as wholly erodible (**Figure 5.9 (Appendix A (Volume 1))**). Under the Dynamic Coast high-emissions scenario, projected shoreline retreat relative to the present-day MHWS position is up to 6.5 m and 16 m by 2050 and 2100 respectively (Dynamic Coast, 2026). These values are obtained from the nearest high-emissions scenario transect to the landfall location, for which erosion projection data is available.
391. As a precautionary worst-case assumption, a similar magnitude of shoreline retreat could be considered within the proposed landfall Area of Search. However, this is likely to represent a conservative estimate, given the greater proportion of unerodable coastal material present in the proposed landfall Area of Search. Erosion within the proposed landfall Area of Search is more likely to be localised and confined to the limited areas classified as erodible (**Figure 5.9 (Appendix A (Volume 1))**). The implications of future coastal erosion for the landfall infrastructure and buried export cables, including potential re-exposure of buried cable(s) at landfall, are assessed in **Chapter 5: Marine Geology, Oceanography, and Physical Processes**.

## 5.5 Potential Impacts

392. During the construction phase of the Bellrock Offshore Transmission Infrastructure, there is the potential for the installation of the FBSSs for the OfSS(s) and OfRCS(s), interconnector cable(s), offshore export cables and associated cable and scour protection to disturb sediment, potentially resulting in changes in suspended sediment concentrations and/or seabed levels. Any infrastructure associated with the OfSS(s) (e.g. FBSSs and interconnector cable(s)) will only be installed within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA. FBSSs and infrastructure associated with the OfRCS(s) will be installed within the OfRCS(s) Area of Search (**Figure 1.3 (Appendix A (Volume 1))**).
393. During the O&M phase of the Bellrock Transmission Infrastructure, there is potential for the presence of the OfSS(s), OfRCS(s) FBSSs, and cable and scour protection to cause changes to the tidal and wave regimes and water column structure due to physical blockage effects. These changes could potentially affect the sediment regime and/or seabed morphology. The physical blockage effects may also alter the water column structure influencing nutrient fluxes and primary productivity. In addition, there is potential for disturbance caused by maintenance activities.
394. These potential impacts are summarised below, based on the interconnected changes they may cause.
- Impacts on SSCs and seabed level includes:
    - Changes to SSCs and transport;
    - Changes in seabed level due to deposition of SSC; and
    - Changes to water quality due to remobilisation of chemicals bound to the sediments.



- Impacts on bedload sediment transport regime and seabed morphology includes:
  - Changes to tide regime;
  - Changes to wave regime;
  - Changes to bedload sediment transport; and
  - Changes to seabed morphology.
- Impacts on stratification and frontal systems includes:
  - Changes to tide regime;
  - Changes to wave regime; and
  - Changes to water column stratification influencing nutrient fluxes and primary productivity.
- Impacts on coastal sediment transport regimes and geomorphology
  - Changes to tide regime;
  - Changes to wave regime;
  - Changes to coastal sediment transport; and
  - Changes to coastal seabed morphology.
- Impacts to seabed morphology due to indentations on the seabed from installation vessels include:
  - Changes to seabed morphology.

### 5.5.1 Embedded Mitigation Measures

395. Embedded mitigation has been identified, as presented in **Table 5.6** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
396. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 5.6: Embedded Mitigation Measures Relevant to Marine Geology, Oceanography and Physical Processes**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                                               | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                       |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                        | Adoption of seabed preparation methods and equipment that minimise sediment suspension and dispersal will reduce the release of sediment into the water column, thereby limiting the extent and duration of sediment plumes and associated sediment deposition.                                                                       | Primary         |
| X                          | ✓   | X               | Offshore export cables and interconnector cable(s) will be installed with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to avoid the need for external cable protection. Cable protection will only be used where adequate burial cannot be achieved and will be minimised so far as reasonably practicable. The requirement for, and extent of, any cable protection will be determined through a post-consent Cable Burial Risk Assessment (CBRA) (see row below relating to the CBRA). | Maximising cable burial and minimising the use of external cable protection will reduce the extent of permanent changes to seabed morphology and minimise localised changes to hydrodynamic and sediment transport processes associated with cable protection.                                                                        | Primary         |
| X                          | ✓   | X               | Scour protection (e.g. concrete mattresses, rock placement, grout bags, artificial frond mats), will prevent scour during the operational life of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                       | Scour protection will minimise seabed erosion around the Bellrock Offshore Transmission Infrastructure, maintaining the integrity of the seabed and limiting localised changes to seabed morphology, hydrodynamic processes, and sediment transport during the operational life of the Bellrock Offshore Transmission Infrastructure. | Primary         |
| ✓                          | X   | X               | Material displaced during cable burial activities will be backfilled, where necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Backfilling displaced material will help reinstate seabed conditions following cable installation, reducing the permanence of seabed disturbance and minimising potential changes to sediment transport and deposition processes.                                                                                                     | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                            | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |
| ✓                          | ✓   | X               | A detailed CBRA will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed. | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will reduce the extent of seabed disturbance associated with cable installation, thereby limiting potential changes to seabed characteristics and sediment transport processes.                                     | Primary         |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                                                  | Periodic geophysical surveys will enable the identification of areas where cables become exposed, allowing remedial works to be undertaken where necessary. This will help maintain cable burial and seabed stability, reducing the potential for localised seabed disturbance and changes to sediment transport and deposition patterns over construction and O&M of the Bellrock Offshore Transmission Infrastructure. | Primary         |
| ✓                          | ✓   | ✓               | Development of and adherence to a Cable Plan (CaP).<br>The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.                               | The CaP will ensure that cable routing, installation methods, burial requirements and any necessary protection measures are appropriately designed and managed. This will help minimise the extent of seabed disturbance, thereby reducing potential changes to seabed characteristics, sediment transport and deposition patterns.                                                                                      | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan.</p> <p>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.</p>                                                                                                                                                                                                                                                                                               | <p>Implementation of a Marine Pollution Contingency Plan will reduce the likelihood and potential severity of pollution incidents during construction and O&amp;M of the Bellrock Offshore Transmission Infrastructure. This will minimise the risk of contamination of seabed sediments and the water column, thereby limiting potential changes to existing seabed and water quality conditions.</p>                                   | Tertiary        |
| ✓                          | ✓   | X               | <p>An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&amp;M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.</p>                                                                                                                                                                                                                                        | <p>Preparation and implementation of an Environmental Management Plan will provide a framework for the consistent application of environmental control and mitigation measures throughout construction and O&amp;M.</p> <p>This will help avoid/minimise unnecessary seabed disturbance and sediment mobilisation, thereby reducing the potential for changes to seabed characteristics, sediment transport and deposition patterns.</p> | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>▪ MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>▪ The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>▪ Consideration of guidance from the International Maritime Organization (2023) on the control and</li> </ul> | <p>Adherence to international and national regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will minimise the risk of accidental releases and contamination associated with vessel activities. This will help maintain existing seabed and water conditions and reduce the potential for changes to sediment quality and physical characteristics.</p>                           | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                        | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
|                            |     |                 | management of ships' biofouling to minimise the transfer of invasive aquatic species.                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme.</p> <p>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                      | The Decommissioning Programme will provide a framework for managing the decommissioning of the Bellrock Offshore Transmission Infrastructure, helping to minimise seabed disturbance and limit potential changes to seabed morphology, sediment movement and deposition patterns.                                                                                                                                                                              | Tertiary        |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | Regular inspection, monitoring and maintenance of the Bellrock Offshore Transmission Infrastructure will enable the timely identification and remediation of damage, deterioration or debris accumulation. This will help maintain the integrity and stability of the Bellrock Offshore Transmission Infrastructure, reducing the potential for unplanned seabed disturbance and limiting changes to seabed characteristics and sediment processes during O&M. | Tertiary        |

## 5.6 Scoping of Potential Impacts

### 5.6.1 Construction, Operation and Maintenance, and Decommissioning Phases

#### 5.6.1.1 Impacts on SSCs and Seabed Level

397. Potential impacts during construction include temporary disturbance of the seabed due to the installation activities for OfSS(s), OfRCS(s), interconnector cable(s) and offshore export cables (including seabed preparation, and, if buried, ploughing/trenching, and cable burial) which release sediment into the water column resulting in increased suspended sediments and changes to seabed levels as disturbed sediment is redeposited. This may also occur during O&M. Whilst the proposed works would not release bacteria into the water (thus potentially impacting on bathing water compliance), potential increases in sediment concentrations in the water column could give rise to a visual plume which could raise concerns with the general public. These potential impacts will be assessed as part of the Bellrock OfTDA EIA Report and are therefore **scoped in** for construction, O&M and decommissioning.
398. Disturbance of bed sediments could also give rise to increases in chemical contaminants within the water column if bound to bed sediment particles. This potential impact is **scoped in** for all phases. However, sediment contamination analysis will be undertaken on samples collected during the site-specific environmental survey (**Section 5.4.2.1**). Should contaminant levels be below relevant threshold levels (e.g. Cefas Action Levels), this impact will be **scoped out** of further assessment in the EIA.

#### 5.6.1.2 Impacts on Bedload Sediment Transport Regime and Seabed Morphology

399. During the construction of the Bellrock OfTDA, there is potential for changes in seabed morphology due to offshore construction activities (e.g. seabed preparation/sand wave clearance). Potential impacts during O&M could occur due to the physical presence of infrastructure (i.e. OfSS(s), OfRCS(s), interconnector cable(s), offshore export cables and associated cable and scour protection above the seabed), which may result in local changes to tidal currents and waves due to physical blockage effects. These changes could potentially affect the sediment transport regime and/or seabed morphology. This impact will be assessed as part of the Bellrock OfTDA EIA Report and is therefore scoped in for construction, O&M and decommissioning.
400. Minimal impacts can be expected on the bedload sediment transport regime, both within the Bellrock OfTDA as well as further afield, provided that the OfSS(s), OfRCS(s) and associated substructures are adequately spaced. For the OfSS(s) this will vary depending on the details of the layout of the OfSS(s) and the other infrastructure also located within the area of the Bellrock OfTDA that overlaps the Bellrock WFDA. For the OfRCS(s) this, will vary depending on the details of the layout of the OfRCS(s) and the other infrastructure also located within the area of the Bellrock OfTDA outside of the Bellrock WFDA (**Figure 1.3** and **Figure 5.1 (Appendix A (Volume 1))**). Impacts on bedload sediment transport are expected to be local to the areas immediately surrounding the individual OfSS(s), OfRCS(s) in the form of seabed scour where the sediment is soft enough to be mobilised, and the embedded mitigation in the form of scour protection is not effective. Impacts on bedload sediment transport, which are expected to arise mainly from seabed

scour, at each OfSS(s), OfRCS(s) will be assessed using well-established empirical methods applied to offshore wind farms elsewhere. This impact will be assessed as part of the Bellrock OfTDA EIA Report and is therefore **scoped in** during construction and decommissioning.

401. Should offshore export cables and interconnector cable(s) be buried, there would be no impact on bedload sediment transport during the O&M phase. However, it is possible that cable protection would be required at locations where the seabed is characterised by harder geology which prevents or restricts burial and at crossing locations. The impacts that cable protection may have on bedload sediment transport and seabed morphological change primarily relate to the potential for interruption of sediment transport and the footprint presented on the seabed. This impact will be assessed as part of the Bellrock OfTDA EIA Report and is therefore also **scoped in** for O&M.

### 5.6.1.3 Impacts on Stratification and Frontal Systems

402. Whilst there is potential for the physical presence of the Bellrock Offshore Transmission Infrastructure to impact upon the wave and tidal current regimes during construction and decommissioning, these impacts would increase incrementally as it is constructed with the greatest potential impacts resulting from the completed development of the Bellrock OfTDA. These impacts are therefore considered for the O&M phase and are therefore scoped out from further consideration in relation to the construction phase and decommissioning phase to avoid double counting.
403. Potential impacts during O&M could occur due to the physical presence of infrastructure (i.e. OfSS(s), OfRCS(s)), which may result in local changes to water column structure due to physical blockage effects. There are no anticipated effects from the cables on water column stratification therefore this potential impact only refers to areas where the OfSS(s) and OfRCS(s) will be located. Depending on a range of factors such as the strength of initial stratification, the amount of turbulent kinetic energy induced by new structures, the number of structures the water column interacts with and the duration of the interaction (driven by current speed), the water may pass through the area in a modified state (e.g. the strength of stratification may be lower) or remain in the same state as when it entered the Bellrock OfTDA Scoping Boundary (no change). The Bellrock OfSS(s) will be located alongside the Bellrock Wind Farm Infrastructure within the Bellrock WFDA, for which the impact for changes to water column structure was assessed to be minor adverse in significance (Bellrock Offshore Wind Farm Limited, 2026). This impact will be assessed as part of the Bellrock OfTDA EIA Report and therefore is **scoped in** during O&M.

### 5.6.1.4 Impacts on Coastal Sediment Transport Regimes and Geomorphology

404. During the construction phase of the Bellrock Offshore Transmission Infrastructure, there is potential for changes in coastal sediment transport regimes and geomorphology due to the construction activities required to create excavation pits for a trenchless technique (e.g. horizontal directional drilling) to bring the cables onshore. This may directly alter the local geomorphology through physical disturbance of the seabed. Similar effects to those experienced during construction may also occur during decommissioning. The installation of external cable protection at the marine exit ducts for the trenchless technique may influence coastal sediment transport regimes by creating blockage effects, as currents are the primary driver of bedload sediment transport. This effect would be most prominent during the O&M phase of the Bellrock Offshore Transmission Infrastructure. The impact will be assessed as part of the Bellrock OfTDA EIA Report and therefore is scoped in for construction, O&M and decommissioning.



405. Changes in wave regime at the landfall have the potential to change nearshore and coastal sediment transport regimes. There will be no changes to wave regime as a trenchless solution will be adopted for landfall so there will be no structures in the coastal zone. Impacts on coastal and nearshore wave regime and associated coastal transport are therefore **scoped out** for construction, O&M and decommissioning.

#### **5.6.1.5 Impacts to Seabed Morphology due to Indentations on the Seabed from Installation Vessels**

406. There is **potential** for certain vessels used during installation of the OfSS(s), OfRCS(s) interconnector cable(s) and offshore export cables to directly impact the seabed. This applies for those vessels that utilise jack-up legs or anchors to hold station and to provide stability for a working platform. Where legs or anchors (and associated chains) have been placed on the seabed and then removed, there is potential for an indentation to remain, proportional to the dimensions and drag (if any) of the object. However, the disturbance footprint would be limited in scale and any impacts would be temporary in nature with indentations infilling through natural processes over the course of a few days to months. These potential effects are therefore **scoped out** from further consideration in the Bellrock OfTDA EIA Report for all phases.

### **5.6.2 Bellrock OfTDA Whole Project Assessment**

407. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on marine geology, oceanography or physical processes receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
408. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock Onshore Transmission Development Area for marine geology, oceanography, and physical processes. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

### **5.6.3 Potential Cumulative Effects**

409. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
410. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 5.6.2**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for

cumulative impacts and subsequent cumulative effects on marine geology, oceanography, and physical processes receptors.

#### 5.6.4 Potential Transboundary Effects

411. The Bellrock OfTDA Scoping Boundary is approximately 125 km from the Exclusive Economic Zone of Norway. Given that the likely effects will be restricted to near-field change, coupled with their location at distance from the Exclusive Economic Zone boundary, there would be no pathway for transboundary effects. Therefore, transboundary effects are proposed to be **scoped out** of further assessment in the Bellrock OfTDA EIA.

#### 5.6.5 Summary of Potential Impacts

412. **Table 5.7** outlines the marine geology, oceanography and physical processes impacts which are proposed to be scoped in or scoped out of further assessment in the Bellrock OfTDA EIA.

**Table 5.7: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Marine Geology, Oceanography and Physical Processes**

| Potential Impact                                                   | Receptors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Scoped In or Scoped Out (✓ or X) |     |                 |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----|-----------------|
|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Construction                     | O&M | Decommissioning |
| Impacts on SSCs and seabed level                                   | <ul style="list-style-type: none"> <li>▪ Moraines associated with Firth of Forth Banks Complex ncMPA;</li> <li>▪ Shelf banks and mounds associated with Firth of Forth Banks Complex ncMPA;</li> <li>▪ Coastal receptors (<b>Section 5.4.11</b>);</li> <li>▪ Seabed sediments;</li> <li>▪ Seabed bedforms (if present);</li> <li>▪ Relict geomorphological features including tunnel valleys (if present);</li> <li>▪ Offshore water quality;</li> <li>▪ WFD water bodies; and</li> <li>▪ Stonehaven Bathing Water.</li> </ul> | ✓                                | ✓   | ✓               |
| Impacts on bedload sediment transport regime and seabed morphology | <ul style="list-style-type: none"> <li>▪ Moraines associated with Firth of Forth Banks Complex ncMPA;</li> <li>▪ Shelf banks and mounds associated with Firth of Forth Banks Complex ncMPA;</li> <li>▪ Coastal receptors (<b>Section 5.4.11</b>);</li> <li>▪ Seabed sediments;</li> <li>▪ Seabed bedforms (if present); and</li> <li>▪ Relict geomorphological features including tunnel valleys (if present).</li> </ul>                                                                                                      | ✓                                | ✓   | ✓               |
| Impacts on stratification and frontal systems                      | <ul style="list-style-type: none"> <li>▪ Water column.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                              | X                                | ✓   | X               |

| Potential Impact                                                                        | Receptors                                                                                                                                                                                                                                                                                                                                                                                                     | Scoped In or Scoped Out (✓ or X) |     |                 |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----|-----------------|
|                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                               | Construction                     | O&M | Decommissioning |
| Impacts on coastal sediment transport regimes and geomorphology                         | <ul style="list-style-type: none"> <li>Coastal receptors (<b>Section 5.4.11</b>);</li> <li>Seabed sediments;</li> <li>Seabed bedforms (if present); and</li> <li>Relict geomorphological features including tunnel valleys (if present).</li> </ul>                                                                                                                                                           | ✓                                | ✓   | ✓               |
| Impact to seabed morphology due to indentations on the seabed from installation vessels | <ul style="list-style-type: none"> <li>Moraines associated with Firth of Forth Banks Complex ncMPA;</li> <li>Shelf banks and mounds associated with Firth of Forth Banks Complex ncMPA;</li> <li>Coastal receptors (<b>Section 5.4.11</b>);</li> <li>Seabed sediments;</li> <li>Seabed bedforms (if present); and</li> <li>Relict geomorphological features including tunnel valleys (if present).</li> </ul> | X                                | X   | X               |
| Bellrock OfTDA Whole Project Assessment                                                 | Relevant receptors as listed above for each impact.                                                                                                                                                                                                                                                                                                                                                           | ✓                                | ✓   | ✓               |
| Cumulative effects                                                                      | Relevant receptors as listed above for each impact.                                                                                                                                                                                                                                                                                                                                                           | ✓                                | ✓   | ✓               |
| Transboundary effects                                                                   | Relevant receptors as listed above for each impact.                                                                                                                                                                                                                                                                                                                                                           | X                                | X   | X               |

## 5.7 Proposed Approach to Impact Assessment

413. As part of the EIA process, the existing environment with respect to marine geology, oceanography and physical processes will be described, including, but not limited to the following:
- Bathymetry;
  - Shallow geology;
  - Tidal currents;
  - Waves;
  - Seabed sediment distribution;
  - Bedload sediment transport;
  - Suspended sediment concentrations and transport;
  - Seabed contaminant concentrations;
  - Water quality classification status;
  - Morphological change;
  - Stratification and frontal systems; and
  - Anticipated trends in baseline conditions.
414. The assessment of effects on marine geology, oceanography and physical processes will be based on a Source-Pathway-Receptor conceptual approach, whereby the source is the initiator event, the pathway is the link between the source and the receptor impacted, and the receptor is the receiving entity. An example of this type of conceptual model is provided by seabed preparation which disturbs sediment on the seabed (source). This sediment is then transported by tidal currents until it settles back to the seabed (pathway). The deposited sediment could change the composition and elevation of the seabed (receptor).
415. The use of process based numerical modelling from other offshore wind farms will underpin the assessment of tidal currents, waves, sediment plume dispersion and stratification. The assessment of stratification will be supported by the existing stratification analysis presented in Appendix 6.2 of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026). The assessment of sediment quality and the potential risk to water quality will be based on the use of recognised sediment quality guidelines.
416. Additional receptors proposed for inclusion in the assessment are geological and geomorphological features that are not currently protected under an environmental designation. These include:
- Seabed sediments;
  - Seabed bedforms (if present); and
  - Relict geomorphological features including tunnel valleys (if present).

417. The impact assessment will incorporate a combination of the sensitivity of the receptor, its value (if applicable) and the magnitude of the change to determine a significance of effect (see **Chapter 4: Approach to Scoping and Environmental Impact Assessment**).

## 5.8 Scoping Questions for Consultees

418. The following questions are posed to consultees to help them frame and focus their response to the marine geology, oceanography and physical processes scoping exercise, which will in turn inform the EIA:
- Do you agree that all the relevant data sources have been identified in **Section 5.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 5.2**?
  - Do you agree with the proposed study area as presented in **Section 5.4.1**?
  - Do you agree with the receptors scoped in?
  - Do you agree with the proposed approach to the assessment of tidal currents, waves, sediment plume dispersion and stratification?
  - Do you agree that if the ZOI reduces in the future (e.g. to align with the Bellrock OfTDA or more accurate data) receptors that are no longer within the ZOI (Bellrock OfTDA plus 10 km buffer) can be scoped out?
  - Do you agree that any potential effects that can be managed via embedded mitigation, such as control of drill fluids and accidental spills be scoped out?
  - Do you have any other matters or information sources that you wish to present?

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# 6 Intertidal and Benthic Ecology

## 6.1 Introduction

419. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on intertidal and benthic ecology.
420. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
421. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
422. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

423. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
424. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on intertidal and benthic ecology receptors within the Bellrock OFTDA EIA Report. This Chapter has been prepared by Haskoning.
425. This Chapter should be read in conjunction with the following chapters of the **Bellrock OFTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 7: Fish and Shellfish Ecology;**
  - **Chapter 9: Intertidal and Offshore Ornithology; and**
  - **Chapter 17: Climate Change.**
426. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OFTDA EIA Report.

## 6.2 Legislation, Policy and Guidance

427. **Table 6.1** identifies the key legislation, policy and guidance relevant to the intertidal and benthic ecology assessment. It sets out the framework for informing the assessment of the potential impacts and subsequent effects on benthic habitats and species. Overarching legislation and policy context is provided in **Chapter 2: Legislative and Policy Context**.

**Table 6.1: Legislation, Policy and Guidance Relevant to the Intertidal and Benthic Ecology Assessment**

| Relevant Legislation, Policy and Guidance | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Marine (Scotland) Act 2010                | Provides the statutory framework for marine licensing in Scottish inshore waters (0 to 12 nautical miles (nm)). Part 4, Section 21 requires a Marine Licence for licensable activities. Section 27(1) requires that the Scottish Ministers give regard to the need to protect the environment when determining an application. Potential impacts and subsequent effects on benthic species and habitats relevant to the Bellrock OFTDA are considered throughout this assessment.<br><br>Nature Conservation Marine Protected Areas (ncMPAs) within Scottish Inshore waters (within the 12 nm limit) are designated |

| Relevant Legislation, Policy and Guidance                             | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       | under the Marine (Scotland) Act 2010. ncMPAs are areas that have been designated for the purpose of conserving marine flora and fauna, marine habitat or types of marine habitat, or features of geological or geomorphological interest.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Marine and Coastal Access Act 2009                                    | <p>Provides the statutory framework for marine licensing in Scottish offshore waters (12 nm to 200 nm). Section 66 requires a Marine Licence for licensable activities. Section 69(1) requires that the appropriate licensing authority gives regard to the need to protect the environment when determining an application. Potential impacts and subsequent effects on benthic species and habitats relevant to the Bellrock OfTDA are considered throughout this assessment.</p> <p>ncMPAs existing beyond the 12 nm limit in Scottish waters and Marine Conservation Zones in English waters are designated under the Marine and Coastal Access Act 2009. These sites (ncMPAs and Marine Conservation Zones) are areas that have been designated for the purpose of conserving marine flora and fauna, marine habitat or types of marine habitat, or features of geological or geomorphological interest.</p>                                                                                                                                                                                            |
| Conservation (Natural Habitats &c.) Regulations 1994                  | <p>The Conservation (Natural Habitats &amp;c.) Regulations 1994 apply within Scottish inshore waters (0 nm to 12 nm), whereas the Conservation of Offshore Marine Habitats and Species Regulations 2017 apply within Scottish offshore waters (12 nm to 200 nm).</p> <p>These regulations transpose the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) into domestic law and provide the legal framework for the designation of Special Areas of Conservation and Special Protection Areas. The Habitats Directive lists habitats (Annex I) and species (Annex II) of community interest. Annex I habitats include key benthic habitats such as reefs and sandbanks.</p> <p>Annex I benthic habitats will be considered within the intertidal and benthic ecology assessment, and the potential for effects on Special Areas of Conservation containing benthic qualifying features has been addressed separately through the <b>Bellrock OfTDA Habitats Regulations Appraisal Screening Report (Volume 2)</b>.</p> |
| Conservation of Offshore Marine Habitats and Species Regulations 2017 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Nature Conservation (Scotland) Act 2004                               | The Nature Conservation (Scotland) Act 2004 sets out a series of measures designed to conserve biodiversity, and to protect and enhance the biological and geological natural heritage. This Act also provides amendments to the Wildlife and Countryside Act 1981 specifically for Scottish inshore waters (within 12 nm), adding that it is an offence to disturb cetacean species (either recklessly or intentionally). This Act also enacts requirements under the Bern Convention 1979.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Wildlife and Countryside Act 1981                                     | Provides statutory protection for species in the United Kingdom (UK), including Scotland. The act applies to the terrestrial and inshore marine (0 nm – 12 nm) environments. Under the Wildlife and Countryside Act 1981, it is an offence to intentionally or recklessly disturb any wild animal included under Schedule 5 of the Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                     | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wildlife and Natural Environment (Scotland) Act 2011                                                                                                                                                                                                                                          | Amends and strengthens wildlife protection in Scotland, including certain provisions of the Wildlife and Countryside Act 1981. Introduces measures for control of invasive non-native species (INNS) and reinforces the biodiversity duty on Scottish public bodies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Policy</b>                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Blue Economy Vision for Scotland (Scottish Government, 2022)                                                                                                                                                                                                                                  | Provides a strategic framework that guides marine policies to achieve sustainable use of Scotland's marine environment up to 2045.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020) and the Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025).<br><br>Updated Sectoral Marine Plan for Offshore Wind Energy (SMP-OWE) is expected to be published in autumn 2026. | The SMP-OWE identifies plan options and spatial constraints for offshore wind development in Scottish waters, providing the strategic spatial planning framework to support the ScotWind leasing process and future offshore wind development. It informs the sustainable development of offshore wind by considering environmental, socioeconomic, and marine user constraints. The Draft Updated SMP-OWE (2025) provides an updated evidence base and revised option areas in order to reflect the outcome of the ScotWind and Innovation and Targeted Oil and Gas leasing rounds. It also sets out key parameters for parameters should guide licensing and consenting decision-making; however, it remains in draft and has limited weight at present. |
| The Convention for the Protection of the Marine Environment of the north-east Atlantic (the OSPAR Convention) 1992                                                                                                                                                                            | Provides the legal framework for cooperation to protect the marine environment of the north-east Atlantic, including the prevention and elimination of pollution and the protection and conservation of marine habitats and species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Convention on Biological Diversity 1992                                                                                                                                                                                                                                                       | Establishes the international commitment to conserve biological diversity, promote sustainable use of its components, and share the benefits of genetic resources. Provides high-level context for biodiversity protection in marine environments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland (Scottish Government, 2024)                                                                                                                                                                                 | Sets out Scotland's long-term framework for biodiversity restoration and protection across land, freshwater, and marine environments, aiming to achieve Nature Positive outcomes by 2030 and fully restored biodiversity by 2045. The strategy is structured across six objectives: <ul style="list-style-type: none"> <li>▪ Accelerate restoration and regeneration;</li> <li>▪ Protect nature on land and at sea, across and beyond protected areas;</li> <li>▪ Embed nature-positive farming, fishing, and forestry;</li> <li>▪ Protect and support recovery of vulnerable and important species and habitats;</li> <li>▪ Invest in nature; and</li> <li>▪ Take action on the indirect drivers of biodiversity loss.</li> </ul>                         |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                   | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Scotland's National Marine Plan (Scottish Government, 2015)</p>                                                                                                                                          | <p>Provides a statutory framework for sustainable use and management of Scottish inshore and offshore waters. Policies of relevance to intertidal and benthic ecology include:</p> <ul style="list-style-type: none"> <li>▪ GEN1 (General Planning Principle): There is a presumption in favour of sustainable development and use of the marine environment when consistent with the policies and objectives of this Plan;</li> <li>▪ GEN9 (Natural Heritage): Development and use of the marine environment must: (a) Comply with legal requirements for protected areas and protected species. (b) Not result in significant impact on the national status of Priority Marine Features. (c) Protect and, where appropriate, enhance the health of the marine area;</li> <li>▪ Gen10 (INNS): Opportunities to reduce the introduction of invasive non-native species to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made; and</li> <li>▪ GEN21 (Cumulative Impacts): Cumulative impacts affecting the ecosystem of the marine plan area should be addressed in decision making and plan implementation.</li> </ul> |
| <p>Strategy of the OSPAR Commission for the Protection of the Marine Environment of the north-east Atlantic (OSPAR, 2021)</p>                                                                               | <p>Provides the framework by which OSPAR's 16 Contracting Parties implement the OSPAR convention until 2030. Sets collective objectives to address biodiversity loss, pollution (including marine litter), and climate change, contributing to the United Nations 2030 Agenda for Sustainable Development. The strategy includes four themes, clean seas, biologically diverse seas, productive and sustainable seas, and seas resilient to climate change and ocean acidification.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Guidance</b>                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>Joint Nature Conservation Committee (JNCC) Marine Monitoring Handbook (Davies et al., 2001)</p>                                                                                                          | <p>These guidelines have been produced to promote good practice in marine monitoring.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p>The Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018)</p> | <p>Provides professional guidance on ecological impact assessment methodology, including the identification, classification, and evaluation of ecological receptors as Important Ecological Features (IEFs).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>Centre for Environment Fisheries and Aquaculture Science (Cefas), Guidelines for Data Acquisition to Support Marine Environmental Assessments for Offshore Renewable Energy Projects (Cefas, 2012)</p>   | <p>These guidelines assist in the design, review and implementation of environmental data collection and analytical activities associated with all stages of offshore renewable energy developments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>Guidelines for the Conduct of Benthic Studies at Marine Aggregate Extraction Sites (2nd edition) Marine Aggregate Levy Sustainability Fund (Ware and Kenny, 2011)</p>                                    | <p>This guidance promotes a comprehensive and consistent approach to the assessment of the benthic environment (i.e. sediments and associated benthic fauna).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Relevant Legislation, Policy and Guidance                                                                                                                         | Relevance to the Assessment                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Marine Non-native Species: Scotland has a growing problem with marine invasive non-native species, which threaten marine biodiversity and more (NatureScot, 2026) | Provides guidance on marine INNS known to threaten Scottish marine waters.                                                             |
| Code of Practice on Non-native Species (Scottish Government, 2012)                                                                                                | Provides practical good practice guidance on INNS in Scotland, including responsibilities under the Wildlife and Countryside Act 1981. |

## 6.3 Consultation

428. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to intertidal and benthic ecology for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to intertidal and benthic ecology are provided in **Table 6.2**.

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**Table 6.2: Consultation Relevant to Intertidal and Benthic Ecology**

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How Comment has been Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the approach to study area and baseline?</u></b><br>NatureScot agree with the suggested buffer of 10 km around the OfTDA, however they advise that this buffer should cover the maximum spring tidal excursion distance/tidal ellipse. If possible, site-specific surveys should be completed and included within the Scoping Report.                                                                                                                                                                                                                                                         | Noted. <b>Section 6.4.1</b> presents the intertidal and benthic ecology study area adopted for the <b>Bellrock OfTDA Scoping Report</b> . The intertidal and benthic ecology study area will be refined for the Bellrock OfTDA EIA Report based on the Bellrock OfTDA, and the zone of influence (ZoI) (study area buffer) will be reviewed and updated based on the detail provided in <b>Chapter 5: Marine Geology, Oceanography, and Physical Processes</b> on the ZoI for changes to suspended sediment concentrations (SSC) and tidal excursion distances.<br><br>The proposed approach to site-specific surveys is presented in <b>Section 6.4.2.1</b> .                                                                                                                                                                                                                                   |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the identified key receptors?</u></b><br>NatureScot agree with the identified key receptors. All identified ecological features from the WFDA EIA (e.g. Chapter 7, Section 7.6.3) should be included within the OfTDA assessment, including ocean quahog <i>Arctica islandica</i> , phosphorescent sea pen <i>Pennatula phosphorea</i> , offshore subtidal sands and gravels, burrowed mud, and offshore deep-sea muds.                                                                                                                                                                       | Noted. Due to the overlap between the Bellrock OfTDA Scoping Boundary and the Bellrock WFDA, all relevant IEFs identified within Chapter 7: Benthic Ecology of the <b>Bellrock WFDA EIA Report</b> (Bellrock Offshore Wind Farm Limited, 2026) have been included within the baseline characterisation presented in <b>Section 6.4.3</b> of this <b>Bellrock OfTDA Scoping Report</b> . These features will be considered during the identification of IEFs for the intertidal and benthic ecology assessment in the Bellrock OfTDA EIA and, where relevant, will be taken forward for detailed assessment.                                                                                                                                                                                                                                                                                      |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b><br>NatureScot largely agree with the potential impacts scoped in/out, with the following comments:<br><br>Permanent habitat loss is scoped out for construction; NatureScot disagree with this, because as soon as infrastructure is installed (during the construction phase) habitat is permanently lost. As such, NatureScot advise permanent habitat loss is scoped in for construction.<br><br>Permanent habitat loss is scoped out for decommissioning; however, NatureScot note that this depends on whether any infrastructure will | Noted. It is recognised that permanent habitat loss and colonisation of artificial hard substrates associated with installed infrastructure commences during the construction phase as infrastructure is installed. However, as the spatial extent of these impacts will progressively increase throughout construction until the full infrastructure footprint is established, the assessment of these impacts will be undertaken once during the O&M phase ( <b>Section 6.6.2.2</b> and <b>Section 6.6.2.7</b> ). This approach, which is further detailed in <b>Section 6.5.1</b> , avoids duplication of assessment across development phases and recognises that permanent habitat loss and colonisation of artificial hard substrate initiated during construction is maintained throughout O&M and, where infrastructure remains in-situ, decommissioning, rather than representing a new |

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How Comment has been Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   | <p>be left on the seafloor. Considering the early stage of the OfTDA, NatureScot advise that permanent habitat loss is scoped out for decommissioning until further detail is known.</p> <p>In-line with their advice on the Bellrock WFDA, NatureScot advise that the introduction and/or spread of marine INNS is scoped in for all phases of the project.</p> <p>NatureScot recommend that the colonisation of artificial hard substrates associated with installed infrastructure is scoped in for construction, in addition to O&amp;M, for the same reasons given above for permanent habitat loss. As soon as infrastructure is within the water column, it has the potential to be colonised. Similarly, this impact could also be present during the decommissioning phase if some infrastructure is left in-situ. Given this, NatureScot advise that this impact is scoped in for decommissioning until it is known that all structures will be removed, fully.</p> <p>Electromagnetic fields (EMF) generated by energised subsea cables is currently scoped out. NatureScot disagree with the scoping out of this potential impact and advise it is scoped in for the O&amp;M phase of the project due to the volume of cables proposed within the OfTDA. This is particularly important since the proposed burial depth and voltage of cables has not yet been determined. For the same reasons, they advise that emissions from energised subsea cables is considered for the O&amp;M phase.</p> | <p>impact pathway. This is considered the most proportionate method of presenting the impact.</p> <p>Potential impacts associated with the removal of infrastructure during decommissioning will be considered separately through the assessment of loss of artificial hard substrate habitat due to removal of infrastructure (<b>Section 6.6.3.7</b>).</p> <p>The potential introduction and/or spread of marine INNS (<b>Section 6.6.1.5</b>, <b>Section 6.6.2.6</b>, and <b>Section 6.6.3.5</b>), EMF generated by energised subsea cables (<b>Section 6.6.2.8</b>), and thermal emissions from energised subsea cables (<b>Section 6.6.2.9</b>) has been scoped within this Chapter, supported by embedded mitigation measures (<b>Section 6.5.4</b>). Based on available evidence and mitigation, it is considered that these impact pathways can be effectively managed and therefore it is proposed that these impact pathways can be scoped out, as set out in the scoping assessment.</p> <p>However, in response to this NatureScot's advice these impact pathways have been preliminarily scoped in on a precautionary basis. NatureScot are invited to review the rationale for scoping out these impact pathways, as presented in <b>Section 6.6.1.5</b>, <b>Section 6.6.2.6</b>, <b>Section 6.6.3.5</b>, <b>Section 6.6.2.8</b>, and <b>Section 6.6.2.9</b>. Should NatureScot agree that this justification is sufficient, these impact pathways will be scoped out of the Bellrock OfTDA EIA. If not, the precautionary scoped in position will be retained for the purposes of the EIA.</p> |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the impact assessment?</u></b></p> <p>NatureScot agree with the proposed approach for the impact assessment. However, they advise against focusing on 'habitat type and ecological value; and conservation status and policy protection' to scope sensitivity which should instead focus on resistance and resilience for benthic receptors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Noted. The Bellrock OfTDA EIA will identify IEFs in accordance with the methodology set out in <b>Section 6.7.1</b>, which aligns with CIEEM guidance (2018).</p> <p>The sensitivity of each IEF to relevant impact pathways will be determined separately in accordance with the methodology presented in <b>Section 6.7.2</b>, based on the resistance and resilience of the IEF to each impact.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## 6.4 Existing Environment

### 6.4.1 Study Area

429. The intertidal and benthic ecology study area comprises the Bellrock OfTDA Scoping Boundary with a buffer of 10 km (**Figure 6.1 (Appendix A (Volume 1))**). The 10 km buffer has been defined on a precautionary basis to encompass the maximum predicted spring tidal excursion distance and potential ZOI associated with the dispersion of suspended sediments. The appropriateness of the study area will be reviewed and refined as required based on updated information presented in the Marine Geology, Oceanography, and Physical Processes chapter for the Bellrock EIA Report.
430. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to define the Bellrock OfTDA. The intertidal and benthic ecology study area will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4 of Chapter 1: Introduction**).

### 6.4.2 Data and Information Sources

431. Baseline data for the intertidal and benthic ecology assessment have been reviewed from the sources listed in **Table 6.3** to inform the identification of key habitats, species, and potential sensitivities within the intertidal and benthic ecology study area. These data will be reviewed and analysed in further detail to support the Bellrock OfTDA EIA. In addition to these sources, consultation with relevant stakeholders has been undertaken to inform the scoping process and will continue where necessary throughout project development (see **Section 6.3**).

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**Table 6.3: Summary of Key Data and Information Sources for Intertidal and Benthic Ecology**

| <b>Data Source</b>                                                                                                | <b>Temporal Coverage</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| European Marine Observation and Data Network (EMODnet) bathymetry (EMODnet, various(a))                           | N/A                      | European scale bathymetric dataset providing general seabed depth and morphology information. Suitable for understanding broad bathymetric features along the Bellrock OFTDA.                                                                                                                                                                                                                       |
| EMODnet geology (EMODnet, various(b))                                                                             | N/A                      | Dataset providing broad scale information on seabed substrate, marine minerals, and sea-floor geology. Suitable for understanding seabed composition and geological setting along the Bellrock OFTDA.                                                                                                                                                                                               |
| EMODnet seabed habitats (EUSeaMap) (EMODnet, various(c))                                                          | N/A                      | Dataset providing modelled broad scale seabed habitat maps across European waters, including substrate type, biological zone, energy levels, and associated European Nature Information System (EUNIS) codes and habitat descriptions. Suitable for identifying predicted habitat types along the Bellrock OFTDA and supporting baseline characterisation.                                          |
| JNCC UK Atlas of Seabed Habitats (UKASH) – Combined Map (JNCC, 2025)                                              | N/A                      | This map combines detailed local seabed habitat data with the broad-scale UKSeaMap Predictive Map, which models seabed habitats using physical environmental factors across UK waters. The dataset fills gaps in local data to provide near-complete seabed habitat coverage. The dataset offers a good balance of detail and coverage for baseline benthic characterisation in the Bellrock OFTDA. |
| British Geological Survey (BGS) GeoIndex Offshore (BGS, 2025)                                                     | N/A                      | An online mapping tool that provides access to a range of marine geoscience data, primarily focusing on shallow geology and geophysics. The dataset provides information on sediment classification and bedrock geology. Suitable for understanding the seabed composition and geology along the Bellrock OFTDA.                                                                                    |
| OSPAR Quality Status Report – Region II (Greater North Sea) (OSPAR, 2023)                                         | N/A                      | Provides an assessment of contaminant concentrations in seabed sediments and the overall pollution status of the Greater North Sea. Relevant for evaluating sediment quality and potential pollution risk along the Bellrock OFTDA.                                                                                                                                                                 |
| Centre for Environment, Fisheries and Aquaculture Science (Cefas) suspended sediment concentrations (Cefas, 2016) | 1998-2015                | Provides satellite derived climatologies (1998 to 2015) of non-algal suspended particulate matter across UK shelf waters. Suitable for understanding seasonal and regional patterns in turbidity and informing baseline sediment dynamics within the Bellrock OFTDA.                                                                                                                                |
| United Kingdom Hydrographic Office (UKHO) seabed mapping service (UKHO, 2025)                                     | N/A                      | Provides access to UKHO collated and validated bathymetric datasets, including multibeam and single beam survey data, where available. This seabed mapping service offers a useful resource for understanding seabed topography and depth variability along the Bellrock OFTDA.                                                                                                                     |

| Data Source                                                                                                                            | Temporal Coverage | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot SiteLink map (NatureScot, 2025)                                                                                             | N/A               | Interactive mapping tool providing access to spatial and descriptive data on Scotland's protected areas, including site boundaries, designated features, and supporting documents. Useful for identifying designated sites within the vicinity of the Bellrock OfTDA.                                                                                                                                                             |
| JNCC Marine Protected Area (MPA) Mapper (JNCC, 2024)                                                                                   | N/A               | Interactive mapping tool providing spatial and feature data for all UK MPAs, including offshore and inshore sites. Provides access to designated site boundaries and associated conservation features. Suitable for understanding the presence of MPAs within the vicinity of the Bellrock OfTDA.                                                                                                                                 |
| Geodatabase of Marine features adjacent to Scotland (GeMS) (NatureScot and JNCC, 2026)                                                 | Various           | Dataset collated by NatureScot and JNCC, GeMS provides spatial records of Priority Marine Features (PMFs), Annex I habitats, and large-scale features of functional significance in Scottish waters. It serves as a core evidence base supporting the Scottish ncMPA network. Suitable for understanding the presence of ecologically important habitats and species within and near the Bellrock OfTDA.                          |
| National Biodiversity Network Atlas – biological records (National Biodiversity Network, 2025)                                         | Various           | Dataset provides a comprehensive source of species occurrence records across the UK, including marine and coastal species. Suitable for understanding species distributions within the vicinity of the Bellrock OfTDA.                                                                                                                                                                                                            |
| Cefas OneBenthic Baseline Tool (Cefas, 2017)                                                                                           | Various           | Tool providing access to the OneBenthic database, which contains standardised benthic macrofaunal data from grab and core samples (typically 0.1 m <sup>2</sup> ) collected across UK waters. Includes faunal cluster classifications derived from these samples, supporting regional characterisation of benthic assemblages and providing context for site-specific baseline conditions.                                        |
| A big data approach to macrofaunal baseline assessment, monitoring and sustainable exploitation of the seabed (Cooper and Barry, 2017) | N/A               | Study presenting a standardised dataset of benthic macrofauna and sediments derived from 33,198 samples across 777 grab surveys. Used to identify spatial and temporal patterns in faunal distribution across the UK, and the influence of sediment composition and other variables. Supports understanding of natural variability and informs assessment of benthic recovery and sustainability of seabed-disturbing activities. |

| Data Source                                                                                                                                     | Temporal Coverage | Description                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biological-based habitat classification approaches promote cost-efficient monitoring: An example using seabed assemblages (Cooper et al., 2019) | N/A               | Study comparing habitat classification approaches based on physical characteristics (including EUNIS) and macrofaunal assemblages using large benthic datasets. Evaluates variability in benthic communities and implications for monitoring, demonstrating that biologically derived classifications can reduce within-class variability and the sampling effort required to detect ecological change. |
| Marine Evidence-Based Sensitivity Assessments (MarESA) (Tyler-Walters et al., 2023)                                                             | N/A               | Evidence based resource providing sensitivity assessments of marine habitats and species to a range of anthropogenic pressures. Supports interpretation of potential impacts and subsequent effects on benthic receptors and informs impact assessment.                                                                                                                                                 |
| Feature Activity Sensitivity Tool (FeAST) (FeAST Working Group, 2026)                                                                           | N/A               | Tool providing sensitivity information for Scottish marine features, including PMFs, to human activities. Supports assessment of potential impacts on benthic habitats and species in Scottish waters.                                                                                                                                                                                                  |
| Descriptions of Scottish Priority Marine Features (Tyler-Walters, et al., 2016)                                                                 | N/A               | Provides detailed descriptions, distribution, and conservation importance of PMFs in Scottish waters, including benthic habitats and species.                                                                                                                                                                                                                                                           |
| Publicly available consent application and environmental survey data from offshore wind farm and marine infrastructure projects.                | Various           | Review of publicly available environmental data and technical reports from offshore wind farm, subsea cable, and other marine infrastructure projects within and adjacent to the intertidal and benthic ecology study area, where relevant to informing the intertidal and benthic ecology baseline and impact assessment.                                                                              |

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### 6.4.2.1 Site-specific Surveys

432. Site-specific surveys undertaken in 2023 within the Bellrock WFDA, which partially overlaps with the Bellrock OfTDA Scoping Boundary, will be used to inform the baseline characterisation where spatially relevant (**Table 6.4**).
433. In addition, site-specific environmental and geophysical surveys will be undertaken within the remaining Bellrock OfTDA in 2026, as noted in **Table 6.4**.
434. Subject to survey progress, the geophysical survey data collected within the remainder of the Bellrock OfTDA (i.e. the area outside the overlap with the Bellrock WFDA) may also be used to further inform the intertidal and benthic ecology baseline. Should the geophysical survey data not be available to inform the EIA, the assessment will rely on existing available datasets and publicly available information sources. The environmental survey (grab sampling and drop-down camera) will be used to characterise seabed habitats and benthic communities within the Bellrock OfTDA.
435. The combined use of existing Bellrock WFDA survey data and targeted Bellrock OfTDA surveys will ensure sufficient spatial coverage to inform the intertidal and benthic ecology baseline and assessment.
436. **Table 6.4** summarises the surveys relevant to intertidal and benthic ecology that have been, or will be, undertaken to inform the baseline.

**Table 6.4: Site-specific Surveys Relevant to Intertidal and Benthic Ecology**

| Survey Name                                                                                                       | Survey Coverage | Survey Year | Description                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------|-----------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bellrock WFDA geophysical survey, e.g. Side-Scan Sonar and Multi-Beam Echosounder                                 | Bellrock WFDA   | 2023        | <p>The geophysical survey was used to help inform the broadscale habitat mapping of the Bellrock WFDA and provide context to the intertidal and benthic ecology baseline.</p> <p>Multi-Beam Echosounder was used to obtain high resolution bathymetry data to map the seabed and its features, whilst the Side-Scan Sonar is used to provide information of the texture and nature of the seabed to identify bedforms and geological features.</p> |
| Bellrock WFDA environmental survey, (grab sampling and drop-down camera, including sediment contaminant analysis) | Bellrock WFDA   | 2023        | <p>Benthic survey data from the Bellrock WFDA will help to provide context on the habitats and species present in the Bellrock OfTDA which overlaps the WFDA, and this will provide context to the intertidal and benthic ecology baseline.</p> <p>In addition, grab samples taken within the Bellrock WFDA have been assessed against Cefas Action Levels and will be used to inform the baseline.</p>                                            |

| Survey Name                                                                                                       | Survey Coverage                                    | Survey Year | Description                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bellrock WFDA environmental DNA (eDNA) water samples                                                              | Bellrock WFDA                                      | 2023        | eDNA samples have been collected from the Bellrock WFDA and these will be used to provide context to the baseline characterisation.                                                                                                                                                                                                      |
| Bellrock OfTDA geophysical survey                                                                                 | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | The geophysical survey will be used to help inform the broadscale habitat mapping of the Bellrock OfTDA and provide context to the intertidal and benthic ecology baseline.                                                                                                                                                              |
| Bellrock OfTDA environmental survey (grab sampling and drop-down camera, including sediment contaminant analysis) | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | Benthic survey data from the Bellrock OfTDA will help to provide context on the habitats and species present in the Bellrock OfTDA, and this will provide context to the intertidal and benthic ecology baseline.<br><br>In addition, grab samples will be assessed against Cefas Action Levels and will be used to inform the baseline. |
| Bellrock OfTDA eDNA water samples                                                                                 | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | eDNA samples will be collected from the Bellrock OfTDA, and these will be used to provide context to the baseline characterisation.                                                                                                                                                                                                      |

### 6.4.3 Baseline Condition

437. IEFs for intertidal and benthic ecology will be identified and defined in the EIA in accordance with the CIEEM guidance (2018). IEFs are those ecological features, habitats and species, that are considered important and potentially affected by the project. Features that are widespread, unthreatened, and resilient to project impacts, and that will remain viable and sustainable, do not require detailed assessment, although efforts will still be made to safeguard biodiversity.
438. The rationale for identifying IEFs will be explained in the EIA to demonstrate a robust selection process, considering factors such as conservation status, rarity, and sensitivity to impacts. The identification of IEFs allows for a focused and proportionate assessment. The preliminary baseline presented in this section provides an overview of habitats and species that may be considered as IEFs, which will be refined following detailed review of the full suite of available data, including the site-specific surveys.

#### 6.4.3.1 Inshore Intertidal and Benthic Ecology (0 nm to 12 nm)

439. The inshore section of the intertidal and benthic ecology study area spans a diverse range of benthic environments. Habitat information from UKASH (JNCC, 2025) indicates the presence of multiple habitat types, as detailed in **Table 6.5** and **Figure 6.2 (Appendix A (Volume 1))**. Within the inshore section of the intertidal and benthic ecology study area, A5.2 and A5.1 are the most widespread habitat types, reflecting the dominance of circalittoral sand and coarse sediment habitats in the area.

Table 6.5: Summary of Benthic Habitat Types Within the Inshore Environment

| EUNIS Code                         | Level   | Habitat Name                                                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Infralittoral Rock Habitats</b> |         |                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| A3.1                               | Level 3 | Atlantic and Mediterranean high energy infralittoral rock                                                                       | Rocky habitats in the infralittoral zone subject to exposed to extremely exposed wave action or strong tidal streams. Typically, the rock supports a community of kelp <i>Laminaria hyperborea</i> with foliose seaweeds and animals, the latter tending to become more prominent in areas of strongest water movement. The depth to which the kelp extends varies according to water clarity, exceptionally reaching 45 m. The sublittoral fringe is characterised by dabberlocks <i>Alaria esculenta</i> .                                                                                                                                                                                                                                                                                           |
| A3.2                               | Level 3 | Atlantic and Mediterranean moderate energy infralittoral rock                                                                   | Predominantly moderately wave-exposed bedrock and boulders, subject to moderately strong to weak tidal streams. On the bedrock and stable boulders there is typically a narrow band of kelp <i>Laminaria digitata</i> in the sublittoral fringe which lies above a <i>Laminaria hyperborea</i> forest and park. Associated with the kelp are communities of seaweeds, predominantly reds and including a greater variety of more delicate filamentous types than found on more exposed coasts.                                                                                                                                                                                                                                                                                                         |
| A3.31                              | Level 4 | Silted kelp on low energy infralittoral rock with full salinity                                                                 | Infralittoral rock in wave and tide-sheltered conditions, supporting silty communities with <i>Laminaria hyperborea</i> and/or <i>Saccharina latissima</i> . Associated seaweeds are typically silt-tolerant and include a high proportion of delicate filamentous types. Some areas, particularly in the lower infralittoral zone, are subject to intense grazing by urchins and chitons and may have poorly developed seaweed communities.                                                                                                                                                                                                                                                                                                                                                           |
| <b>Circalittoral Rock Habitats</b> |         |                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| A4.1                               | Level 3 | Atlantic and Mediterranean high energy circalittoral rock                                                                       | Occurs on extremely wave-exposed to exposed circalittoral bedrock and boulders subject to tidal streams ranging from strong to very strong. Typically found in tidal straits and narrows. The high energy levels found within this habitat complex are reflected in the fauna recorded. Sponges such as <i>Pachymatisma johnstonia</i> , <i>Halichondria panicea</i> , <i>Esperiopsis fucorum</i> and <i>Myxilla incrustans</i> may all be recorded. Characteristic of this habitat complex is the dense 'carpet' of the hydroid <i>Tubularia indivisa</i> . The barnacle <i>Balanus crenatus</i> is recorded in high abundance on the rocky substrata. On rocky outcrops, <i>Alcyonium digitatum</i> is often present.                                                                                |
| A4.21/A4.22/A4.23/A4.24            | Level 4 | Echinoderms and crustose communities on circalittoral rock/<br><i>Sabellaria</i> reefs on circalittoral rock/<br>Communities on | Mapped as a mosaic of habitats, comprising the following EUNIS Level 4 habitat types: <ul style="list-style-type: none"> <li><b>A4.21:</b> This habitat type occurs on wave-exposed, moderately strong to weakly tide-swept, circalittoral bedrock and boulders. Echinoderms, faunal <i>Parasmittina trispinosa</i> and algal crusts (red encrusting algae) dominate this biotope, giving a sparse appearance. Typical echinoderms present are the starfish <i>Asterias rubens</i>, the brittlestar <i>Ophiothrix fragilis</i> and the sea urchin <i>Echinus esculentus</i>. There may be isolated clumps of the hydroids <i>Nemertesia antennina</i> and <i>Abietinaria abietina</i>, <i>Alcyonium digitatum</i>, the anemone <i>Urticina felina</i> and the cup coral <i>Caryophyllia</i></li> </ul> |

| EUNIS Code | Level   | Habitat Name                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------|---------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |         | soft circalittoral rock/ Mussel beds on circalittoral rock | <p><i>smithii</i>. Other species present may include the polychaete <i>Pomatoceros triqueter</i> and the top shell <i>Calliostoma zizphinum</i>;</p> <ul style="list-style-type: none"> <li>▪ <b>A4.22:</b> This habitat type occurs on moderately wave-exposed, circalittoral bedrock, boulders and cobbles subject to moderately strong tidal streams. It is characterised by dense crusts of the polychaete <i>Sabellaria spinulosa</i> covering the substratum. Other fauna present in many cases reflects the biotopes found on nearby rock, so to a certain extent, is quite variable. Species typically present include the bryozoans <i>Flustra foliacea</i>, <i>Alcyonidium diaphanum</i> and <i>Pentapora foliacea</i>, the hydroid <i>Nemertesia antennina</i>, the sponges <i>Tethya aurantium</i> and <i>Phorbas fictitius</i>, the anemones <i>Urticina felina</i> and <i>Sagartia elegans</i>, and the ascidians <i>Distomus variolosus</i>, <i>Polycarpa pomaria</i> and <i>Polycarpa scuba</i>. The barnacle <i>Balanus crenatus</i>, the polychaetes <i>Pomatoceros triqueter</i> and <i>Salmacina dysteri</i>, the starfish <i>Crossaster papposus</i>, and <i>Alcyonium digitatum</i> may also be recorded;</li> <li>▪ <b>A4.23:</b> This habitat type occurs on moderately wave-exposed, circalittoral soft bedrock subject to moderately strong tidal streams. As this complex is found in highly turbid water conditions, the circalittoral zone may begin at the low water mark, due to poor light penetration. This complex is dominated by the piddock <i>Pholas dactylus</i>. Other species typical of this complex include the polychaete <i>Polydora</i> and <i>Bispira volutacornis</i>, the sponges <i>Cliona celata</i> and <i>Suberites ficus</i>, the bryozoan <i>Flustra foliacea</i>, <i>Alcyonium digitatum</i>, the starfish <i>Asterias rubens</i>, the mussel <i>Mytilus edulis</i> and the crab <i>Necora puber</i> and <i>Cancer pagurus</i>. Foliose red algae may also be present; and</li> <li>▪ <b>A4.24:</b> This habitat type occurs on moderately wave-exposed upper circalittoral bedrock subject to strong or moderately strong tidal streams. This complex is characterised by dense aggregations of the mussels <i>Mytilus edulis</i> or <i>Musculus discors</i> carpeting the underlying substrata. Sponges that may be recorded in this complex are <i>Scypha ciliata</i>, <i>Tethya aurantium</i>, <i>Pachymatisma johnstonia</i>, <i>Dysidea fragilis</i> and <i>Cliona celata</i>. A sparse hydroid/bryozoan turf composed primarily of <i>Nemertesia antennina</i>, <i>Alcyonidium diaphanum</i> and <i>Flustra foliacea</i> is often recorded. Anemones present are <i>Urticina felina</i> and <i>Sagartia elegans</i>. Other species recorded are the crabs <i>Cancer pagurus</i>, <i>Carcinus maenas</i> and <i>Necora puber</i>, the starfish <i>Crossaster papposus</i> and <i>Asterias rubens</i>, and <i>Alcyonium digitatum</i> and in this upper circalittoral complex, algae species such as <i>Dictyota dichotoma</i>, <i>Cryptopleura ramosa</i> and <i>Plocamium cartilagineum</i>.</li> </ul> |
| A4.3       | Level 3 | Atlantic and Mediterranean low energy circalittoral rock   | Occurs on wave-sheltered circalittoral bedrock and boulders subject to mainly weak/very weak tidal streams. The biotopes identified within this habitat type are often dominated by encrusting red algae, brachiopods <i>Neocrania anomala</i> and ascidians <i>Ciona intestinalis</i> and <i>Ascidia mentula</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| EUNIS Code                           | Level   | Habitat Name                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------|---------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sublittoral Sediment Habitats</b> |         |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| A5.14                                | Level 4 | Circalittoral coarse sediment                     | Tide-swept circalittoral coarse sands, gravel and shingle generally in depths of over 15 to 20 m. This habitat may be found in tidal channels of marine inlets, along exposed coasts and offshore. This habitat, as with shallower coarse sediments, may be characterised by robust infaunal polychaetes, mobile crustacea and bivalves. Certain species of sea cucumber (e.g. <i>Neopentadactyla</i> ) may also be prevalent in these areas along with the lancelet <i>Branchiostoma lanceolatum</i> .                                                                                                                                                                                                                                                                                                                                                            |
| A5.15                                | Level 4 | Deep circalittoral coarse sediment                | Offshore (deep) circalittoral habitats with coarse sands and gravel or shell. This habitat may cover large areas of the offshore continental shelf although there is relatively little quantitative data available. Such habitats are quite diverse compared to shallower versions of this habitat and generally characterised by robust infaunal polychaete and bivalve species. Animal communities in this habitat are closely related to offshore mixed sediments and in some areas settlement of <i>Modiolus modiolus</i> larvae may occur and consequently these habitats may occasionally have large numbers of juvenile <i>M. modiolus</i> . In areas where the mussels reach maturity their byssus threads bind the sediment together, increasing stability and allowing an increased deposition of silt leading to the development of the biotope A5.622. |
| A5.22                                | Level 4 | Sublittoral sand in variable salinity (estuaries) | Clean sands that occur in the upper reaches of marine inlets, especially estuaries, where water movement is moderately strong, allowing the sedimentation of sand but not the finer silt fraction. The habitat typically lacks a significant seaweed component and is characterised by brackish-water tolerant fauna, particularly amphipods, polychaetes and mysid shrimps.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| A5.23                                | Level 4 | Infralittoral fine sand                           | Clean sands which occur in shallow water, either on the open coast or in tide-swept channels of marine inlets. The habitat typically lacks a significant seaweed component and is characterised by robust fauna, particularly amphipods ( <i>Bathyporeia</i> ) and robust polychaetes including <i>Nephtys cirrosa</i> and <i>Lanice conchilega</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| A5.25                                | Level 4 | Circalittoral fine sand                           | Clean fine sands with less than 5% silt/clay in deeper water, either on the open coast or in tide-swept channels of marine inlets in depths of over 15 to 20 m. The habitat may also extend offshore and is characterised by a wide range of echinoderms (in some areas including the pea urchin <i>Echinocyamus pusillus</i> ), polychaetes and bivalves. This habitat is generally more stable than shallower, infralittoral sands and consequently supports a more diverse community.                                                                                                                                                                                                                                                                                                                                                                           |
| A5.26                                | Level 4 | Circalittoral muddy sand                          | Circalittoral non-cohesive muddy sands with the silt content of the substratum typically ranging from 5% to 20%. This habitat is generally found in water depths of over 15 to 20 m and supports animal-dominated communities characterised by a wide variety of polychaetes, bivalves such as <i>Abra alba</i> and <i>Nucula nitidosa</i> , and echinoderms such as <i>Amphiura</i> spp. and <i>Ophiura</i> spp., and <i>Astropecten irregularis</i> . These circalittoral habitats tend to be more stable than their infralittoral counterparts and as such support a richer infaunal community.                                                                                                                                                                                                                                                                 |

| EUNIS Code | Level   | Habitat Name            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|---------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A5.27      | Level 4 | Deep circalittoral sand | Offshore (deep) circalittoral habitats with fine sands or non-cohesive muddy sands. Very little data is available on these habitats however they are likely to be more stable than their shallower counterparts and characterised by a diverse range of polychaetes, amphipods, bivalves and echinoderms.                                                                                                                                                                                                                                                                                                               |
| A5.35      | Level 4 | Circalittoral sandy mud | Circalittoral, cohesive sandy mud, typically with over 20% silt/clay, generally in water depths of over 10 m, with weak or very weak tidal streams. This habitat is generally found in deeper areas of bays and marine inlets or offshore from less wave exposed coasts. Sea pens such as <i>Virgularia mirabilis</i> and brittlestars such as <i>Amphiura spp.</i> are particularly characteristic of this habitat whilst infaunal species include the tube building polychaetes <i>Lagis koreni</i> and <i>Owenia fusiformis</i> , and deposit feeding bivalves such as <i>Mysella bidentata</i> and <i>Abra spp.</i> |
| A5.37      | Level 4 | Deep circalittoral mud  | In mud and cohesive sandy mud in the offshore circalittoral zone, typically below 50 to 70 m, a variety of faunal communities may develop, depending upon the level of silt/clay and organic matter in the sediment. Communities are typically dominated by polychaetes but often with high numbers of bivalves such as <i>Thyasira spp.</i> , echinoderms and foraminifera.                                                                                                                                                                                                                                            |

440. Annex I reef habitats within the intertidal and benthic ecology study area are limited to geogenic reefs (Habitats Directive Annex I code 1170), forming a narrow band of bedrock/stony reef extending to approximately 1 km from the coastline (Duncan et al., 2022). In addition, publicly available data (NatureScot and JNCC, 2026) also indicate the potential presence of Annex I sandbanks which are slightly covered by sea water all the time (Code: 1110) within the northwestern portion of the intertidal and benthic ecology study area (see **Figure 6.3 (Appendix A (Volume 1))**).
441. No PMFs have been identified within the inshore area based on publicly available data. However, UKASH (JNCC, 2025) data indicate the presence of A4.22 (Sabellaria reefs on circalittoral rock), suggesting the potential for *Sabellaria spinulosa* reef. This is supported by habitat suitability modelling (Castle et al., 2022), which indicates moderate suitability for *S. spinulosa* reefs within the nearshore region (**Figure 6.4 (Appendix A (Volume 1))**), broadly aligning with the mapped extent of Annex I reef habitat.
442. A Preliminary Ecological Appraisal was undertaken in April 2026 in the intertidal area of the coastal zone. Results from the Preliminary Ecological Appraisal identified the following habitats:
- Splash zone with lichens (UKHab code t1e);
  - Other littoral rock (UKHab code t1f); and
  - Beach (UKHab code t2h).
443. The planned Bellrock OFTDA environmental surveys will provide further site-specific data to refine the baseline understanding of benthic habitats and species.
444. The preliminary baseline identifies Annex I reef habitats (including potential biogenic reefs), alongside the wider benthic habitat types presented in **Table 6.5**, as key ecological components of the inshore benthic environment to be considered in the assessment. Specific IEFs for the EIA will be defined following detailed review of site-specific survey data and further interrogation of the publicly available data sources (**Table 6.3**).

#### **6.4.3.2 Offshore Intertidal and Benthic Ecology (12 nm to 200 nm)**

445. The benthic habitat types identified within the offshore section of the intertidal and benthic ecology study area are broadly similar to those recorded in the inshore environment and are presented in **Table 6.5** and **Figure 6.2 (Appendix A (Volume 1))**. This comprise A3.1, A3.2, A3.31, A4.3, A5.14, A5.15, A5.23, A5.25, A5.26, A5.27, and A5.37, with the addition of A5.45 (deep circalittoral mixed sediments) identified within the offshore area.
446. As with the inshore area, the offshore benthic environment is dominated by sedimentary habitats, with A5.27 and A5.15 representing the most widespread habitat types within the offshore section of the intertidal and benthic ecology study area.
447. GeMS data (NatureScot and JNCC, 2026) indicate the presence of two PMF habitats within the offshore section of the intertidal and benthic ecology study area: offshore deep sea muds and offshore subtidal sands and gravels (see **Figure 6.3 (Appendix A (Volume 1))**). The offshore subtidal sands and gravels PMF is widespread across the offshore area of the intertidal and benthic



ecology study area, reflecting its broad distribution within the UK offshore marine environment, whereas the offshore deep sea muds PMF is more spatially constrained. The **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) also identified offshore deep sea muds, offshore subtidal sands and gravels, and burrowed mud within the Bellrock WFDA, which overlaps with the Bellrock OfTDA Scoping Boundary and offshore section of the intertidal and benthic ecology study area.

448. GeMS data (NatureScot and JNCC, 2026) also indicate the presence of ocean quahog within the southern extent of the intertidal and benthic ecology study area, associated with the Firth of Forth Banks Complex Nature Conservation Marine Protected Area (ncMPA). Ocean quahog were also recorded within the Bellrock WFDA environmental survey (grab sample survey), with 73 individuals identified across three of 113 sampling stations. Individuals were predominantly juvenile and distribution was patchy across the survey area. The phosphorescent sea pen was also recorded at 16 of 113 sampling stations, with a similarly patchy distribution; in isolation, the phosphorescent sea pen is of limited conservation importance where not associated with a PMF habitat.
449. It is recognised that grab sampling may underestimate the abundance and distribution of ocean quahog, particularly larger individuals that may occur deeper within the sediment. As such, subtidal sands and gravels will be considered a proxy for potential ocean quahog habitat within the impact assessment, recognising that this represents a precautionary approach.
450. The preliminary baseline identifies sediment-dominated habitats, PMF habitats and species as the main ecological components of the offshore benthic environment that will be considered in the EIA. IEFs will be defined during the EIA following detailed review of site-specific survey data and further interrogation of the publicly available data sources (**Table 6.3**).

#### 6.4.3.3 Designations

451. The Firth of Forth Banks Complex ncMPA is the only designated site with benthic features located within the intertidal and benthic ecology study area, as presented in **Table 6.6** and **Figure 6.5 (Appendix A (Volume 1))**. This site is located immediately to the south of the Bellrock OfTDA Scoping Boundary and has been avoided as part of the site selection process (see **Section 7.6 of Chapter 7: Fish and Shellfish Ecology**).
452. The benthic features of relevance to this assessment are ocean quahog aggregations and the PMF habitat offshore subtidal sands and gravels.
453. As outlined in **Section 6.4.1**, the Bellrock OfTDA will be refined to a discrete offshore export cable corridor. Therefore, the potential for connectivity with the ncMPA will be reviewed following finalisation of the cable corridor alignment, at which point the requirement for further assessment will be confirmed. The potential for connectivity with the ncMPA, and the requirement for further assessment, will be considered within the **Bellrock OfTDA MPA Screening Report in (Volume 3)**.



**Table 6.6: Summary of Designated Sites with Benthic Features within the Intertidal and Benthic Ecology Study Area**

| Site Name                    | Designation | Protected Features                                                                                                  | Distance to the Bellrock OfTDA Scoping Boundary                                                                              |
|------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Firth of Forth Banks Complex | ncMPA       | Ocean quahog aggregations, offshore subtidal sands and gravels, Quaternary of Scotland, and shelf banks and mounds. | Immediately adjacent, a section of the ncMPA boundary runs up to the southern extent of the Bellrock OfTDA Scoping Boundary. |

## 6.5 Potential Impacts

454. Potential impacts arising from the Bellrock Offshore Transmission Infrastructure during the construction, O&M, and decommissioning phases are outlined below and summarised in **Table 6.8**.
455. The sensitivity of benthic habitats and species will be assessed for each phase using a combination of expert judgement and established evidence bases, including the MarESA (Tyler-Walters et al., 2023) and FeAST (FeAST Working Group, 2026).
456. In addition, the potential for cumulative (**Section 6.6.5**) and transboundary (**Section 6.6.6**) impacts, as well as inter-relationships and interactions between impacts for the Bellrock Offshore Transmission Infrastructure, will also be determined and assessed.

### 6.5.1 Construction Phase

457. Potential impacts during the construction phase of the Bellrock Offshore Transmission Infrastructure may arise from activities associated with seabed preparation works and construction works. These include:
- Site preparation works<sup>30</sup> (including surveys, seabed preparation, unexploded ordnance (UXO) survey and/or clearance, debris clearance, and out of service cable/pipeline removal);
  - Installation of marine exist ducts for the trenchless technique for offshore export cables at landfall (**Section 3.5.2.1**);
  - Installation of OfSS(s) and OfRCS(s) (**Section 3.5.2.2**);
  - Installation of offshore export cables and interconnector cable(s) (**Section 3.5.2.3**); and
  - The use of vessels for site preparation and construction works (**Section 3.5.2.4**).

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<sup>30</sup> For the purposes of EIA, site preparation is assessed under construction works

458. These activities may result in the following potential impact pathways:
- Physical disturbance and temporary habitat loss of seabed habitats;
  - Increased SSCs and sediment deposition;
  - Remobilisation of existing contaminated sediments;
  - Accidental release of pollutants;
  - Introduction and/or spread of marine INNS; and
  - Underwater noise and vibration.
459. Impact pathways which commence during the construction phase and continue throughout the operational life of the Bellrock Offshore Transmission Infrastructure (e.g. permanent habitat loss and colonisation of artificial hard substrate associated with installed infrastructure) will be assessed as part of the O&M phase assessment, as this represents the point at which the maximum spatial extent of these impacts is reached following completion of installation activities. This approach recognises that these impacts are initiated during construction and may continue through O&M into decommissioning where infrastructure remains in situ, but that they represent a continuation of the same impact pathway rather than separate impacts for each development phase. This approach avoids unnecessary duplication of assessment across development phases.

## 6.5.2 Operation and Maintenance Phase

460. Potential impacts during the O&M phase of the Bellrock Offshore Transmission Infrastructure arise from both the long-term presence and operation of infrastructure on the seabed and periodic, planned and unplanned, maintenance activities.
461. The presence of infrastructure, including FBSSs for both the OfSS(s) and the OfRCS(s) and any associated scour protection, offshore export cables, interconnector cable(s) (where both offshore export cables and interconnector cable(s) are surface laid), and any associated cable protection, will result in permanent habitat loss and/or long-term modification of seabed habitats within the footprint of the infrastructure. In addition, the presence of energised offshore export cables and interconnectors will give rise to EMF and localised thermal emissions, which may influence benthic habitats and species in the immediate vicinity of the cable(s). Planned and unplanned maintenance activities, such as inspections, repair, and replacement works, may give rise to localised and temporary physical disturbance and habitat loss, similar in nature to that occurring during the construction phase, but typically of a smaller spatial extent and lower magnitude.
462. These activities may result in the following potential impact pathways:
- Physical disturbance and temporary habitat loss of seabed habitats;
  - Permanent habitat loss resulting from installation of seabed infrastructure;
  - Increased SSCs and sediment deposition;
  - Remobilisation of existing contaminated sediments;
  - Accidental release of pollutants;

- Introduction and/or spread of marine INNS;
- Colonisation of artificial hard substrate associated with installed infrastructure;
- EMF generated by energised subsea cables;
- Thermal emissions from energised subsea cables; and
- Underwater noise and vibration.

### 6.5.3 Decommissioning Phase

463. Potential impacts during the decommissioning phase of the Bellrock Offshore Transmission Infrastructure will depend on the final decommissioning strategy, including the extent to which infrastructure is removed or left in-situ.
464. Where infrastructure is removed, decommissioning activities are expected to result in localised seabed disturbance, broadly similar in nature to construction activities, although typically of reduced overall magnitude, as activities are likely to be more targeted (e.g. cutting and removal of infrastructure rather than site preparation works and construction works).
465. Where infrastructure is left in-situ (either partially or wholly), impacts associated with the continued presence of infrastructure are considered in the O&M phase and are not duplicated here.
466. Decommissioning activities may result in the following potential impact pathways:
- Physical disturbance and temporary habitat loss of seabed habitats;
  - Increased SSCs and sediment deposition;
  - Remobilisation of existing contaminated sediments;
  - Accidental release of pollutants;
  - Introduction and/or spread of marine INNS;
  - Underwater noise and vibration; and
  - Loss of artificial hard substrate habitat due to removal of infrastructure.

### 6.5.4 Embedded Mitigation Measures

467. Embedded mitigation has been identified, as presented in **Table 6.7** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Sustainability and Environmental Professionals guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.

468. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process during the EIA process.

**Table 6.7: Embedded Mitigation Measures Relevant to Intertidal and Benthic Ecology**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                        | Adoption of seabed preparation methods and equipment that minimises sediment suspension and dispersal will reduce the release of sediment into the water column, thereby limiting the extent and duration of sediment plumes and associated sediment deposition and reducing the potential for disturbance and smothering of benthic habitats and species. | Primary         |
| X                          | ✓   | X               | Offshore export cables and interconnector cable(s) will be installed with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to avoid the need for external cable protection. Cable protection will only be used where adequate burial cannot be achieved and will be minimised so far as reasonably practicable. The requirement for, and extent of, any cable protection will be determined through a post-consent Cable Burial Risk Assessment (CBRA) (see row below relating to the CBRA). | Installation of offshore export cables and interconnector cable(s) to a target burial depth will reduce the requirement for external cable protection, thereby minimising the extent of permanent seabed habitat loss and associated effects on benthic habitats and communities.                                                                          | Primary         |
| X                          | ✓   | X               | Scour protection (e.g. concrete mattresses, rock placement, grout bags, artificial frond mats), will prevent scour during the operational life of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                       | Installation of scour protection will prevent seabed erosion around the Bellrock Offshore Transmission Infrastructure during O&M, thereby minimising seabed disturbance to surrounding benthic habitats and communities.                                                                                                                                   | Primary         |
| X                          | ✓   | X               | Where an alternating current design is used, armoured 3-phase single core (trefoil arrangement) high voltage submarine cables will be used, to minimise both electric and magnetic fields. Offshore export cables and interconnector cable(s) will be buried or protected, with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to reduce the                                                                                                                                               | Use of armoured 3-phase single core cables in a trefoil arrangement together with the cable burial or protection will minimise the strength and spatial extent of EMFs and thermal emissions. Target cable burial depths and optimisation of trench dimensions will also reduce the extent of                                                              | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                            | Relevance to Assessment                                                                                                                                                                                                                                                                                                                               | Mitigation Type |
|----------------------------|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                       |                 |
|                            |     |                 | impact of EMFs and thermal emissions, and to minimise disturbance. Cable trench width may also vary to accommodate greater burial depths (subject to the conclusions of a CBRA), further minimising disturbance to habitats and species.                                                                                                                               | seabed disturbance thereby minimising potential effects on benthic habitats and species.                                                                                                                                                                                                                                                              |                 |
| ✓                          | X   | X               | Material displaced during cable burial activities will be backfilled, where necessary.                                                                                                                                                                                                                                                                                 | Backfilling displaced material will help restore seabed contours and characteristics following cable installation, reducing the extent and duration of seabed disturbance and supporting the recovery of benthic habitats and communities.                                                                                                            | Primary         |
| X                          | ✓   | X               | Subsea infrastructure will be subject to routine monitoring to ensure marine growth remains within design tolerance. Localised cleaning will be undertaken when marine growth is likely to exceed or reach design tolerance.                                                                                                                                           | Routine monitoring and localised cleaning of marine growth on submerged surfaces of the Bellrock Offshore Transmission Infrastructure will minimise the extent of maintenance activities required thereby limiting disturbance to surrounding benthic habitats and communities.                                                                       | Primary         |
| ✓                          | X   | X               | The Bellrock Offshore Transmission Infrastructure will comprise fixed-bottom OfSS(s) and fixed-bottom OfRCS(s). Floating substructures are not proposed.                                                                                                                                                                                                               | Use of fixed-bottom OfSS(s) and OfRCS(s) rather than floating substructure will avoid the need for moorings and anchors. This will reduce the extent of seabed disturbance and associated effects on benthic habitats and communities.                                                                                                                | Primary         |
| ✓                          | ✓   | X               | A detailed CBRA will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed. | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will reduce the extent of seabed disturbance and permanent habitat loss, thereby reducing potential impacts on benthic habitats and communities. | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                       | Relevance to Assessment                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | X   | X               | The Bellrock Offshore Transmission Infrastructure will be micro-sited, where practicable, to avoid sensitive seabed habitats, low or limited mobility benthic species, such as Annex I habitats and PMFs. Micro-siting will be informed by surveys prior to the commencement of construction which will identify the location and extent of habitats and species. | Micro-siting of the Bellrock Offshore Transmission Infrastructure will avoid sensitive benthic habitats and species where practicable, thereby minimising direct disturbance, habitat loss and associated effects on benthic habitats and communities, including Annex I habitats and PMFs.                                                | Primary         |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                                             | Periodic geophysical surveys and remedial works, where required, will maintain cable burial and minimise the extent of exposed offshore export cables/interconnector cable(s), thereby reducing potential long-term effects on benthic habitats and communities.                                                                           | Primary         |
| ✓                          | X   | X               | A trenchless technique will be used at the landfall to avoid direct disturbance to the intertidal and shallow subtidal environment, thereby reducing habitat loss and seabed disturbance.                                                                                                                                                                         | Use of a trenchless technique at the landfall will avoid direct disturbance to intertidal and shallow subtidal habitats, thereby minimising habitat loss and disturbance effects on benthic habitats and species within these sensitive nearshore environments.                                                                            | Primary         |
| ✓                          | ✓   | ✓               | Development of and adherence to a Cable Plan (CaP).<br>The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.                          | The CaP will ensure that cable routing, installation methods, burial requirements and any necessary protection measures are appropriately designed and managed. This will help minimise the extent of seabed disturbance and the requirement for cable protection, thereby reducing potential impacts on benthic habitats and communities. | Tertiary        |
| ✓                          | ✓   | X               | Development of and adherence to a Marine Pollution Contingency Plan (MPCP).                                                                                                                                                                                                                                                                                       | Implementation of a MPCP will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                    | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | The MPCP will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.                                                                                                                                                                                                                                                                                                                                                                                                             | This will reduce the potential for contamination-related effects on benthic habitats and communities.                                                                                                                                                                                                                                                                                        |                 |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                                                                                                 | Preparation and implementation of an Environmental Management Plan will provide a framework for the consistent application of environmental control and mitigation measures throughout construction and O&M, thereby reducing the potential for effects on benthic habitats and communities.                                                                                                 | Tertiary        |
| ✓                          | X   | X               | Development of a UXO Threat and Risk Assessment.<br>All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).                                                                                                                                                                                                                                                               | Development of an UXO Threat and Risk Assessment and application of a risk-based approach to any UXO detonation will minimise the requirement for, and scale of, UXO clearance, thereby reducing the potential for physical disturbance and associated effects on benthic habitats and communities.                                                                                          | Tertiary        |
| ✓                          | ✓   | X               | Preparation of an Invasive Non-native Species Management Plan (INNSMP) to include provisions for invasive non-native species management.<br>The INNSMP will implement biosecurity measures in line with international and national regulations and guidance, namely: <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments,</li> </ul> | Preparation and implementation of an INNSMP, including biosecurity measures in accordance with relevant legislation and guidance, will reduce the risk of introducing and spreading invasive non-native species. This will minimise the potential for adverse effects on benthic habitats and communities arising from competition, habitat modification and displacement of native species. | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | <p>which provides an international framework for the control of transfer of potentially invasive non-native species from ballast water; and</p> <ul style="list-style-type: none"> <li>Consideration of guidance from the International Maritime Organization (IMO) (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul>                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the IMO (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to international and national regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading invasive non-native species. This will minimise the potential for adverse effects on benthic habitats and communities arising from the establishment of invasive species. | Tertiary        |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme.</p> <p>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                                                                                                                                    | The Decommissioning Programme will provide a framework for managing the decommissioning of the Bellrock Offshore Transmission Infrastructure, helping to minimise seabed disturbance and associated effects on benthic habitats and communities during decommissioning of the Bellrock Offshore Transmission Infrastructure.                                                 | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Development and adherence to a Construction Method Statement will provide a framework for implementing measures to avoid or reduce                                                                                                                                                                                                                                           | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                         |                 |
|                            |     |                 | The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.                           | adverse environmental effects during construction, minimising direct and indirect impacts on benthic habitats and species.                                                                                                                                                                              |                 |
| X                          | ✓   | X               | Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.<br><br>These will be included in the Operation and Maintenance Plan. | Regular inspections, surveys and maintenance of the Bellrock Offshore Transmission Infrastructure will ensure that any damage, deterioration or debris accumulation is identified and addressed promptly, minimising disturbance and associated effects on benthic habitats and communities during O&M. | Tertiary        |

## 6.6 Scoping of Potential Impacts

### 6.6.1 Construction Phase

#### 6.6.1.1 Physical Disturbance and Temporary Habitat Loss of Seabed Habitats

469. Physical disturbance and temporary habitat loss of seabed habitats during the construction phase has the potential to occur because of site preparation works and installation activities, including the installation of the OfSS(s), OfRCS(s), offshore export cables, and interconnector cable(s). These activities may result in direct disturbance of benthic habitats within the footprint of the works. Given the presence of benthic habitats and species within the intertidal and benthic ecology study area, this impact has the potential to affect benthic receptors and will therefore be **scoped in** for further assessment in the EIA.

#### 6.6.1.2 Increased Suspended Sediment Concentrations and Sediment Deposition

470. Increased SSCs and associated sediment deposition may occur during the construction phase because of site preparation works, namely seabed preparation, and installation activities, including the installation of the OfSS(s), OfRCS(s), offshore export cables, and interconnector cable(s). These activities can result in the temporary suspension and subsequent settlement of sediments, leading to changes in local sediment dynamics. This has the potential to affect benthic habitats and species, particularly those sensitive to smothering, changes in suspended sediments, or changes in sediment composition. This impact will therefore be **scoped in** for further assessment in the EIA.

#### 6.6.1.3 Remobilisation of Existing Contaminated Sediments

471. Remobilisation of contaminated sediments may occur during the construction phase because of site preparation works, namely seabed preparation, and installation activities, including the installation of the OfSS(s), OfRCS(s), offshore export cables, and interconnector cable(s), which may disturb and resuspend sediments. Where contaminants are present, this may result in the release and redistribution of contaminants within the water column and subsequent deposition, with the potential to affect benthic habitats and species. On a precautionary basis, this impact is currently **scoped in** for further assessment in the EIA. However, sediment contamination analysis will be undertaken on samples collected during the site-specific environmental survey (**Section 6.4.2.1**). Should contaminant levels be below relevant threshold levels (e.g. Cefas Action Levels), this impact will be **scoped out** of further assessment in the EIA.

#### 6.6.1.4 Accidental Release of Pollutants

472. Accidental spills and pollution events can occur from vessels and installation techniques required for the installation and operation of the Bellrock Offshore Transmission Infrastructure.

473. As discussed in **Section 6.5.4**, all vessels must comply with MARPOL. An Environmental Management Plan or similar will also be put in place and implemented to ensure all works are undertaken in line with best practice for working in the marine environment. An MPCP will set out the provisions and response procedures in the event of pollution incidents (i.e. hydrocarbon release).

474. As a result of these embedded mitigation measures, it is considered that the risk to the marine environment resulting from a spill is negligible and should a spill occur, the MPCP will be in place to mitigate any impacts in a timely and effective manner. Therefore, it is considered that no significant effect would occur and because of these embedded mitigation measures, it is proposed that this impact is **scoped out** of the EIA.

#### 6.6.1.5 Introduction and/or Spread of Marine Invasive Non-native Species

475. Site preparation works and construction works have the potential to introduce or facilitate the spread of marine INNS through vectors such as vessel movements, biofouling on submerged surfaces, and the transfer of equipment and materials. Without appropriate controls, these pathways could result in the introduction or spread of marine INNS within the marine environment.
476. However, embedded mitigation measures (**Section 6.5.4**) are proposed in line with industry best practice to manage marine INNS risk. This includes the development and implementation of a site-specific INNSMP, which will apply to both construction and O&M phases of the Bellrock Offshore Transmission Infrastructure. The INNSMP will be developed in accordance with established biosecurity principles (Payne et al., 2014) and will identify activities with potential marine INNS risk, define critical control points, and set out appropriate control measures to minimise the risk of introduction and spread. These control measures will be informed by relevant international guidance, including the International Convention for the Control and Management of Ships' Ballast Water and Sediments and the IMO Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species (IMO, 2023). In addition, the Bellrock Offshore Transmission Infrastructure will comprise fixed-bottom OfSS(s) and OfRCS(s); therefore, the potential marine INNS introduction pathway associated with ballast water management of floating substructures is avoided.
477. With the implementation of these embedded mitigation measures, namely the INNSMP, the risk of introduction and/or spread of marine INNS is considered to be reduced to a level where significant effects are not anticipated. Based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
478. However, in response to NatureScot's feedback provided during consultation on the Scoping Information Package (**Section 6.3**) and on a precautionary basis, this impact pathway has been **scoped in** for further assessment. NatureScot are invited to review the above justification for scoping out this impact pathway and, should they agree that the evidence and embedded mitigation are sufficient to manage marine INNS risk, it may be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.

#### 6.6.1.6 Underwater Noise and Vibration

479. Underwater noise and vibration may be generated during the construction phase because of vessel activity, interconnector and offshore export cable installation, piling associated with the installation of the FBSSs for the OfSS(s) and the OfRCS(s), and potential UXO clearance. Vessel and cable installation activities will generate non-impulsive, low-level noise over a temporary and spatially constrained period. In addition, the intertidal and benthic ecology study area is characterised by existing vessel activity and associated underwater noise from commercial shipping and other marine users (see **Chapter 11: Shipping and Navigation**) such that construction vessel activity will not introduce a new anthropogenic pressure within the marine environment.

480. Impulsive noise may arise from piling and UXO clearance activities; however, these will be limited in spatial extent and duration. Piling will be restricted to up to six OFSS(s) and up to two OfRCS(s), resulting in short-term, localised disturbance. UXO clearance, if required, will comprise discrete, short-duration events.
481. Given the limited spatial and temporal extent of impulsive noise sources, and the absence of evidence for significant or lasting effects of underwater noise on benthic habitats and communities, this impact is considered unlikely to result in significant effects. Therefore, it is proposed that underwater noise and vibration is **scoped out** of the EIA.

## 6.6.2 Operation and Maintenance Phase

### 6.6.2.1 Physical Disturbance and Temporary Habitat Loss of Seabed Habitats

482. Physical disturbance and temporary habitat loss of seabed habitats may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables and interconnector cable(s), and associated cable protection. These activities may involve localised seabed interventions, resulting in direct physical disturbance to benthic habitats and species within the footprint of the works. This impact will therefore be **scoped in** for further assessment in the EIA.

### 6.6.2.2 Permanent Habitat Loss Resulting from Installation of Seabed Infrastructure

483. As stated in **Section 6.5.1**, it is acknowledged that permanent habitat loss may occur during the O&M phase because of the presence of installed seabed infrastructure, including the FBSSs for the OfSS(s) and the OfRCS(s) and associated scour protection, offshore export cables, interconnector cable(s) (where both offshore export cables and interconnector cable(s) are surface laid) and associated cable protection. The footprint of this infrastructure will result in permanent/long-term loss, or modification, of benthic habitats within the affected area. This has the potential to affect benthic habitats and species (that depend on certain habitats) within the intertidal and benthic ecology study area. This impact will therefore be **scoped in** for further assessment in the EIA. It is acknowledged that permanent habitat loss begins in construction and continues through decommissioning, however, to avoid duplicating assessments, the full extent of this impact will be assessed during the O&M phase, with a clear acknowledgment that they span the duration of the Bellrock Offshore Transmission Infrastructure's lifetime.

### 6.6.2.3 Increased Suspended Sediment Concentrations and Sediment Deposition

484. Increased SSCs and associated sediment deposition may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, or replacement of offshore export cables, interconnector cable(s), and associated cable protection. Where seabed intervention is required, these activities may result in localised and temporary disturbance and resuspension of sediments, leading to subsequent deposition in the surrounding area. This has the potential to affect benthic habitats and species, particularly those sensitive to smothering, changes in suspended sediments, or changes in sediment composition. This impact will therefore be **scoped in** for further assessment in the EIA.

#### 6.6.2.4 Remobilisation of Existing Contaminated Sediments

485. Remobilisation of existing contaminated sediments may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables, interconnector cable(s), and associated cable protection, which may require seabed intervention. Where contaminants are present, such activities may result in the disturbance and resuspension of sediments, leading to the release and redistribution of contaminants within the water column and subsequent deposition. This has the potential to affect benthic habitats and species. On a precautionary basis, this impact is currently **scoped in** for further assessment in the EIA. However, sediment contamination analysis will be undertaken on samples collected during the site-specific environmental survey (**Section 6.4.2.1**). Should contaminant levels be demonstrated to be below relevant assessment thresholds (e.g. Cefas Action Levels), this impact will be **scoped out** of further assessment in the EIA.

#### 6.6.2.5 Accidental Release of Pollutants

486. Accidental release of pollutants during the O&M phase is not considered to result in significant effects on benthic receptors. The potential impacts will be to a lesser degree than in the construction phase, due to fewer vessels required during O&M. Embedded mitigation measures to reduce pollution incident risks and establish appropriate management measures described in **Section 6.6.1.4** will also cover the O&M phase of the Bellrock Offshore Transmission Infrastructure. Therefore, it is proposed that this impact is **scoped out** of the EIA.

#### 6.6.2.6 Introduction and/or Spread of Marine Invasive Non-native Species

487. During the O&M phase, there remains potential for the introduction and/or spread of marine INNS associated with vessel movements and maintenance activities (e.g. inspection, repair, and replacement works), which may act as vectors for biofouling transfer. However, these pathways are comparable to those identified for the construction phase (**Section 6.6.1.5**), albeit at a reduced frequency and spatial extent.

488. As outlined for the construction phase, a site-specific INNSMP will be implemented as embedded mitigation (**Section 6.5.4**) and will apply throughout the operational life of the Bellrock Offshore Transmission Infrastructure. The INNSMP will identify relevant risk pathways and define appropriate biosecurity control measures in accordance with recognised best practice and international guidance.

489. With the implementation of the INNSMP, the risk of introduction and/or spread of marine INNS is reduced to a level where significant effects are not anticipated. Based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.

490. However, in response to NatureScot's feedback provided during consultation on the Scoping Information Package (**Section 6.3**) and on a precautionary basis, this impact pathway has been **scoped in** for further assessment. NatureScot are invited to review the above justification for scoping out this impact pathway and, should they agree that the evidence and embedded mitigation are sufficient to manage marine INNS risk, it may be scoped out of the Bellrock OFTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.

#### 6.6.2.7 Colonisation of Artificial Hard Substrate Associated with Installed Infrastructure

491. Colonisation of artificial hard substrate may occur during the O&M phase because of the presence of the installed Bellrock Offshore Transmission Infrastructure, including the OfSS(s), OfRCS(s) and associated scour protection, offshore export cables, interconnector cable(s), and associated cable protection, which introduce artificial hard substrate into predominantly sedimentary environments. These structures may provide settlement surfaces for epifaunal and epifloral communities, resulting in localised changes in benthic community composition and habitat structure, with community composition typically altering to reflect that of naturally occurring rocky intertidal habitats (Karlsson et al., 2022; Boutin et al., 2023). This has the potential to affect benthic habitats and species within the intertidal and benthic ecology study area. This impact will therefore be **scoped in** for further assessment in the EIA.

#### 6.6.2.8 Electromagnetic Fields Generated by Energised Subsea Cables

492. EMF will be generated by the energised offshore export cables and interconnector cable(s) during the O&M phase of the Bellrock Offshore Transmission Infrastructure. Embedded mitigation measures, including the use of armoured three-phase single core (trefoil arrangement) high voltage cable design and burial of cables, 1 to 3.5 m deep, where feasible (or protection where burial is not practicable), will act to reduce EMF emission and limit exposure. As a result, EMF effects will be highly localised to the immediate vicinity of the cable, with field strength rapidly attenuated to background levels and below within a few metres of the source.
493. Laboratory-based studies have demonstrated that some benthic invertebrates can respond to EMF exposure; however, these responses are typically observed under controlled conditions at field strengths substantially greater than those associated with subsea cables. For example, Stankevičiūtė et al. (2019) reported genotoxic and cytotoxic responses in Baltic clam and common ragworm exposed to 50 Hz at 1,000  $\mu$ T over a 12-day period, which is significantly higher than EMF levels expected in the vicinity of buried or protected subsea cables. In contrast, Chapman et al. (2023) found no significant physiological (i.e. righting reflex) or behavioural response in the common periwinkle, common starfish, edible sea urchin, and velvet swimming crab when exposed to EMF levels of up to 500  $\mu$ T.
494. Field-based evidence provides further context, indicating limited ecological consequences. An in-situ study by Donázar-Aramendía et al (2025) identified no significant effects on macrofaunal communities as a result of EMF exposure. Similarly, Sherwood et al. (2016) reported that ecological effects on soft sediment communities were minor and transient where cables were buried (rather than EMF interactions), with colonisation of exposed infrastructure reflecting assemblages present on surrounding hard substrates.
495. Taken together, the available evidence indicates that while individual-level responses may occur under elevated or artificial exposure conditions, there is no clear evidence of significant population or community level effects on intertidal and benthic ecology (habitats and species) under realistic offshore cable scenarios. In addition, potential effects on fish and shellfish receptors will be assessed in **Chapter 7: Fish and Shellfish Ecology**.
496. The above conclusion is consistent with assessments undertaken for other offshore wind farm developments off the east coast of Scotland, including Ossian (Ossian Offshore Wind Farm



Limited, 2024), Aspen (Cerulean Winds Aspen Project Limited, 2025), Muir Mhòr (Muir Mhòr Offshore Wind Farm Limited, 2024), Buchan (Buchan Offshore Wind Limited, 2025), Berwick Bank (Berwick Bank Wind Farm Limited, 2022), Green Volt (Green Volt Offshore Windfarm Limited, 2023), and Salamander (Salamander Wind Project Company Limited, 2024). These assessments have consistently identified EMF effects on intertidal and benthic ecology as localised, with effects characterised as negligible to minor adverse and not significant in EIA terms. Berwick Bank, Green Volt, and Salamander have subsequently been consented, providing further confidence in the conclusion that EMF effects on intertidal and benthic ecology are unlikely to result in significant effects.

497. Given the highly localised spatial extent of EMF, the attenuation of field strength with distance, the limited sensitivity of benthic habitats and communities, and the absence of evidence for significant ecological effects under field conditions, EMF is not considered to represent a meaningful impact pathway for intertidal and benthic ecology. Therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
498. However, in response to NatureScot's feedback provided during consultation on the Scoping Information Package (**Section 6.3**) and on a precautionary basis, this impact pathway has been **scoped in** for further assessment. NatureScot are invited to review the above justification for scoping out this impact pathway and, should they agree that the evidence and embedded mitigation are sufficient to mitigate EMF impacts, it may be scoped out of the Bellrock OFTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.

#### **6.6.2.9 Thermal Emissions from Energised Subsea Cables**

499. Thermal emissions will be generated by the offshore export cables and interconnector cable(s) because of resistive heat loss during electricity transmission. The magnitude and spatial extent of seabed heating is influenced by cable specification, electrical load, burial depth, and the thermal properties of the surrounding sediments (Emeana et al., 2016).
500. Embedded mitigation through cable design and installation, including appropriate conductor sizing, armouring, burial depth (1 to 3.5 m deep), and optimisation of transmission efficiency, will minimise heat loss and associated thermal emissions. As a result, any temperature increases will be highly localised to the immediate vicinity of the cable, with heat dissipating rapidly into the surrounding sediments and overlying water column.
501. Evidence indicates that temperature increases at the cable-sediment interface are negligible and attenuate to background levels within metres of the cable (Meißner et al., 2006; Hughes et al., 2015; Taormina et al., 2018). No measurable behavioural or ecological effects on benthic habitats and species have been identified. This is consistent with OSPAR Commission (2009), which identified thermal emissions from subsea cables as a spatially limited, low magnitude pressure with limited ecological relevance for benthic receptors.
502. Given the very small magnitude and highly localised nature of thermal emissions, the rapid dissipation of heat, and the absence of evidence for ecological effects at the population or community level, there is no credible pathway for significant effects on intertidal and benthic ecology. Therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.



503. However, in response to NatureScot's feedback provided during consultation on the Scoping Information Package (**Section 6.3**) and on a precautionary basis, this impact pathway has been **scoped in** for further assessment. NatureScot are invited to review the above justification for scoping out this impact pathway and, should they agree that the evidence and embedded mitigation are sufficient to mitigate thermal emission impacts, it may be scoped out of the Bellrock OFTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.

#### **6.6.2.10 Underwater Noise and Vibration**

504. Underwater noise and vibration may be generated during the O&M phase because of vessel activity and planned and unplanned maintenance activities, including inspections, repairs, and replacement of offshore export cables and interconnector cable(s). These activities are non-impulsive in nature and are not expected to generate significant levels of underwater noise. Given, the limited intensity, localised nature, and absence of impulsive noise sources, this impact is considered unlikely to result in significant effects on benthic habitats and species. Therefore, it is proposed that this impact pathway is **scoped out** of further assessment in the EIA.

### **6.6.3 Decommissioning Phase**

#### **6.6.3.1 Physical Disturbance and Temporary Habitat Loss of Seabed Habitats**

505. Physical disturbance and temporary habitat loss of seabed habitats may occur during the decommissioning phase because of infrastructure removal activities, such as cutting and lifting of FBSSs and piles, recovery of scour protection, and recovery of offshore export cables and interconnector cable(s) and associated cable protection. These activities are broadly comparable to those described for the construction phase (**Section 6.6.1.1**), although are typically of reduced spatial extent and duration due to their more targeted nature. This has the potential to affect benthic habitats and species within the intertidal and benthic ecology study area, and therefore this impact will be **scoped in** for further assessment in the EIA.

#### **6.6.3.2 Increased Suspended Sediment Concentrations and Sediment Deposition**

506. Increased SSCs and associated sediment deposition may occur during the decommissioning phase because of infrastructure removal activities, such as cutting and lifting of FBSSs and piles, recovery of scour protection, and recovery of offshore export cables and interconnector cable(s) and associated cable protection. These activities may result in the temporary resuspension of sediments and subsequent deposition in the surrounding area. This is broadly comparable to the processes described for the construction phase (**Section 6.6.1.2**), although activities are expected to be of a reduced spatial extent and duration due to the more targeted nature. This has the potential to affect benthic habitats and species, particularly those sensitive to smothering, changes in suspended sediments, or changes in sediment composition. This impact will therefore be **scoped in** for further assessment in the EIA.

#### **6.6.3.3 Remobilisation of Existing Contaminated Sediments**

507. Remobilisation of existing contaminated sediments may occur during the decommissioning phase because of infrastructure removal activities, which may disturb seabed sediments. Where contaminants are present, such activities may result in the resuspension and redistribution of contaminated sediments within the water column and subsequent deposition, with the potential to affect benthic habitats and species. This impact is therefore **scoped in** on a precautionary basis

for further assessment in the EIA. However, sediment contaminant analysis will be undertaken on samples collected during the site-specific environmental survey (**Section 6.4.2.1**). Should contaminant levels be below relevant assessment thresholds, this impact will be **scoped out** of further assessment in the EIA.

#### **6.6.3.4 Accidental Release of Pollutants**

508. Accidental release of pollutants may occur during the decommissioning phase because of vessel operations and infrastructure removal activities. These activities are broadly comparable to those described for the construction phase (**Section 6.6.1.4**), although are typically of reduced spatial extent and duration due to their more targeted nature. As set out in **Section 6.5.4**, embedded mitigation measures, including compliance with MARPOL requirements, implementation of an Environmental Management Plan, and a MPCP, will be applied throughout the decommissioning phase. On this basis, it is proposed that this impact is **scoped out** of further assessment in the EIA.

#### **6.6.3.5 Introduction and/or Spread of Marine Invasive Non-native Species**

509. During the decommissioning phase, there is the potential for the introduction and/or spread of marine INNS associated with vessel activity and decommissioning works. These pathways are comparable to those identified for the construction phase.
510. As outlined for the construction phase, a site-specific INNSMP will be implemented for the construction and O&M phases of the Bellrock Offshore Transmission Infrastructure. A separate INNSMP will be developed for the decommissioning as part of the relevant consenting process; however, this will be based on the same biosecurity principles (Payne et al., 2014), including the identification of critical control points and implementation of appropriate control measures.
511. On this basis, there is no potential for significant effects from the introduction and/or spread of marine INNS during decommissioning, and therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
512. However, in response to NatureScot's feedback provided during consultation on the Scoping Information Package (**Section 6.3**) and on a precautionary basis, this impact pathway has been **scoped in** for further assessment. NatureScot are invited to review the above justification for scoping out this impact pathway and, should they agree that the evidence and embedded mitigation are sufficient to manage marine INNS risk, it may be scoped out of the Bellrock OFTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.

#### **6.6.3.6 Underwater Noise and Vibration**

513. Underwater noise and vibration may occur during the decommissioning phase because of infrastructure removal activities, including marine vessel activity. These activities are comparable in nature to those undertaken during construction; however, decommissioning will not involve impulsive sources such as piling. Any noise generated will be temporary, localised, and of limited duration. Given the absence of high-intensity impulsive noise and the transient nature of works, it is proposed that this impact pathway is **scoped out** of further assessment in the EIA.

### 6.6.3.7 Loss of Artificial Hard Substrate Habitat due to Removal of Infrastructure

514. Removal of artificial hard substrate habitat may occur during the decommissioning phase because of the removal of the Bellrock Offshore Transmission Infrastructure. This will result in the removal of colonised artificial structures and any associated epifaunal and epifloral communities, and the subsequent reversion of the seabed towards pre-installation natural habitat conditions (Spielmann et al., 2023). This may lead to changes to local benthic habitat and species composition within the footprint of infrastructure removal. This impact will therefore be **scoped in** for further assessment in the EIA.

### 6.6.4 Bellrock OfTDA Whole Project Assessment

515. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on intertidal and benthic ecology receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
516. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock Onshore Transmission Development Area for intertidal and benthic ecology. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

### 6.6.5 Potential Cumulative Effects

517. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
518. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 6.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on intertidal and benthic ecology receptors.
519. As stated above, there is potential for cumulative impacts on intertidal and benthic ecology receptors where the Bellrock Offshore Transmission Infrastructure and other plans and projects have conceptual overlap through a shared or similar source-pathway-receptor linkage, alongside spatial and temporal overlap. In general, many impact pathways (e.g. physical disturbance and permanent habitat loss) are spatially constrained to the immediate footprint of seabed infrastructure and therefore have a limited ZoI. However, other impact pathways, such as increased SSCs and sediment deposition, may extend over a wider area and therefore have greater potential to contribute to cumulative interaction.

520. The CEA will consider other plans and projects with the potential to affect the identified intertidal and benthic ecology IEFs through the same or similar impact pathways. Spatial screening of plans and projects will be defined proportionately, considering the Zol associated with each impact pathway, alongside the potential for conceptual and temporal overlap, to ensure that only plans/projects with realistic potential for cumulative interaction are included.

### 6.6.6 Potential Transboundary Effects

521. Transboundary effects on intertidal and benthic ecology are not anticipated to arise from the construction, O&M, or decommissioning of the Bellrock Offshore Transmission Infrastructure. Benthic impact pathways are typically localised, with impacts largely confined to the footprint or immediate surroundings of seabed infrastructure. Although some impacts (e.g. increased SSCs and associated deposition) may extend over a wider area, these are generally limited by local hydrodynamic conditions and tidal excursion distances.
522. Given the distance from the Bellrock OfTDA to the nearest Exclusive Economic Zone and the limited spatial extent of benthic impact pathways, there is no plausible mechanism for transboundary effects to occur. Transboundary effects on intertidal and benthic ecology are therefore **scoped out** of further assessment in the EIA.

### 6.6.7 Summary of Potential Impacts

523. **Table 6.8** summarises the outcomes of the scoping assessment presented in **Section 6.6.1** to **Section 6.6.6**, identifying the relevant impacts for intertidal and benthic ecology and confirming whether these have been scoped in or scoped out of further assessment in the Bellrock OfTDA EIA.

**Table 6.8: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Intertidal and Benthic Ecology**

| Potential Impact                                                            | Scoped In or Scoped Out? (✓ or X) |                |                 |
|-----------------------------------------------------------------------------|-----------------------------------|----------------|-----------------|
|                                                                             | Construction                      | O&M            | Decommissioning |
| Physical disturbance and temporary habitat loss of seabed habitats          | ✓                                 | ✓              | ✓               |
| Permanent habitat loss resulting from installation of seabed infrastructure | X                                 | ✓              | X               |
| Increased SSCs and sediment deposition                                      | ✓                                 | ✓              | ✓               |
| Remobilisation of existing contaminated sediments                           | ✓ <sup>1</sup>                    | ✓ <sup>1</sup> | ✓ <sup>1</sup>  |
| Accidental release of pollutants                                            | X                                 | X              | X               |
| Introduction and/or spread of marine INNS                                   | ✓                                 | ✓              | ✓               |

| Potential Impact                                                                                                                                                                                                                                                                          | Scoped In or Scoped Out? (✓ or X) |     |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----|-----------------|
|                                                                                                                                                                                                                                                                                           | Construction                      | O&M | Decommissioning |
| Colonisation of artificial hard substrates associated with installed infrastructure                                                                                                                                                                                                       | X                                 | ✓   | X               |
| EMFs generated by energised subsea cables                                                                                                                                                                                                                                                 | X                                 | ✓   | X               |
| Thermal emissions from energised subsea cables                                                                                                                                                                                                                                            | X                                 | ✓   | X               |
| Underwater noise and vibration                                                                                                                                                                                                                                                            | X                                 | X   | X               |
| Loss of artificial hard substrate habitat due to removal of infrastructure                                                                                                                                                                                                                | X                                 | X   | ✓               |
| Bellrock OfTDA Whole Project Assessment                                                                                                                                                                                                                                                   | ✓                                 | ✓   | ✓               |
| Cumulative effects                                                                                                                                                                                                                                                                        | ✓                                 | ✓   | ✓               |
| Transboundary effects                                                                                                                                                                                                                                                                     | X                                 | X   | X               |
| <p>Notes:</p> <p><sup>1</sup> The impact 'remobilisation of existing contaminated sediments' is currently scoped in on a precautionary basis. However, if sediment contamination analysis shows that contaminant levels are below relevant thresholds this impact will be scoped out.</p> |                                   |     |                 |

## 6.7 Proposed Approach to Impact Assessment

### 6.7.1 Approach to Identification of Important Ecological Features

524. The identification of IEFs is a key process, ensuring that the assessment focuses on habitats and species that are both of sufficient importance and have the potential to be affected by the Bellrock Offshore Transmission Infrastructure. IEFs will be identified in accordance with CIEEM guidance (CIEEM, 2018).
525. The identification of IEFs will be informed by site-specific surveys, publicly available data, and stakeholder consultation (where required). Features will be considered where recognised through legislation, policy, or conservation designations, or where they are notable due to rarity, extent, condition, level of threat, or rate of decline. This will include, where relevant PMFs, Annex I habitats, and features of designated sites.
526. The importance of each feature will be defined within an appropriate geographical context (e.g. international to local), with justification provided. Features that are widespread, unthreatened, and

resilient to the identified impact pathways, and which are expected to remain viable, will not be taken forwards as IEFs. This ensures a proportionate and focused assessment.

527. The final list of IEFs will be confirmed in the EIA following detailed baseline characterisation and consultation and will form the basis for subsequent assessment.

### **6.7.2 Approach to Defining Sensitivity**

528. The sensitivity of each IEF will be defined based on its tolerance (resistance) and capacity for recovery (resilience) from, the relevant impact pathways. Sensitivity will be determined using a combination of professional judgement and evidence-based sources, including MarESA (Tyler-Walters et al., 2023) and FeAST (FeAST Working Group, 2026).
529. Sensitivity will be categorised using a defined scale (e.g. high, medium, low, and negligible), with justification provided for each IEF based on its ecological characteristics, conservation importance, and known responses to the relevant pressures.

### **6.7.3 Approach to Defining Impact Magnitude**

530. The magnitude of each impact will be determined with reference to the characteristics of the impact and its interaction with the relevant receptors, considering:
- Positive or negative;
  - Spatial extent;
  - Duration;
  - Frequency and timing; and
  - Reversibility.
531. Magnitude will be defined on a standard scale (e.g. high, medium, low, negligible, and no change), with consideration of both the scale of the impact and the proportion of the IEF affected.

### **6.7.4 Approach to Determining Effect Significance**

532. The significance of effects will be determined through a combination of sensitivity and impact magnitude, using a defined significance matrix. The assessment will identify the level of effect (e.g. major, moderate, minor, negligible, no effect) and determine whether effects are significant in EIA terms.
533. In accordance with standard EIA practice, effects assessed as major or moderate will be considered significant, whilst those assessed as minor, negligible, or no effect will be considered not significant. The assessment will clearly distinguish between potential effects (prior to secondary mitigation) and residual effects (following the implementation of any secondary mitigation measures), where relevant.

## 6.8 Scoping Questions for Consultees

534. The following questions are posed to consultees to help them frame and focus their response to the intertidal and benthic ecology scoping exercise, which will in turn inform the EIA:

- Do you agree that all the relevant data sources have been identified in **Section 6.4.2**?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 6.2**?
- Do you agree with the proposed study area as presented in **Section 6.4.1**?
- Do you agree that the information described will be suitable for characterisation of the existing environment?
- Do you agree that all intertidal and benthic ecology impacts resulting from the Bellrock Offshore Transmission Infrastructure have been identified?
- Do you agree with the justification presented in **Section 6.6.1.5**, **Section 6.6.2.6**, and **Section 6.6.3.5** for scoping out introduction and/or spread of marine INNS?
- Do you agree with the justification presented in **Section 6.6.2.8** for scoping out EMF generated by energised subsea cables?
- Do you agree with the justification presented in **Section 6.6.2.9** for scoping out thermal emissions from energised subsea cables?
- Do you agree with the intertidal and benthic ecology impacts that have been scoped in for/out from further consideration within the Bellrock OFTDA EIA?
- Do you agree with the proposed approach to assessment for the Bellrock OFTDA EIA?
- Do you have any other matters or information sources that you wish to present?



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# 7 Fish and Shellfish Ecology

## 7.1 Introduction

535. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on fish and shellfish ecology.
536. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
537. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
538. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure, including buoys.

539. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
540. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on fish and shellfish ecology receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
541. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 6: Intertidal and Benthic Ecology;**
  - **Chapter 8: Marine Mammals;**
  - **Chapter 9: Intertidal and Offshore Ornithology;** and
  - **Chapter 10: Commercial Fisheries.**
542. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.
543. Ocean quahog *Arctica islandica* will be considered in **Chapter 6: Intertidal and Benthic Ecology** due to their lack of commercial value and association with their benthic habitats.

## 7.2 Legislation, Policy and Guidance

544. **Table 7.1** sets out the relevant legislation, policy and guidance for fish and shellfish ecology that informs this Chapter and will inform the fish and shellfish ecology assessment in the Bellrock OfTDA EIA Report, where appropriate. The overarching legislation and policy relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 7.1: Summary of Relevant Legislation, Policy and Guidance for Fish and Shellfish Ecology**

| Relevant Legislation, Policy and Guidance | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Marine (Scotland) Act 2010                | Provides the statutory framework for marine licensing in Scottish inshore waters (0 to 12 nautical miles (nm)). Part 4, Section 21 requires a Marine Licence for licensable activities. Section 27(1) requires that the Scottish Ministers give regard to the need to protect the environment when determining an application. Potential impacts and subsequent effects on fish and shellfish species relevant to the Bellrock |



| Relevant Legislation, Policy and Guidance                                                                                                                                                 | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                           | Offshore Transmission Infrastructure are considered throughout this assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Marine and Coastal Access Act 2009                                                                                                                                                        | Provides the statutory framework for marine licensing in Scottish offshore waters (12 to 200 nm). Section 66 requires a Marine Licence for licensable activities. Section 69(1) requires that the appropriate licensing authority gives regard to the need to protect the environment when determining an application. Potential impacts and subsequent effects on fish and shellfish species and habitats relevant to the Bellrock Offshore Transmission Infrastructure are considered throughout this assessment.                                                                                                                                                                                                                                                                                                                                                                                        |
| Conservation (Natural Habitats &c.) Regulations 1994 (Habitats Regulations) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (Offshore Habitats Regulations) | <p>The Conservation (Natural Habitats &amp;c.) Regulations 1994 apply within Scottish inshore waters (0 to 12 nm), whereas the Conservation of Offshore Marine Habitats and Species Regulations 2017 apply within Scottish offshore waters (12 to 200 nm).</p> <p>These regulations transpose the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) into domestic law and provide the legal framework for the designation of Special Areas of Conservation (SACs) and Special Protection Areas. The Habitats Directive lists habitats (Annex I) and species (Annex II) of community interest. Annex II species include key fish and shellfish receptors such as Atlantic salmon <i>Salmo salar</i>.</p> <p>Annex II species will be considered within the fish and shellfish ecology assessment, where relevant.</p> |
| Nature Conservation (Scotland) Act 2004                                                                                                                                                   | Establishes a duty on Scottish public authorities to further the conservation of biodiversity when carrying out their responsibilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| The Wildlife and Countryside Act 1981                                                                                                                                                     | <p>Provides a list of threatened species for which killing, injuring or taking by any method is prohibited.</p> <p>Basking sharks <i>Cetorhinus maximus</i> are protected from intentional or reckless disturbance or harassment. If a risk of disturbance or harassment that cannot be removed or sufficiently reduced by using alternatives or mitigation measures, then the activity may still go ahead under licence (Basking Shark Licence).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wildlife and Natural Environment (Scotland) Act 2011                                                                                                                                      | Amends and strengthens wildlife protection in Scotland, including certain provisions of the Wildlife and Countryside Act 1981. Introduces measures for control of invasive non-native species (INNS) and reinforces the biodiversity duty on Scottish public bodies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003                                                                                                                       | Provides protection and management measures for Atlantic salmon and freshwater fish in Scotland, including controls on activities that may affect their conservation status.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Policy</b>                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| The Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) 1992                                                                        | Provides the legal framework for cooperation to protect the marine environment of the North-East Atlantic, including the prevention and elimination of pollution and the protection and conservation of marine habitats and species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Convention on Biological Diversity 1992                                                                                                                                                   | Establishes the international commitment to conserve biological diversity, promote sustainable use of its components, and share the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Relevant Legislation, Policy and Guidance                                                                              | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                        | benefits of genetic resources. Provides high-level context for biodiversity protection in marine environments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland (Scottish Government, 2024)          | <p>Sets out Scotland's long-term framework for biodiversity restoration and protection across land, freshwater, and marine environments, aiming to achieve Nature Positive outcomes by 2030 and fully restored biodiversity by 2045. The strategy is structured across six objectives:</p> <ul style="list-style-type: none"> <li>▪ Accelerate restoration and regeneration;</li> <li>▪ Protect nature on land and at sea, across and beyond protected areas;</li> <li>▪ Embed nature-positive farming, fishing, and forestry;</li> <li>▪ Protect and support recovery of vulnerable and important species and habitats;</li> <li>▪ Invest in nature; and</li> <li>▪ Take action on the indirect drivers of biodiversity loss.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Scotland's National Marine Plan (Scottish Government, 2015)                                                            | <p>Provides a statutory framework for sustainable use and management of Scottish inshore and offshore waters. Policies of relevance to fish and shellfish ecology include:</p> <ul style="list-style-type: none"> <li>▪ GEN1 (General Planning Principle): There is a presumption in favour of sustainable development and use of the marine environment when consistent with the policies and objectives of this Plan;</li> <li>▪ GEN9 (Natural Heritage): Development and use of the marine environment must: (a) Comply with legal requirements for protected areas and protected species. (b) Not result in significant impact on the national status of Priority Marine Features (PMFs). (c) Protect and, where appropriate, enhance the health of the marine area;</li> <li>▪ Gen10 (INNS): Opportunities to reduce the introduction of INNS to a minimum or proactively improve the practice of existing activity should be taken when decisions are being made; and</li> <li>▪ GEN21 (Cumulative Impacts): Cumulative impacts affecting the ecosystem of the marine plan area should be addressed in decision making and plan implementation.</li> </ul> |
| Scottish Wild Salmon Strategy (Scottish Government, 2022)                                                              | Sets out the Scottish Government's vision, objectives, and priority actions to protect and recover Atlantic salmon populations in response to long-term decline, recognising pressures across freshwater, coastal, and marine environments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR, 2021) | Provides the framework by which OSPAR's 16 Contracting Parties implement the OSPAR convention until 2030. Sets collective objectives to address biodiversity loss, pollution (including marine litter), and climate change, contributing to the United Nations 2030 Agenda for Sustainable Development. The strategy includes four themes, clean seas, biologically diverse seas, productive and sustainable seas, and seas resilient to climate change and ocean acidification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Guidance</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Joint Nature Conservation Committee (JNCC) Marine Monitoring Handbook (Davies et al., 2001)                            | These guidelines have been produced to promote good practice in marine monitoring.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| Relevant Legislation, Policy and Guidance                                                                                                                                                                                        | Relevance to the Assessment                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Guidelines for Ecological Impact Assessment in the United Kingdom (UK) and Ireland. Terrestrial, Freshwater, Coastal and Marine (Chartered Institute for Ecology and Environmental Management; CIEEM, 2018) (latest update 2022) | Provides professional guidance on ecological impact assessment methodology, including the identification, classification, and evaluation of ecological receptors as Important Ecological Features (IEFs). |
| Centre for Environment Fisheries and Aquaculture Science (Cefas), Guidelines for Data Acquisition to Support Marine Environmental Assessments for Offshore Renewable Energy Projects (Cefas, 2012)                               | These guidelines assist in the design, review and implementation of environmental data collection and analytical activities associated with all stages of offshore renewable energy developments.         |

## 7.3 Consultation

545. A Scoping Information Package for the Bellrock OfTDA was provided to Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to fish and shellfish ecology for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to fish and shellfish ecology are provided in **Table 7.2**.

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**Table 7.2: Consultation Relevant to Fish and Shellfish Ecology**

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to the fish and shellfish local and regional study area?</u></b></p> <p>The local study area will be informed by International Council for the Exploration of the Sea (ICES) rectangles and will be used to assess all direct impacts and most indirect impacts. The regional study area will be defined as the Northern North Sea biogeographic region and will account for potentially long-range effects such as underwater noise (UWN) and effects on migratory diadromous fish species. NatureScot are content with the study areas proposed, assuming that the northern boundary is beyond the maximum tidal excursion to take into account potential impacts from suspended sediments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Noted. The specific northern boundary referred to in the NatureScot's comment is unclear; however, the fish and shellfish regional study area extends to the Shetland Islands and therefore well beyond the maximum anticipated tidal excursion distance. The fish and shellfish local study area encompasses a 10 km zone of influence (Zoi) around the Bellrock OfTDA Scoping Boundary, which has been applied on a precautionary basis to cover the maximum tidal excursion distance and potential Zoi associated with changes to suspended sediment concentrations (SSC) (see <b>Section 5.4.1 of Chapter 5: Marine Geology, Oceanography, and Physical Processes</b> ). |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to baseline characterisation?</u></b></p> <p>The approach to baseline characterisation is appropriate, and NatureScot agree with the proposed approach and that relevant data sources have been identified.</p> <p>Slide 17 notes that National Marine Plan interactive map layers will be considered in the baseline characterisation, including for Atlantic cod <i>Gadus morhua</i>, haddock <i>Melanogrammus aeglefinus</i> and whiting <i>Merlangius merlangus</i>. This should include consideration of the modelled data by González-Irusta and Wright (2016), available as heatmap layers on the National Marine Plan interactive:</p> <p>José M. González-Irusta, Peter J. Wright, Spawning grounds of Atlantic cod (<i>Gadus morhua</i>) in the North Sea, ICES Journal of Marine Science, Volume 73, Issue 2, January/February 2016, Pages 304–315, <a href="https://doi.org/10.1093/icesjms/fsv180">https://doi.org/10.1093/icesjms/fsv180</a>;</p> <p>José M. González-Irusta, Peter J. Wright, Spawning grounds of haddock (<i>Melanogrammus aeglefinus</i>) in the North Sea and West of Scotland, Fisheries Research, Volume 183, November 2016, Pages 180-191, <a href="https://doi.org/10.1016/j.fishres.2016.05.028">https://doi.org/10.1016/j.fishres.2016.05.028</a>; and</p> | Noted. The three data sources that NatureScot refer to are listed in <b>Section 7.4.2</b> . These data sources will be used, along with other relevant data sources, to characterise the fish and shellfish ecology baseline.                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Consultee  | Date/Document                                                                         | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                       | José M. González-Irusta, Peter J. Wright, Spawning grounds of whiting ( <i>Merlangius merlangus</i> ), Fisheries Research, Volume 195, November 2017, Pages 141-151, <a href="https://doi.org/10.1016/j.fishres.2017.07.005">https://doi.org/10.1016/j.fishres.2017.07.005</a> .                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| NatureScot | 12 June 2026<br><br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to surveys?</u></b></p> <p>NatureScot agree with the proposed approach for the benthic grab samples to inform habitat / spawning sediment suitability and understand that no further sampling will be carried out for fish and shellfish.</p> <p>NatureScot understand that environmental DNA (eDNA) samples were used to help inform and contextualise the WFDA baseline. Additionally, the previous OfTDA Scoping Information Package (July 2024) proposed eDNA sampling, as such NatureScot query why eDNA sampling is no longer proposed for the OfTDA?</p> | eDNA sampling will take place as part of the environmental survey. 15 locations at 3 depths are proposed.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| NatureScot | 12 June 2026<br><br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to underwater noise modelling?</u></b></p> <p>NatureScot agree with the proposed approach to assess UWN and with use of the Popper et al (2014) thresholds.</p> <p>Sandeel <i>Ammodytes marinus</i> and <i>A. tobianus</i>, spawning herring <i>Clupea harengus</i> and spawning cod have been considered as stationary receptors, NatureScot also consider it appropriate for herring eggs to also be classified as stationary receptors during the herring spawning season.</p>                                                                               | Noted. <b>Section 7.7.3</b> identifies the receptors that will be treated either as stationary or fleeing, depending on their behaviour and the level of precaution required. Sandeel, spawning Atlantic herring, spawning Atlantic cod, and eggs will be treated as stationary receptors.                                                                                                                                                                                                                                      |
| NatureScot | 12 June 2026<br><br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b></p> <p>NatureScot agree with the potential impacts scoped in / out and have no further comments to make.</p>                                                                                                                                                                                                                                                                                                                                                                                                               | Noted. Since the Scoping Information Package was issued to NatureScot, the impact scoping assessment has been refined following further consideration of the available evidence base and embedded mitigation measures. The updated scoping assessments conclude that thermal emissions and disturbance and collision from vessels can be scoped out across all development phases and UWN can be scoped out for the O&M and decommissioning phases. The supporting rationale for these conclusions is presented in the relevant |

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                           | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                   | <p>scoping assessments (<b>Section 7.6.1</b>, <b>Section 7.6.2</b>, and <b>Section 7.6.3</b>).</p> <p>However, as presented in the Scoping Information Package, and on a precautionary basis, these impact pathways have been scoped in. NatureScot are invited to review the justification for scoping out these impacts as presented within the scoping assessments. Should NatureScot agree that the available evidence and embedded mitigation measures are sufficient to support scoping out, these impacts will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped in position will be maintained.</p> |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the impact assessment?</u></b></p> <p>NatureScot agree with the proposed impact assessment approach, noting the use of a significance matrix. The matrix presented appears to be standard, NatureScot note that moderate and major effects will be considered significant in EIA terms - which they agree with.</p> | Noted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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## 7.4 Existing Environment

### 7.4.1 Study Area

546. The distribution and abundance of fish and shellfish populations is spatially and temporally variable, therefore for the purposes of the fish and shellfish ecology baseline characterisation, two fish and shellfish study areas are defined. These two study areas are shown in **Figure 7.1 (Appendix A (Volume 1))** and described here, respectively:

- The fish and shellfish local study area is defined as the ICES rectangles that overlaps with the Bellrock OfTDA Scoping Boundary (ICES rectangles 42E7, 42E8, 42E9, 43E7, 43E8, and 43E9); and
- The fish and shellfish regional study area encompasses the fish and shellfish local study area and a surrounding area defined by the boundary of the Northern North Sea biogeographic region, as identified in The State of UK Seas: Charting Progress 2 report (UK Marine Monitoring and Assessment Strategy Community, 2010). The Northern North Sea biogeographic region fully overlaps with the Forth and Tay, the North East, and the Moray Firth Scottish Marine Regions, whilst overlapping partially with the Orkney Islands and the Shetland Isles Scottish Marine Regions. The fish and shellfish regional study area provides broader ecological context to the local study area, including the distribution of key species and populations within the wider region. It is used to support baseline characterisation particularly for migratory diadromous species. The assessment of potential impacts will primarily focus on the fish and shellfish local study area, with the regional context used to inform interpretation where appropriate.

547. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The fish and shellfish local and regional study areas will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4** of **Chapter 1: Introduction**).

### 7.4.2 Data and Information Sources

548. Baseline data for the fish and shellfish ecology assessment have been reviewed at a high level from the sources listed in **Table 7.3** to inform the identification of key fish and shellfish receptors within the fish and shellfish local study area. These data will be reviewed and analysed in further detail to support the **Bellrock OfTDA EIA**. In addition to these sources, consultation with relevant stakeholders will be undertaken and considered where appropriate (see **Section 7.3**).

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**Table 7.3: Summary of Key Data and Information Sources for Fish and Shellfish Ecology**

| Dataset                                                                                 | Temporal Coverage    | Description                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Designated Sites and Spatial Data</b>                                                |                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| NatureScot SiteLink map (NatureScot, 2026)                                              | Not applicable (N/A) | Interactive mapping tool providing access to spatial and descriptive data on Scotland's protected areas, including site boundaries, designated features, and supporting documents. Useful for identifying designated sites, and associated features, located within the vicinity of the Bellrock OfTDA.                                                                                                 |
| JNCC Marine Protected Area Mapper (JNCC, 2026)                                          | N/A                  | Interactive mapping tool providing spatial and feature data for all UK marine designated sites, including offshore and inshore sites. Provides access to designated site boundaries and associated conservation features. Suitable for understanding the presence of marine designated sites within the vicinity of the Bellrock OfTDA.                                                                 |
| Geodatabase of Marine features adjacent to Scotland (NatureScot and JNCC, 2026)         | Various              | Dataset collated by NatureScot and JNCC, Geodatabase of Marine features adjacent to Scotland provides spatial records of PMFs and Annex II species in Scottish waters. It serves as a core evidence base supporting the Scottish Nature Conservation Marine Protected Area (ncMPA) network. Suitable for understanding the presence of fish and shellfish receptors within and near the Bellrock OfTDA. |
| <b>Habitat and Environmental Context</b>                                                |                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| UK Atlas of Seabed Habitats (JNCC, 2025)                                                | N/A                  | Predictive broad-scale seabed habitat map for UK waters, used to determine seabed types and interpret habitat-dependent species distributions.                                                                                                                                                                                                                                                          |
| British Geological Survey GeoIndex Offshore (British Geological Survey, 2025)           | N/A                  | An online mapping tool that provides access to a range of marine geoscience data, primarily focusing on shallow geology and geophysics. The dataset provides information sediment classification and bedrock geology. Suitable for understanding the seabed composition and geology along the Bellrock OfTDA.                                                                                           |
| <b>Fish and Shellfish Ecology</b>                                                       |                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Spawning and nursery grounds of selected fish species in UK waters (Ellis et al., 2012) | N/A                  | Mapped extents of spawning and nursery grounds of various fish species, using the original maps produced by Coull et al. (1998), updated with newer data on larvae, juvenile, and egg abundance.                                                                                                                                                                                                        |

| Dataset                                                                                                                                  | Temporal Coverage | Description                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fisheries sensitivity maps in British Waters (Coull et al., 1998)                                                                        | N/A               | Mapped extents of the spawning and nursery grounds of various commercially important fish species and the relative intensity and duration of spawning.                                                  |
| Updating Fisheries Sensitivity Maps in British Waters (Aires et al., 2014)                                                               | N/A               | Modelled probability of larvae presence for various fish species.                                                                                                                                       |
| Developing Essential Fish Habitat maps for fish and shellfish species in Scotland Report (Franco et al., 2022)                           | N/A               | Modelled extent of essential fish habitat in Scottish waters for 16 species in offshore waters.                                                                                                         |
| Spawning grounds of Atlantic cod ( <i>Gadus morhua</i> ) in the North Sea (González-Irusta and Wright, 2016)                             | N/A               | Modelled extent of Atlantic cod spawning in the North Sea, using ICES bottom trawl survey data and environmental variables. Provides more granularity than the Coull et al. (1998) spawning map.        |
| Spawning grounds of whiting ( <i>Merlangius merlangus</i> ) (González-Irusta and Wright, 2017)                                           | N/A               | Modelled extent of whiting spawning in the North Sea, using ICES bottom trawl survey data and environmental variables. Provides more granularity than the Coull et al. (1998) spawning map.             |
| Spawning grounds of haddock ( <i>Melanogrammus aeglefinus</i> ) in the North Sea and West of Scotland (González-Irusta and Wright, 2016) | N/A               | Modelled extent of haddock spawning in the North Sea, using ICES bottom trawl survey data and environmental variables. Provides more granularity than the Coull et al. (1998) spawning map.             |
| ICES International Herring Larvae Surveys (ICES, 2026)                                                                                   | 1972 onwards      | The ICES programme of international Atlantic herring larval surveys in the North Sea and adjacent areas provides annual quantitative estimates of Atlantic herring larval abundance in Scottish waters. |
| Spatial patterns and trends in abundance of larval sandeel in the North Sea: 1950–2005 (Lynam et al., 2013)                              | 1950-2005         | Continuous plankton recorder data on larval sandeel <i>A. marinus</i> abundance in the North Sea over the period 1950-2005, averaged over ICES rectangles.                                              |
| A verified distribution model for the lesser sandeel ( <i>A. marinus</i> ) (Langton et al., 2021)                                        | N/A               | A species distribution model (hurdle model) to predict the occurrence and density of sandeel in the North Sea.                                                                                          |

| Dataset                                                                                                                                                                                                 | Temporal Coverage | Description                                                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Basking Shark</b>                                                                                                                                                                                    |                   |                                                                                                                                                                                                                        |
| Basking sharks in the northeast Atlantic: spatio-temporal trends from sightings in UK waters (Witt et al., 2012)                                                                                        | 1988-2008         | Analysis of 11,781 records (from 1988 to 2008) of basking shark sightings from two public recording databases operating in the UK.                                                                                     |
| Basking shark satellite tagging project: insights into basking shark ( <i>Cetorhinus maximus</i> ) movement, distribution and behaviour using satellite telemetry (Witt et al., 2016)                   | 2012-2014         | Results of research project to attach satellite tags to basking sharks in the summer months of 2012, 2013, and 2014 in the Hyskeir, Coll and Tiree areas.                                                              |
| Predicting habitat suitability for basking sharks ( <i>Cetorhinus maximus</i> ) in UK waters using ensemble ecological niche modelling (Austin et al., 2019)                                            | 2005-2014         | Habitat suitability model for basking shark generated using boat transect sightings data from 2005-2014 and environmental data.                                                                                        |
| Analysis of Basking Shark Watch Database 1987 to 2020 (Pikesly et al. 2024)                                                                                                                             | 1987-2020         | Report aiming to validate public sightings data between 1987 and 2020 and describe spatial and temporal patterns for the Sea of the Hebrides ncMPA, Scotland and wider geographical limits.                            |
| Statistical approaches to aid the identification of Marine Protected Areas for minke whale, Risso's dolphin, white-beaked dolphin and basking shark (Paxton et al., 2014)                               | 2000-2012         | Report combining data from marine megafauna surveys to create a spatially indexed set of adjusted densities to inform seasonal and annual predictions of relative density over the entire Scottish territorial waters. |
| <b>Diadromous Fish</b>                                                                                                                                                                                  |                   |                                                                                                                                                                                                                        |
| Review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel in Scotland's coastal environment: implications for the development of marine renewables (Malcolm et al., 2010) | N/A               | A review of migratory routes and behaviour of Atlantic salmon, sea trout and European eel <i>Anguilla anguilla</i> in Scotland's coastal environment, and the implications for marine developments.                    |
| Scottish salmon and sea trout fishery statistics (Scottish Government, 2026)                                                                                                                            | 1952-2025         | A summary of the salmon and sea trout fishery catch statistics updated for the 2024 season.                                                                                                                            |

| Dataset                                                                                                                                                                                                | Temporal Coverage | Description                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combining acoustic tracking and hydrodynamic modelling to study migratory behaviour of Atlantic salmon ( <i>Salmo salar</i> ) smolts on entry into high-energy coastal waters (McIlvenny et al., 2021) | 2016              | Acoustic telemetry tracking of Atlantic salmon smolts in coastal waters surrounding the mouth of the River Wick.                                                                                                                                                                                                                                    |
| Migration of Atlantic salmon ( <i>Salmo salar</i> ) smolts and post-smolts from a Scottish east coast river (Main, 2021)                                                                               | 2017 and 2018     | Study assessing whether salmon smolt survival is consistent along the River Dee in Aberdeenshire, through Aberdeen harbour and early in their marine migration out to ten kilometres from shore. The study also looks at the patterns of directional movement in the sea during the first 10 km of post-smolt migration to distant feeding grounds. |
| Salmon Rivers in Scotland (Scottish Government, 2008)                                                                                                                                                  | N/A               | National map showing rivers where Atlantic salmon are either present or likely to be present.                                                                                                                                                                                                                                                       |
| The status of juvenile Atlantic salmon and brown trout populations in Scotland's rivers: The National Electrofishing Programme for Scotland 2023 (Jackson et al., 2025)                                | 2018-2023         | Provides a robust, national-scale evidence base on the status and trends of freshwater salmonid populations (Atlantic salmon and brown trout) in Scotland, including identification of pressures and regional variability in population health.                                                                                                     |
| <b>Commercial Fisheries Activity</b>                                                                                                                                                                   |                   |                                                                                                                                                                                                                                                                                                                                                     |
| UK Sea Fisheries Annual Statistics (Marine Management Organisation, 2026)                                                                                                                              | 2020-2024         | UK commercial fisheries dataset of landings (weight and value) by ICES rectangle, used to identify commercially targeted fish and shellfish species relevant to the Fish and Shellfish Ecology Local Study Area.                                                                                                                                    |
| <b>Biological Records</b>                                                                                                                                                                              |                   |                                                                                                                                                                                                                                                                                                                                                     |
| National Biodiversity Network Atlas – biological records (National Biodiversity Network, 2026)                                                                                                         | Various           | Dataset provides a comprehensive source of species occurrence records across the UK, including marine and coastal species. Suitable for understanding species distributions within the vicinity of the Bellrock OfTDA.                                                                                                                              |
| <b>Sensitivity and Impact Assessment</b>                                                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                     |
| Marine Evidence-Based Sensitivity Assessments (Tyler-Walters et al., 2023)                                                                                                                             | N/A               | Evidence based resource providing sensitivity assessments for fish and shellfish species to a range of anthropogenic pressures. Supports interpretation of potential impacts and subsequent effects on fish and shellfish receptors and informs impact assessment.                                                                                  |

| Dataset                                                                                                              | Temporal Coverage | Description                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Feature Activity Sensitivity Tool (FeAST) (FeAST Working Group, 2026)                                                | N/A               | Tool providing sensitivity information for Scottish marine features, including PMFs, to human activities. Supports assessment of potential impacts on fish and shellfish receptors in Scottish waters. |
| Sound Exposure Guidelines for Fishes and Sea Turtles (Popper et al., 2014)                                           | N/A               | Provides internationally recognised criteria for assessing potential impacts of UWN on fish and shellfish receptors, used to classify hearing groups and impact thresholds.                            |
| <b>Project-specific Evidence</b>                                                                                     |                   |                                                                                                                                                                                                        |
| Consenting documents for nearby projects, including Green Volt, Ossian, Salamander, Berwick Bank Offshore Wind Farms | Various           | Impact assessment and site survey reports for relevant Offshore Wind Farms projects.                                                                                                                   |

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### 7.4.2.1 Site-specific Surveys

549. Site-specific surveys undertaken within the Bellrock WFDA, which overlaps with part of the Bellrock OfTDA Scoping Boundary, will be used to inform the baseline characterisation where spatially relevant (**Table 7.4**).
550. In addition, site-specific environmental and geophysical surveys will be undertaken within the remaining Bellrock OfTDA in 2026, as noted in **Table 7.4**.
551. Subject to survey progress, the geophysical survey data collected within the remainder of the Bellrock OfTDA (i.e. the area outside the overlap with the Bellrock WFDA) may also be used to further inform the fish and shellfish baseline. Should the geophysical survey data not be available to inform the EIA, the assessment will rely on existing available datasets and publicly available information sources. The environmental survey (grab sampling, drop-down camera and eDNA) will be used to characterise seabed types, habitats, and associated fish and shellfish communities within the Bellrock OfTDA.
552. The combined use of existing Bellrock WFDA survey data and targeted Bellrock OfTDA surveys will ensure sufficient spatial coverage to inform the fish and shellfish ecology baseline and assessment.
553. **Table 7.4** summarises the surveys relevant to fish and shellfish ecology that have been, or will be, undertaken to inform the baseline.

**Table 7.4: Site-specific Surveys Relevant to Fish and Shellfish Ecology**

| Survey Name                                                                                                          | Survey Coverage                                    | Survey Year | Description                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bellrock WFDA geophysical survey, e.g. Side-Scan Sonar and Multi-Beam Echosounder                                    | Bellrock WFDA                                      | 2023        | Geophysical and benthic survey data will provide context on the habitat types present in the Bellrock OfTDA, and this will provide context to the fish and shellfish baseline.                                                                                           |
| Bellrock WFDA environmental survey, e.g. drop-down camera and grab sampling, including sediment contaminant analysis | Bellrock WFDA                                      | 2023        | In addition, the Particle Size Analysis data from grab samples will be used to inform the baseline for Atlantic herring spawning and sandeel habitat suitability.<br><br>Sediment samples will also be assessed against Cefas Action Levels for contaminants.            |
| Bellrock WFDA eDNA water samples                                                                                     | Bellrock WFDA                                      | 2023        | eDNA samples have been collected from the Bellrock WFDA and these will be used to provide context to the baseline characterisation.                                                                                                                                      |
| Bellrock OfTDA geophysical survey                                                                                    | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | Geophysical data will be used to characterise seabed and sub-surface conditions and inform the identification of habitat types and potential fish and shellfish habitats within the Bellrock OfTDA, including habitats associated with key life stages such as spawning. |

| Survey Name                                                              | Survey Coverage                                    | Survey Year | Description                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------|----------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bellrock OfTDA environmental survey (grab sampling and drop-down camera) | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | Benthic survey data, including drop-down camera and grab samples, will be used to characterise seabed habitats and inform habitat suitability for fish and shellfish receptors, including Atlantic herring spawning and sandeel habitats through particle size analysis. Sediment samples will also be analysed for contaminants and assessed against Cefas Action Levels. |
| Bellrock OfTDA eDNA water samples                                        | Bellrock OfTDA excluding the overlap with the WFDA | 2026        | eDNA samples will be collected from the Bellrock OfTDA and these will be used to provide context to the baseline characterisation.                                                                                                                                                                                                                                         |

554. In addition, noise modelling will be undertaken as part of the Bellrock OfTDA EIA. Site-specific UWN modelling will be undertaken to inform the assessment of UWN impacts on fish and shellfish receptors (and marine mammals, see **Chapter 8: Marine Mammals**), using Popper et al. (2014) to define impact thresholds.

### 7.4.3 Spawning and Nursery Grounds

555. The Scottish North Sea supports a diverse assemblage of ecologically and commercially important fish and shellfish species. A review of available data (**Section 7.4.2**) has been undertaken to characterise the use of the fish and shellfish local study area in relation to key life cycle stages. This review focused on the identification of recognised spawning and nursery grounds<sup>31</sup>, and where available, the relative intensity of these functions.
556. The fish and shellfish local study area supports a range of pelagic and demersal fish, elasmobranchs, and shellfish species characteristic of the Scottish North Sea. **Table 7.5** identifies the known spawning and nursery grounds for these species and confirms whether these overlap with the fish and shellfish local study area. Where available, the relative intensity of spawning and nursery activity is also presented.
557. **Figure 7.2** and **Figure 7.7 (Appendix A (Volume 1))** illustrate the spatial extent and relative intensity of spawning grounds within and surrounding the fish and shellfish local study area. Nursery grounds are presented in **Figure 7.8** to **Figure 7.13 (Appendix A (Volume 1))**.

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<sup>31</sup> It is recognised that available spawning and nursery ground datasets differ in origin, age, spatial resolution, and confidence, ranging from broad-scale historic sensitivity layers to more recent modelled distributions. These datasets are used at the scoping stage to identify potential ecological function and will be interpreted proportionately in the EIA.



**Table 7.5: Summary of Spawning and Nursery Ground Overlap with the Fish and Shellfish Local Study Area, and Associated Intensity (Where Available)**

| Species                                         | Hearing Group <sup>1</sup> | Overlap with the Fish and Shellfish Local Study Area |                              | Conservation Importance (Scottish Context)                                                      |
|-------------------------------------------------|----------------------------|------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------------------|
|                                                 |                            | Spawning Grounds                                     | Nursery Grounds              |                                                                                                 |
| Pelagic Fish                                    |                            |                                                      |                              |                                                                                                 |
| Atlantic Herring                                | Group 3                    | Yes (undetermined intensity)                         | Yes (high and low intensity) | Scottish Biodiversity List, International Union for Conservation of Nature (IUCN) Red List, PMF |
| Blue whiting<br><i>Micromesistius poutassou</i> | Group 3                    | No                                                   | Yes (undetermined intensity) | PMF                                                                                             |
| Horse mackerel<br><i>Trachurus trachurus</i>    | Group 1                    | No                                                   | No                           | PMF                                                                                             |
| Mackerel <i>Scomber scombrus</i>                | Group 1                    | Yes (lower intensity)                                | Yes (low intensity)          | PMF                                                                                             |
| Sprat <i>Sprattus sprattus</i>                  | Group 3                    | Yes (undetermined intensity)                         | Yes (undetermined intensity) | N/A                                                                                             |
| Demersal Fish                                   |                            |                                                      |                              |                                                                                                 |
| Anglerfish <i>Lophius piscatorius</i>           | Group 1                    | No                                                   | Yes (low intensity)          | PMF                                                                                             |
| Atlantic cod                                    | Group 3                    | Yes (low intensity)                                  | Yes (high and low intensity) | Scottish Biodiversity List, OSPAR Annex V, IUCN Red List, and PMF                               |
| European hake<br><i>Merluccius merluccius</i>   | Group 3                    | No                                                   | Yes (low intensity)          | Scottish Biodiversity List                                                                      |
| Haddock                                         | Group 3                    | No                                                   | Yes (undetermined intensity) | IUCN Red List                                                                                   |

| Species                                                 | Hearing Group <sup>1</sup> | Overlap with the Fish and Shellfish Local Study Area |                              | Conservation Importance (Scottish Context)                        |
|---------------------------------------------------------|----------------------------|------------------------------------------------------|------------------------------|-------------------------------------------------------------------|
|                                                         |                            | Spawning Grounds                                     | Nursery Grounds              |                                                                   |
| Lemon sole<br><i>Microstomus kitt</i>                   | Group 1                    | Yes (undetermined intensity)                         | Yes (undetermined intensity) | N/A                                                               |
| Ling <i>Molva molva</i>                                 | Group 3                    | No                                                   | Yes (low intensity)          | Scottish Biodiversity List and PMF                                |
| Norway pout<br><i>Trisopterus esmarkii</i>              | Group 3                    | Yes (higher and lower intensity)                     | Yes (undetermined intensity) | Scottish Biodiversity List and PMF                                |
| Plaice <i>Pleuronectes platessa</i>                     | Group 1                    | Yes (low intensity)                                  | Yes (low intensity)          | Scottish Biodiversity List                                        |
| Saithe <i>Pollachius virens</i>                         | Group 3                    | No                                                   | Yes (undetermined intensity) | PMF                                                               |
| Sandeel ( <i>A. marinus</i><br>and <i>A. tobianus</i> ) | Group 1                    | Yes (high and low intensity)                         | Yes (low intensity)          | Scottish Biodiversity List and PMF                                |
| Sole <i>Solea solea</i>                                 | Group 1                    | No                                                   | No                           | N/A                                                               |
| Whiting                                                 | Group 3                    | Yes (low intensity)                                  | Yes (high and low intensity) | Scottish Biodiversity List and PMF                                |
| <b>Elasmobranchs</b>                                    |                            |                                                      |                              |                                                                   |
| Common skate<br><i>Dipturus batis</i>                   | Group 1                    | No                                                   | Yes (low intensity)          | Scottish Biodiversity List, OSPAR Annex V, IUCN Red List, and PMF |
| Spotted ray <i>Raja montagui</i>                        | Group 1                    | No                                                   | Yes (low intensity)          | OSPAR Annex V and IUCN Red List                                   |
| Spurdog <i>Squalus acanthias</i>                        | Group 1                    | No                                                   | Yes (low intensity)          | OSPAR Annex V, IUCN Red List, and PMF                             |

| Species                                                                                                                                                                                                                                                          | Hearing Group <sup>1</sup> | Overlap with the Fish and Shellfish Local Study Area |                              | Conservation Importance (Scottish Context)                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------|------------------------------|--------------------------------------------------------------|
|                                                                                                                                                                                                                                                                  |                            | Spawning Grounds                                     | Nursery Grounds              |                                                              |
| Thornback ray <i>Raja clavate</i>                                                                                                                                                                                                                                | Group 1                    | No                                                   | No                           | Scottish Biodiversity List, OSPAR Annex V, and IUCN Red List |
| Tope shark <i>Galeorhinus galeus</i>                                                                                                                                                                                                                             | Group 1                    | No                                                   | Yes (low intensity)          | IUCN Red List                                                |
| Undulate ray <i>Raja undulata</i>                                                                                                                                                                                                                                | Group 1                    | No                                                   | No                           | IUCN Red List                                                |
| <b>Shellfish</b>                                                                                                                                                                                                                                                 |                            |                                                      |                              |                                                              |
| Nephrops <i>Nephrops norvegicus</i>                                                                                                                                                                                                                              | N/A                        | Yes (undetermined intensity)                         | Yes (undetermined intensity) | N/A                                                          |
| <p>Notes:</p> <p><sup>1</sup> Hearing Group Definitions:</p> <ul style="list-style-type: none"> <li>Group 1: Fish with No Swim Bladder or Other Gas Chamber; and</li> <li>Group 3: Fish in Which Hearing Involves a Swim Bladder or Other Gas Volume.</li> </ul> |                            |                                                      |                              |                                                              |

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## 7.4.4 Fish Assemblage

### 7.4.4.1 Pelagic Fish

558. UK Sea Fisheries Statistics for the period 2020 to 2024 (inclusive) (Marine Management Organisation (MMO), 2026) identify Atlantic herring, mackerel, and horse mackerel as the pelagic species landed from the fish and shellfish local study area, reflecting their commercial importance within the North Sea. Mean annual landings indicate that Atlantic herring dominates the pelagic catch, with a mean annual landed weight of 3,334 tonnes (T) and a mean annual landed value of £2,123,130. In comparison, mackerel contributes a mean annual landed weight of 61.29 T and a mean annual landed value of £77,149, while horse mackerel represents a negligible component of landings (mean annual landed weight of 0.64 T and mean annual landed value of £254).
559. In addition, PMF spatial data (NatureScot and JNCC, 2026) identify Atlantic herring, mackerel, and horse mackerel within the fish and shellfish local study area. These species are also identified in the MMO landings data (MMO, 2026), providing evidence of their occurrence and importance within the pelagic fish assemblage of the Scottish North Sea.
560. The importance of the fish and shellfish local study area for pelagic fish is further supported by the spawning and nursery ground assessment (**Section 7.4.3**), which identifies overlap with recognised spawning and nursery areas for Atlantic herring and mackerel. In addition, nursery grounds for blue whiting and spawning and nursery grounds for sprat are also identified within the fish and shellfish local study area. These species therefore contribute to the wider pelagic fish assemblage present within the fish and shellfish local study area and reinforce its ecological importance for early life stages of key pelagic species.
561. Together these species are considered to represent the pelagic fish assemblage within the fish and shellfish local study area. This characterisation will be further refined within the EIA to inform the assessment of potential impacts on pelagic fish receptors.

### 7.4.4.2 Demersal Fish

562. UK Sea Fisheries Statistics for the period 2020 to 2024 (inclusive) (MMO, 2026) identify a diverse demersal fish assemblage landed from the fish and shellfish local study area. Principal demersal species landed include haddock, whiting, plaice, sandeel, monks and anglers (anglerfish), Atlantic cod, grey gurnard *Eutrigla gurnardus*, European hake, saithe, witch *Glyptocephalus cynoglossus*, lemon sole, halibut *Hippoglossus hippoglossus*, dab *Limanda limanda*, red gurnard *Chelidonichthys cuculus*, turbot *Scophthalmus maximus*, and ling.
563. PMF spatial data (NatureScot and JNCC, 2026) also identify a range of demersal fish within the fish and shellfish local study area, including anglerfish, halibut, Atlantic cod, ling, Norway pout, saithe, sand goby *Pomatoschistus minutus*, sandeel, and whiting. These datasets provide consistent evidence of a diverse demersal fish assemblage associated with the seabed and near seabed habitats within the fish and shellfish local study area.
564. The importance of the fish and shellfish local study area for demersal fish is further supported by the spawning and nursery ground assessment (**Section 7.4.3**), which identifies overlap with recognised spawning and nursery areas for Atlantic cod, lemon sole, Norway pout, plaice, sandeel, and whiting. In addition to overlap with nursery grounds for anglerfish, haddock, European hake,

ling, and saithe. This overlap indicates the use of the fish and shellfish local study area by a range of demersal fish during important key cycle stages.

565. Together, these species are considered to represent the demersal fish assemblage within the fish and shellfish local study area. This characterisation will be further refined within the EIA to inform the assessment of potential impacts on demersal fish receptors.

#### 7.4.4.3 Elasmobranchs

566. UK Sea Fisheries Statistics for the period 2020 to 2024 (inclusive) (MMO, 2026) identify a range of elasmobranch species landed from the fish and shellfish local study area. Species landed include cuckoo ray *Leucoraja naevus*, thornback ray, spurdog, spotted ray, small-spotted catshark *Scyliorhinus canicula*, common skate, starry smooth hound *Mustelus asterias*, blonde ray *Raja brachyura*, and Arctic skate *Amblyraja hyperborea*.
567. PMF spatial data (NatureScot and JNCC, 2026) also identify basking shark and spurdog within the fish and shellfish local study area, providing further evidence of elasmobranch presence within the wider marine environment.
568. The importance of the fish and shellfish local study area for elasmobranchs is further supported by the spawning and nursery ground assessment (**Section 7.4.3**), which identifies nursery ground overlap for common skate, spotted ray, spurdog, and tope shark. These datasets indicate the occurrence of both benthic associated rays and skates, and more mobile shark species within the fish and shellfish local study area.
569. Together, these species are considered to represent the elasmobranch assemblage within the fish and shellfish local study area. This characterisation will be further refined within the EIA to inform the assessment of potential impacts on elasmobranch receptors.

#### 7.4.4.4 Diadromous Fish

##### 7.4.4.4.1 Diadromous Fish Species

570. Fish are considered diadromous where they migrate between marine and freshwater environments to complete their life cycles. This includes anadromous species, which migrate from the marine to the freshwater environment to spawn, and catadromous species, which migrate from the freshwater to marine environment to spawn.
571. Diadromous species likely to pass through the fish and shellfish local and regional study areas during migration, or during foraging and maturation phases, include Atlantic salmon, sea trout *Salmo trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, and European eel.
572. Atlantic salmon and sea trout, as well as sea lamprey and river lamprey are anadromous species, with predominantly marine adult life stages and spawning and nursery habitats located within freshwater systems. European eel are catadromous, migrating from freshwater to marine spawning and nursery habitats.
573. Several rivers along the northeast coast of Scotland, which discharge into the fish and shellfish local and regional study areas, are known to support Atlantic salmon and sea trout populations

(Scottish Government, 2008). Of these rivers, two are in close proximity to the landfall location for the Offshore Transmission Infrastructure, these rivers are the Carron Water and the Cowie Water. These river systems provide connectivity between freshwater spawning and nursery habitats and the marine environment within the study areas. In the absence of species-specific distribution data for all diadromous species, it is reasonable to assume that rivers supporting salmonids may also support populations of sea lamprey, river lamprey, and European eel.

574. Further characterisation of diadromous fish populations will be undertaken at the EIA stage, including interrogation of available datasets such as the National Electrofishing Programme for Scotland (Jackson et al., 2025), to inform understanding of the status and distribution of salmonid populations within river systems discharging into the fish and shellfish local and regional study areas.
575. Available evidence indicates that Scottish records of both allis shad *Alosa alosa* and twaite shad *Alosa fallax* (Annex II anadromous fish) are limited, with the only known spawning population of twaite shad thought to occur in the Solway Firth (Maitland and Lyle, 1995), and no confirmed spawning populations of allis shad in Britain (Maitland and Hatton-Ellis, 2003). Whilst occasional records of shad have been reported elsewhere in Scottish waters, these are considered to represent sporadic or transient occurrences, and there is no evidence of established populations in rivers discharging to the northeast coast of Scotland.
576. Consideration of connectivity with European sites designated for diadromous fish is provided in **Section 7.4.6**. In line with consultation with NatureScot (**Table 7.2**) and as set out in the **Bellrock OffTDA Habitats Regulations Appraisal Screening Report (Volume 2)**, diadromous fish will be considered in the EIA, where relevant, as individual receptors, rather than being considered within the shadow Habitats Regulations Appraisal.

#### 7.4.4.4.2 Freshwater Pearl Mussel

577. Freshwater pearl mussel (FWPM) *Margaritifera margaritifera* is a designated feature of several SACs on the east coast of Scotland (**Section 7.4.6**). Whilst not a diadromous fish species, the long-term persistence of FWPM populations is dependent on the availability of suitable diadromous fish hosts (Skinner et al., 2003).
578. Juvenile Atlantic salmon and sea trout act as host species for the larval stage of FWPMs (glochidia), which attach to fish gills in freshwater systems before detaching and settling onto substrate to mature. As such, the condition and abundance of salmonid populations within rivers connected to the marine environment are a key factor influencing FWPM populations.
579. This ecological dependency provides a pathway by which potential impacts on diadromous fish populations may indirectly influence FWPM populations within connected river systems. As such, FWPM will be considered along diadromous fish, where relevant, to the assessment.

### 7.4.5 Shellfish Assemblage

580. UK Sea Fisheries Statistics for the period 2020 to 2024 (inclusive) (MMO, 2026) identify a range of commercially important shellfish species landed from the fish and shellfish local study area, reflecting the presence of suitable benthic habitats within the North Sea. Principal species landed

include great scallop *Pecten maximus*, edible crab *Cancer pagurus*, Nephrops, European lobster *Homarus gammarus*, and velvet swimming crab *Necora puber*.

581. Other shellfish species are recorded within the MMO landings data (MMO, 2026) in lower quantities, indicating a broader shellfish assemblage associated with the fish and shellfish study area.
582. The distribution and abundance of shellfish species are closely linked to seabed characteristics, including sediment type and habitat structure. The environmental survey to be undertaken within the Bellrock OfTDA, comprising drop-down camera and grab sampling, will provide site-specific information on benthic habitats and biotope classification, alongside visual and sample-based evidence of epifaunal and infaunal species. This will support the identification of shellfish species and habitat associations within the Bellrock OfTDA.

#### 7.4.6 Designated Sites

583. A Zol of 60 km has been applied to the Bellrock OfTDA to identify designated sites for consideration within this assessment. This Zol is informed by the UWN modelling undertaken for the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026), which included assessment of piling activities associated with both Wind Farm Infrastructure and Offshore Transmission Infrastructure (OfSS(s)) installation (the approach to UWN modelling for the OfRCS(s) is presented in **Section 7.4.2.1**). The UWN modelling identified a maximum impact range of 60 km for stationary fish receptors based on Popper et al. (2014). Therefore, the application of a 60 km buffer is considered a precautionary approach at the scoping stage to ensure that all designated sites with potential connectivity to the Bellrock OfTDA are identified.
584. In addition, designated sites with features that are diadromous have been identified within the fish and shellfish regional study area. This approach reflects the migratory behaviour of these species and their potential to utilise marine waters over a wider geographic area during key life stages. As such, consideration of connectivity with riverine SACs supporting diadromous fish populations extends beyond the 60 km Zol applied for marine receptors.
585. The relevant designated sites are listed in **Table 7.6** and illustrated in **Figure 7.14**. The initial 60 km Zol is based on the hearing sensitivity of the most sensitive fish species, however sandeel do not have a swim bladder and are therefore the lowest sensitivity group (Group 1 as defined by Popper et al. (2014) regarding UWN) with no capacity to detect sound pressure waves (particle motion only). Modelled recoverable injury ranges for Group 1 fish from other recent offshore wind farms demonstrate that in the case of sandeel, significant effects are unlikely to occur at distances greater than 3.4 km. For more detail on this rationale see the **Bellrock OfTDA Marine Protected Area Screening Report (Volume 3)**.



**Table 7.6: Summary of Sites Designated for Fish and Shellfish Species Relevant to the Fish and Shellfish Ecology Local and Regional Study Areas**

| Designated Site Receptor           | Designation | Fish and Shellfish Qualifying Features          | Distance from Bellrock OfTDA 'As the Fish Swims' (i.e. Not Moving Over Land)    |
|------------------------------------|-------------|-------------------------------------------------|---------------------------------------------------------------------------------|
| Berriedale and Langwell Waters     | SAC         | Atlantic salmon                                 | 172 km northwest                                                                |
| Rannoch Moor                       | SAC         | FWPM                                            | 148 km (straight-line distance)                                                 |
| River Dee                          | SAC         | Atlantic salmon and FWPM                        | 6 km northwest                                                                  |
| River Derwent                      | SAC         | River lamprey and sea lamprey                   | 300 km south                                                                    |
| River Evelix                       | SAC         | FWPM                                            | 203 km northwest                                                                |
| River Moriston                     | SAC         | Atlantic salmon and FWPM                        | 250 km northwest                                                                |
| River Oykel                        | SAC         | Atlantic salmon and FWPM                        | 215 km northwest                                                                |
| River South Esk                    | SAC         | Atlantic salmon and FWPM                        | 40 km southwest                                                                 |
| River Spey                         | SAC         | Atlantic salmon, FWPM, and sea lamprey          | 140 km northwest                                                                |
| River Tay                          | SAC         | Atlantic salmon, river lamprey, and sea lamprey | 105 km southwest                                                                |
| River Teith                        | SAC         | Atlantic salmon, river lamprey, and sea lamprey | 190 km southwest                                                                |
| River Tweed                        | SAC         | Atlantic salmon, river lamprey, sea lamprey     | 125 km southwest                                                                |
| Tweed Estuary                      | SAC         | Sea lamprey and river lamprey                   | 120 km southwest                                                                |
| East of Gannet and Montrose Fields | ncMPA       | Ocean quahog aggregations                       | 45 km northeast                                                                 |
| Firth of Forth Banks Complex       | ncMPA       | Ocean quahog aggregations                       | Immediately adjacent (southern boundary of the Bellrock OfTDA Scoping Boundary) |
| Turbot Bank                        | ncMPA       | Sandeel                                         | 20 km north                                                                     |

## 7.4.7 Identification of Important Ecological Features

586. IEFs are defined as ecological receptors that are of importance and potentially affected by the Bellrock Offshore Transmission Infrastructure. As it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project related impacts (CIEEM, 2018).
587. For the purposes of this assessment, fish and shellfish receptors have been structured into five principal assemblage groupings: pelagic fish, demersal fish, elasmobranchs, diadromous fish, and shellfish. These assemblages provide the framework for describing baseline conditions (**Section 7.4.4**) and structuring the impact assessment.
588. In addition, spawning and nursery grounds are considered as distinct functional habitat-based receptor groups, reflecting the importance of the fish and shellfish local study area for key life stages of fish species. These receptors will be considered alongside assemblage-based receptors in impact assessment.
589. Within each assemblage and functional habitat group, a preliminary list of representative IEFs has been identified. Selection is undertaken at a functional group level and is based on ecological importance, conservation status, commercial relevance, and sensitivity to potential impact pathways associated with the Bellrock Offshore Transmission Infrastructure. Not all species identified within the baseline assemblages are taken forwards as IEFs; those not selected remain part of the wider assemblage context.
590. The assessment will focus on potential effects on these IEFs; however, conclusions are considered applicable to the wider assemblage or functional habitat group as a whole, including species or features not explicitly identified as IEFs.
591. The preliminary IEFs identified for each receptor grouping are presented in **Table 7.7**.
592. It is noted that the identification of IEFs is preliminary at the scoping stage and may be refined following further interrogation of baseline datasets at the EIA stage.

**Table 7.7: Fish and Shellfish Receptor Groups and Associated Important Ecological Features**

| Receptor Group             | Component IEFs                                                                                                                            |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Pelagic fish assemblage    | Atlantic herring, blue whiting, horse mackerel, mackerel, and sprat                                                                       |
| Demersal fish assemblage   | Anglerfish, Atlantic cod, European hake, haddock, halibut, lemon sole, ling, Norway pout, plaice, saithe, sand goby, sandeel, and whiting |
| Elasmobranch assemblage    | Basking shark, blonde ray, common skate, cuckoo ray, small-spotted catshark, spotted ray, spurdog, thornback ray, and tope shark          |
| Diadromous fish assemblage | Atlantic salmon, European eel, river lamprey, sea lamprey, and sea trout (and indirectly FWPM)                                            |
| Shellfish assemblage       | European lobster, edible crab, great scallop, and Nephrops                                                                                |
| Spawning grounds           | Atlantic cod, Atlantic herring, lemon sole, mackerel, Nephrops, Norway pout, plaice, sandeel, sprat, and whiting                          |

| Receptor Group  | Component IEFs                                                                                                                                                                                                               |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nursery grounds | Anglerfish, Atlantic cod, Atlantic herring, blue whiting, common skate, European hake, haddock, lemon sole, ling, mackerel, Nephrops, Norway pout, plaice, saithe, sandeel, sprat, spotted ray, spurdog, tope shark, whiting |

## 7.5 Potential Impacts

593. A range of potential impacts on fish and shellfish ecology have been identified which may occur during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure.

### 7.5.1 Potential Impacts During Construction

594. Potential impacts during the construction phase of the Bellrock Offshore Transmission Infrastructure may arise from activities associated with seabed preparation works and construction works. These include:

- Site preparation works<sup>32</sup> (including surveys, seabed preparation, unexploded ordnance (UXO) survey and/or clearance, debris clearance, and out of service cable/pipeline removal);
- Installation of marine exist ducts for the trenchless technique for offshore export cables at landfall (**Section 3.5.2.1**);
- Installation of OfSS(s) and OfRCS(s) (**Section 3.5.2.2**);
- Installation of offshore export cables and interconnector cable(s) (**Section 3.5.2.3**); and
- The use of vessels for site preparation and construction works (**Section 3.5.2.4**).

595. These activities may result in the following potential impact pathways:

- Physical disturbance and temporary habitat loss of seabed habitats;
- Increased SSC and sediment deposition;
- Remobilisation of existing contaminated sediments;
- Accidental release of pollutants;
- Introduction and/or spread of marine INNS;
- UWN and vibration;
- Changes in commercial fishing pressure; and
- Disturbance and collision from vessels.

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<sup>32</sup> For the purposes of EIA, site preparation is assessed under construction works.

596. Impact pathways which extend into the operational life of the Bellrock Offshore Transmission Infrastructure (e.g. permanent habitat loss) will be considered as part of the O&M phase assessment and are therefore not considered in the construction phase assessment to avoid duplication.

## **7.5.2 Potential Impacts During Operation and Maintenance**

597. Potential impacts during the O&M phase of the Bellrock Offshore Transmission Infrastructure arise from both the long-term presence and operation of infrastructure on the seabed and periodic, planned and unplanned, maintenance activities.
598. The presence of infrastructure, including FBSSs for both the OfSS(s) and the OfRCS(s) and any associated scour protection, offshore export cables, interconnector cable(s) (where both offshore export cables and interconnector cable(s) are surface laid), and any associated cable protection, will result in permanent habitat loss and/or long-term modification of seabed habitats within the footprint of the infrastructure. In addition, the presence of energised offshore export cables and interconnector cable(s) will give rise to electromagnetic fields (EMF) and localised thermal emissions, which may influence fish and shellfish species in the immediate vicinity of the cables. Planned and unplanned maintenance activities, such as inspections, repair, and replacement works, may give rise to localised and temporary physical disturbance and habitat loss, similar in nature to that occurring during the construction phase, but typically of a smaller spatial extent and lower magnitude.
599. These activities may result in the following potential impact pathways:
- Physical disturbance and temporary habitat loss of seabed habitats;
  - Permanent habitat loss resulting from installation of seabed infrastructure;
  - Increased SSCs and sediment deposition;
  - Remobilisation of existing contaminated sediments;
  - Accidental release of pollutants;
  - Introduction and/or spread of marine INNS;
  - Colonisation of artificial hard substrate associated with installed infrastructure;
  - EMF generated by energised subsea cables;
  - Thermal emissions from energised subsea cables;
  - UWN and vibration;
  - Entanglement with subsea infrastructure;
  - Changes in commercial fishing pressure; and
  - Disturbance and collision from vessels.

### 7.5.3 Potential Impacts During Decommissioning

600. It is anticipated that the decommissioning impacts would be broadly similar in nature to those identified for the construction phase (**Section 7.5.1**), although the magnitude of impact is likely to be lower. For example, where construction may require piling and/or seabed preparation, decommissioning would likely comprise removal of infrastructure and cutting of piles to seabed level, potentially resulting in reduced seabed disturbance compared to construction activities.

### 7.5.4 Embedded Mitigation Measures

601. Embedded mitigation has been identified, as presented in **Table 7.8** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified through the EIA process where the assessment identifies the potential for significant adverse effects. Where secondary mitigation is proposed, the impacts will be reassessed to determine the effectiveness of those measures and any resulting residual effect.
602. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 7.8: Embedded Mitigation Measures Relevant to Fish and Shellfish Ecology**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                               | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                       |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                        | Minimising sediment suspension and dispersal during seabed preparation activities will limit the extent and duration of sediment plumes and associated deposition, reducing the potential for effects on fish and shellfish receptors, including sensitive life stages and habitats.                                  | Primary         |
| X                          | ✓   | X               | Offshore export cables and interconnector cable(s) will be installed with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to avoid the need for external cable protection. Cable protection will only be used where adequate burial cannot be achieved and will be minimised so far as reasonably practicable. The requirement for, and extent of, any cable protection will be determined through a post-consent Cable Burial Risk Assessment (CBRA) (see row below relating to the CBRA). | Maximising cable burial and minimising the use of external cable protection will reduce the extent of disturbance and permanent habitat loss, thereby reducing the potential for effects on fish and shellfish receptors.                                                                                             | Primary         |
| X                          | ✓   | X               | Scour protection (e.g. concrete mattresses, rock placement, grout bags, artificial frond mats), will prevent scour during the operational life of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                       | Installation of scour protection will prevent seabed erosion around the Bellrock Offshore Transmission Infrastructure during O&M, thereby reducing the potential for ongoing seabed disturbance and sediment mobilisation during O&M. This will help minimise changes to habitats used by fish and shellfish species. | Primary         |
| X                          | ✓   | X               | Where an alternating current design is used, armoured 3-phase single core (trefoil arrangement) high voltage submarine cables will be used, to minimise both electric and magnetic fields. Offshore export cables and interconnector                                                                                                                                                                                                                                                                                                       | Use of cable design and installation measures that minimise EMFs and thermal emissions will reduce the potential for behavioural responses and sensory disturbance in species sensitive to these effects. Maximising cable burial depth will also                                                                     | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                      | Relevance to Assessment                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                          |                 |
|                            |     |                 | cable(s) will be buried or protected, with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to reduce the impact of EMFs and thermal emissions, and to minimise disturbance. Cable trench width may also vary to accommodate greater burial depths (subject to the conclusions of a CBRA), further minimising disturbance to habitats and species. | minimise the spatial extent of seabed disturbance, thereby reducing potential effects on fish and shellfish species and the habitats they utilise.                                                                                                                                                                       |                 |
| ✓                          | X   | X               | Material displaced during cable burial activities will be backfilled, where necessary.                                                                                                                                                                                                                                                                                                           | Backfilling of displaced material following cable burial will promote the reinstatement of seabed conditions and reduce the extent and duration of habitat disturbance. This will minimise potential effects on fish and shellfish species associated with seabed disturbance and temporary habitat loss.                | Primary         |
| X                          | ✓   | X               | Subsea infrastructure will be subject to routine monitoring to ensure marine growth remains within design tolerance. Localised cleaning will be undertaken when marine growth is likely to exceed or reach design tolerance.                                                                                                                                                                     | Routine monitoring and localised cleaning of marine growth on submerged surfaces of the Bellrock Offshore Transmission Infrastructure will minimise the extent of maintenance activities. This will limit disturbance to fish and shellfish species and help minimise localised effects on habitats associated with O&M. | Primary         |
| ✓                          | X   | X               | The Bellrock Offshore Transmission Infrastructure will comprise fixed-bottom OfSS(s) and fixed-bottom OfRCS(s). Floating substructures are not proposed.                                                                                                                                                                                                                                         | Use of fixed-bottom OfSS(s) and OfRCS(s) rather than floating substructure will avoid the need for moorings and anchors. This will reduce the extent of habitat disturbance and potential interactions with fish and shellfish species.                                                                                  | Primary         |
| ✓                          | ✓   | X               | A detailed CBRA will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will                                                                                                                                                                                                    | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. By                                                                                                                       | Primary         |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                             | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                     |                 |
|                            |     |                 | be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed.                                                                                                                                                                                                                                                                                                                                                                                                                     | identifying where burial can be achieved and limiting the use of alternative protection where practicable, the potential for effects on fish and shellfish species and their habitats will be reduced.                                                                                                                                                              |                 |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                                                                                                                                                                                                                                                                        | Periodic geophysical surveys and remedial works, where required, will maintain cable burial and minimise the extent of exposed offshore export cables/interconnector cable(s). This will reduce the potential for ongoing habitat disturbance and associated effects on fish and shellfish species throughout the construction and O&M.                             | Primary         |
| ✓                          | X   | X               | <p>Implementation of soft start and ramp-up measures for piling (which would reduce UWN effects), will be set out in the Piling Noise Mitigation Plan (PNMP) and part of the Marine Mammal Mitigation Protocol (MMMP) for piling activities.</p> <p>Each piling event would commence with a soft start at a lower hammer energy followed by a gradual ramp-up for at least 20 minutes to the maximum hammer energy required. The soft start and ramp-up allow mobile species to move away from the area before the maximum hammer energy with the greatest noise impact area is reached.</p> | Implementation of soft start and ramp-up procedures during piling will reduce the potential for sudden exposure of fish species to high UWN levels by providing an opportunity for mobile species to move away from the area before peak hammer energies are reached. This will reduce the potential for injury and behavioural disturbance associated with piling. | Primary         |
| ✓                          | X   | X               | A trenchless technique will be used at the landfall to avoid direct disturbance to the intertidal and shallow subtidal environment, thereby reducing habitat loss and seabed disturbance.                                                                                                                                                                                                                                                                                                                                                                                                    | Use of a trenchless technique at the landfall will avoid direct disturbance to intertidal and shallow subtidal habitats, reducing habitat loss, seabed disturbance and associated increases in suspended sediments. This will minimise the                                                                                                                          | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
|                            |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | potential for effects on fish and shellfish species and the habitats they utilise in the landfall area.                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |
| ✓                          | ✓   | ✓               | <p>Development of and adherence to a Cable Plan (CaP).</p> <p>The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The CaP will ensure that cable routing, installation methods, burial requirements and any necessary protection measures are appropriately designed and managed. This will help minimise the extent of seabed disturbance and the requirement for cable protection, thereby reducing the potential for impacts on fish and shellfish species and supporting the long-term integrity of habitats.                                                                                                                            | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&amp;M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best</p> | Implementation of a VMNSP will support the management of vessel movements throughout construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure, reducing the potential for disturbance to fish and shellfish species arising from vessel presence, UWN and physical interactions. The adoption of defined transit corridors and recognised good practice for vessel operations, where practicable, will further minimise the spatial extent and frequency of vessel-related disturbance. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                      | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | X               | Development of and adherence to a Marine Pollution Contingency Plan (MPCP).<br><br>The MPCP will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.                                                                                                                                                                   | Implementation of a MPCP will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will minimise the potential for adverse effects on fish and shellfish species and their habitats arising from pollution events.                                                                 | Tertiary        |
| ✓                          | ✓   | X               | An Environmental Management Plan (EMP) will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                    | Implementation of an EMP will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise the potential for adverse effects on fish and shellfish species and their habitats arising from the Bellrock Offshore Transmission Infrastructure and support the adoption of good environmental practice. | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a PNMP.<br><br>The PNMP will be developed in consultation with the MD-LOT and NatureScot and prepared in accordance with the Marine Directorate guidance on mitigation and monitoring plans (Marine Directorate, 2025), which sets out prescriptive requirements for what the PNMP should cover.<br><br>The PNMP will be submitted to MD-LOT for approval prior to the commencement of piling, | Implementation of a PNMP will reduce the potential for UWN effects associated with pile installation through the application of appropriate mitigation and management measures. This will minimise the risk of behavioural disturbance, injury and other noise-related effects on fish species, including those sensitive to UWN during key life stages.                                     | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | outlining mitigation and management measures that will be implemented during pile installation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | X               | <p>Development of, and adherence to, a MMMP for piling.</p> <p>The MMMP for piling will be developed prior to commencement of construction and based upon best available information, methodologies, industry best practice, latest scientific understanding, current guidance and detailed project design.</p> <p>The MMMP for piling will be developed in consultation with MD-LOT and NatureScot, and will detail the proposed mitigation measures to reduce the risk of any physical or permanent auditory injury/change in hearing sensitivity (Permanent Threshold Shift) to marine mammals and impacts of disturbance during all piling operations.</p> | Implementation of a MMMP for piling will reduce the potential for UWN effects through the application of appropriate mitigation measures during pile installation. While primarily designed to protect marine mammals, the measures will also contribute to reducing the likelihood and extent of noise-related disturbance to fish and shellfish receptors. | Tertiary        |
| ✓                          | X   | X               | <p>A detailed MMMP will be prepared for UXO clearance. The MMMP for UXO clearance will ensure there are adequate mitigation measures to minimise the risk of any physical or permanent auditory injury to marine mammals as a result of UXO clearance.</p> <p>The most suitable mitigation measures, based upon best available information and methodologies at that time, will be utilised. The MMMP for UXO clearance will be prepared in consultation with MD-LOT and NatureScot.</p>                                                                                                                                                                       | Implementation of a MMMP for UXO clearance will support the application of measures to reduce UWN generated during UXO clearance. While primarily intended to protect marine mammals, these measures will also help reduce the potential for noise-related effects on fish species, including behavioural disturbance and injury.                            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
| ✓                          | X   | X               | If required, mitigation for geophysical surveys will follow the Joint Nature Conservation Committee (2017) 'Guidelines for Minimising the Risk of Injury to Marine Mammals from Geophysical Surveys'.                                                                                                                                                                                              | Implementation of recognised good practice mitigation during geophysical surveys will reduce the potential for UWN disturbance associated with survey activities. While primarily aimed at minimising risks to marine mammals, these measures will also contribute to reducing the potential for behavioural disturbance to fish species.                                                                                                                                                   | Tertiary        |
| ✓                          | X   | X               | Development of a UXO Threat and Risk Assessment.<br><br>All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).                                                                      | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and application of appropriate clearance methods and risk mitigation measures, helping to minimise the number and scale of UXO detonations where practicable. This will reduce the potential for UWN effects on fish and shellfish species, including behavioural disturbance and injury.                                                                                                             | Tertiary        |
| ✓                          | ✓   | X               | Development and implementation of a Fisheries Mitigation, Monitoring and Communication Plan. The Fisheries Mitigation, Monitoring and Communication Plan will describe the mitigation, monitoring, and communication measures to be implemented during the construction and O&M of the Bellrock Offshore Transmission Infrastructure to avoid or minimise adverse effects on commercial fisheries. | Implementation of a Fisheries Mitigation, Monitoring and Communication Plan will support ongoing engagement with the fishing industry and the application of measures to avoid or reduce interactions between the Bellrock Offshore Transmission Infrastructure and commercial fishing interests. This will help minimise potential effects on commercially important fish and shellfish species and support the management of fisheries-related receptors throughout construction and O&M. | Tertiary        |
| ✓                          | ✓   | X               | Preparation of an Invasive Non-native Species Mitigation Plan (INNSMP) to include provisions for invasive non-native species management.                                                                                                                                                                                                                                                           | Implementation of an INNSMP will reduce the risk of introducing and spreading invasive non-native species through project vessels and equipment. Application of appropriate biosecurity measures                                                                                                                                                                                                                                                                                            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                   | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                           |                 |
|                            |     |                 | <p>The INNSMP will implement biosecurity measures in line with international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>▪ International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>▪ The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive non-native species from ballast water; and</li> <li>▪ Consideration of guidance from the International Maritime Organization (IMO) (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | and industry guidance will help protect native fish and shellfish species and their habitats from ecological changes associated with invasive species introductions.                                                                                                                                                                                                                      |                 |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>▪ MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>▪ The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>▪ Consideration of guidance from the IMO (2023) on the control and management of</li> </ul>                                                                                                                                                                                                                                 | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading invasive non-native species. This will help protect native fish and shellfish species and their habitats from ecological changes associated with the establishment of invasive species. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | ships' biofouling to minimise the transfer of invasive aquatic species.                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | ✓               | Any dropped objects during works associated with the Bellrock OfTDA will be reported in line with MD-LOT's guidance on the 'accidental deposit of an object at sea' (Marine Directorate, 2024) and objects will be recovered where they pose a hazard to other marine users and where recovery is practicable.                                                                                                                                                                                                       | Reporting and, where practicable, recovering dropped objects will minimise the potential for long-term obstruction or disturbance of seabed habitats. This will reduce the likelihood of localised effects on fish and shellfish species and help maintain the integrity of habitats used by these receptors                                 | Tertiary        |
| X                          | X   | ✓               | Development of, and adherence to, a Decommissioning Programme.<br><br>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.                                                                                                                                                                                      | Implementation of a Decommissioning Programme will ensure that decommissioning is planned and undertaken in a manner that minimises environmental disturbance and supports the protection of marine habitats. This will reduce the potential for adverse effects on fish and shellfish species.                                              | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.<br><br>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols. | Implementation of a Construction Method Statement will ensure that construction works are undertaken in a controlled and coordinated manner, with measures in place to avoid or reduce environmental disturbance. This will minimise the potential for effects on fish and shellfish species and their habitats arising during construction. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                          | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | <p>Regular inspection and maintenance of the Bellrock Offshore Transmission Infrastructure, including subsea surveys and removal of debris where required, will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the need for more extensive corrective works. This will reduce the potential for disturbance to fish and shellfish species and their habitats.</p> | Tertiary        |



## 7.6 Scoping of Potential Impacts

### 7.6.1 Construction Phase

#### 7.6.1.1 Physical Disturbance and Temporary Habitat Loss of Seabed Habitats

603. Physical disturbance and temporary habitat loss of seabed habitats during the construction phase has the potential to occur because of site preparation works and construction works, including the installation of the FBSSs for the OfSS(s) and the OfRCS(s), offshore export cables, and interconnector cable(s). These activities may result in direct disturbance of all fish and shellfish receptors, with the exception of the pelagic fish assemblage, within the footprint of the works, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. As such, this impact has the potential to affect fish and shellfish receptors within the fish and shellfish local study area and will therefore be **scoped in** for further assessment in the EIA.

#### 7.6.1.2 Increased Suspended Sediment Concentrations and Sediment Deposition

604. Increased SSCs and associated sediment deposition may occur during the construction phase because of site preparation works, namely seabed preparation, and construction works, including the installation of FBSSs for the OfSS(s) and the OfRCS(s), offshore export cables, and interconnector cable(s). These activities can result in the temporary suspension and subsequent settlement of sediments, leading to changes in local sediment dynamics. This has the potential to affect all fish and shellfish receptors, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. This impact will therefore be **scoped in** for further assessment in the EIA.

#### 7.6.1.3 Remobilisation of Existing Contaminated Sediments

605. Remobilisation of contaminated sediments may occur during the construction phase because of site preparation works, namely seabed preparation, and construction works, including the installation of the FBSSs for the OfSS(s) and the OfRCS(s), offshore export cables, and interconnector cable(s), which may disturb and resuspend sediments. Where contaminants are present, this may result in the release and redistribution of contaminants within the water column and subsequent deposition, with the potential to affect all fish and shellfish receptors, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. On a precautionary basis, this impact is currently **scoped in** for further assessment in the EIA. However, sediment contamination analysis will be undertaken on samples collected during the site-specific environmental survey (**Section 7.4.2.1**). Should contaminant levels be below relevant threshold levels (e.g. Cefas Action Levels), this impact will be **scoped out** of further assessment in the EIA.

#### 7.6.1.4 Accidental Release of Pollutants

606. Accidental spills and pollution events can occur from vessels and installation techniques required for the installation and operation of the Offshore Transmission Infrastructure.

607. As discussed in **Section 7.5.4**, all vessels must comply with MARPOL. An EMP or similar will also be put in place and implemented to ensure all works are undertaken in line with best practice for

working in the marine environment. An MPCP will set out the provisions and response procedures in the event of pollution incidents (i.e. hydrocarbon release).

608. As a result of these embedded mitigation measures, it is considered that the risk to the marine environment, and therefore fish and shellfish receptors, resulting from a spill is negligible and should a spill occur, the MPCP will be in place to mitigate any impacts in a timely and effective manner. Therefore, it is considered that no significant effect would occur and because of these embedded mitigation measures, it is proposed that this impact is **scoped out** of the EIA. This is in line with the approach agreed for the **Bellrock WFDA EIA Report** (MD-LOT, 2024).

#### 7.6.1.5 Introduction and/or Spread of Marine INNS

609. Site preparation works and construction works have the potential to introduce or facilitate the spread of marine INNS through vectors such as vessel movements, biofouling on submerged surfaces, and the transfer of equipment and materials. Without appropriate controls, these pathways could result in the introduction or spread of marine INNS within the marine environment.
610. However, embedded mitigation measures (**Section 7.5.4**) are proposed in line with industry best practice to manage marine INNS risk. This includes the development and implementation of a site-specific INNSMP, which will apply to both construction and O&M phases of the Bellrock Offshore Transmission Infrastructure. The INNSMP will be developed in accordance with established biosecurity principles (Payne et al., 2014) and will identify activities with potential marine INNS risk, define critical control points, and set out appropriate control measures to minimise the risk of introduction and spread. These control measures will be informed by relevant international guidance, including the International Convention for the Control and Management of Ships' Ballast Water and Sediments and the IMO Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species (IMO, 2023). In addition, the Bellrock Offshore Transmission Infrastructure will comprise fixed-bottom OfSS(s) and OfRCS(s); therefore, the potential marine INNS introduction pathway associated with ballast water management of floating substructures is avoided.
611. With the implementation of these embedded mitigation measures, namely the INNSMP, the risk of introduction and/or spread of marine INNS is considered to be reduced to a level where significant effects are not anticipated. It is proposed that this impact pathway is therefore **scoped out** of the EIA. This is in line with the approach agreed for the **Bellrock WFDA EIA Report** (MD-LOT, 2024).

#### 7.6.1.6 Underwater Noise and Vibration

612. UWN and vibration may be generated during the construction phase because of site preparation works, including geophysical surveys and UXO clearance, vessel activity, interconnector and offshore export cable installation, and piling associated with the installation of FBSSs for the OfSS(s) and OfRCS(s).
613. Vessel activity and cable installation are expected to generate predominantly non-impulsive, low-level UWN. These sources are generally of limited magnitude and are not considered to represent a significant impact pathway for most fish and shellfish receptors.
614. In contrast, impulsive UWN may arise from piling activities associated with the installation of FBSSs and from UXO clearance (if required as part of the site preparation works). These sources have the potential to generate elevated sound pressure levels capable of resulting in behavioural

disturbance and, at close range, auditory injury and even mortality. While these activities will be temporary and spatially limited, the potential Zol may extend over a wider area.

615. Given the sensitivity of certain fish and shellfish receptors to impulsive UWN, and the potential for impact at a range of spatial scales, UWN and vibration is considered a relevant impact pathway for fish and shellfish receptors and is therefore **scoped in** for further assessment in the EIA.

#### **7.6.1.7 Changes in Commercial Fishing Pressure**

616. Construction of the Bellrock Offshore Transmission Infrastructure has the potential to result in displacement of commercial fishing activity within the Bellrock OfTDA. This may lead to changes in spatial patterns of fishing effort, including a reduction in fishing pressure within the Bellrock OfTDA and a potential increase in pressure in adjacent areas.
617. Changes in commercial fishing pressure may influence fish and shellfish populations, particularly for commercially targeted species, through alterations in exploitation rates and associated stock dynamics.
618. Further assessment of commercial fishing activity and displacement is provided in **Chapter 10: Commercial Fisheries** and **Chapter 16: Socioeconomics and Tourism**. The findings of **Chapter 10: Commercial Fisheries** will be used to inform the assessment of changes in commercial fishing pressure and the potential implications for fish and shellfish receptors.
619. Given the potential for displacement of commercial fishing activity and associated changes in fishing pressure to influence fish and shellfish receptors, this impact pathway is **scoped in** for further assessment in the EIA.

#### **7.6.1.8 Disturbance and Collision from Vessels**

620. Vessel activity associated with site preparation works and construction works has the potential to result in disturbance and collision risk with basking shark. Site preparation works and construction works will result in an increase in vessel activity within the Bellrock OfTDA over a temporary period.
621. Although basking shark may occur within the fish and shellfish ecology local study area, the east coast of Scotland is not recognised as a key aggregation hotspot for the species. In Scottish waters, notable seasonal hotspots are primarily associated with the Sea of the Hebrides (particularly the waters around Coll and Tiree) and the Firth of Clyde, around the Isle of Arran. Basking shark are therefore unlikely to occur within the fish and shellfish ecology local study area at densities comparable to these recognised hotspot areas.
622. Embedded mitigation will be implemented through the VMNSP, which will set out relevant good practice measures to minimise interactions with marine wildlife, including where practicable, adherence to the Scottish Marine Wildlife Watching Code and the Best Practice for Watching Marine Wildlife guidance, which includes measures specific to minimise disturbance and collision risk to basking shark.
623. Given the temporary nature of site preparation works and construction works, the relatively low likelihood of interactions with basking shark, and implementation of embedded mitigation measures (such as the development and implementation of the VMNSP), there is no potential for significant effects on basking shark because of disturbance and collision from vessels. Therefore, based upon

the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.

624. However, as presented in the Scoping Information Package (**Section 7.3**), and on a precautionary basis, this impact pathway has been **scoped in** for further assessment in the Bellrock OfTDA EIA. NatureScot are invited to review the justification presented above, and should agreement be reached that the evidence base and embedded mitigation are sufficient to support scoping out, this impact will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped-in position will be retained.

## 7.6.2 Operation and Maintenance Phase

### 7.6.2.1 Physical Disturbance and Temporary Habitat Loss of Seabed Habitats

625. Physical disturbance and temporary habitat loss of seabed habitats may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables, interconnector cable(s), and associated cable protection. These activities may involve localised seabed interventions, resulting in temporary direct physical disturbance or alteration of seabed habitats used by all fish and shellfish receptors, with the of the pelagic fish assemblage, within the footprint of the works, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species.
626. Although impacts will be spatially limited and intermittent, there is potential for interaction with fish and shellfish receptors associated with the seabed environment. Therefore, this impact will be **scoped in** for further assessment in the EIA.

### 7.6.2.2 Permanent Habitat Loss Resulting from Installation of Seabed Infrastructure

627. Permanent or long-term habitat loss and alteration may occur during the O&M phase because of the presence of installed seabed infrastructure, including the FBSSs for the OfSS(s) and the OfRCS(s), associated scour protection, offshore export cables, interconnector cable(s), and associated cable protection where cables are surface laid. The footprint of this infrastructure has the potential to result in permanent or long-term loss/alteration of seabed habitats used by all fish and shellfish receptors, with the exception of the pelagic fish assemblage, within the footprint of the works, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. This impact is therefore **scoped in** for further assessment in the EIA.

### 7.6.2.3 Increased SSCs and Sediment Deposition

628. Increased SSCs and associated sediment deposition may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, or replacement of offshore export cables, interconnector cable(s), and associated cable protection. Where seabed intervention is required, these activities may result in localised and temporary disturbance and resuspension of sediments, leading to subsequent deposition in the surrounding area. This has the potential to affect all fish and shellfish receptors, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. This impact will therefore be **scoped in** for further assessment in the EIA.

#### 7.6.2.4 Remobilisation of Existing Contaminated Sediments

629. Remobilisation of existing contaminated sediments may occur during the O&M phase because of planned and unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables, interconnector cable(s) and associated cable protection, which may require seabed intervention. Where contaminants are present, this may result in the release and redistribution of contaminants within the water column and subsequent deposition, with the potential to affect all fish and shellfish receptors, including spawning and nursery habitats. Within the elasmobranch assemblage, potential impacts are primarily relevant to demersal species. On a precautionary basis, this impact is currently **scoped in** for further assessment in the EIA.
630. However, sediment contamination analysis will be undertaken on samples collected during the site-specific benthic survey (**Section 7.4.2.1**). Should contaminant levels be below relevant threshold levels (e.g. Cefas Action Levels), this impact will be **scoped out** of further assessment in the EIA.

#### 7.6.2.5 Accidental Release of Pollutants

631. Accidental release of pollutants during the O&M phase is not considered to result in significant effects on fish and shellfish receptors. The potential impacts will be to a lesser degree than in the construction phase, due to fewer vessels required during O&M. Embedded mitigation measures to reduce pollution incident risks and establish appropriate management measures described in **Section 7.5.4** will also cover the O&M phase of the Bellrock Offshore Transmission Infrastructure.
632. Therefore, it is proposed that this impact is **scoped out** of the EIA. This is in line with the approach agreed for the **Bellrock WFDA EIA Report** (MD-LOT, 2024).

#### 7.6.2.6 Introduction and/or Spread of Marine INNS

633. During the O&M phase, there remains potential for the introduction and/or spread of marine INNS associated with vessel movements and maintenance activities (e.g. inspection, repair, and replacement works), which may act as vectors for biofouling transfer. However, these pathways are comparable to those identified for the construction phase (**Section 7.6.1.5**), albeit at a reduced frequency and spatial extent.
634. As outlined for the construction phase, a site-specific INNSMP will be implemented as embedded mitigation (**Section 7.5.4**) and will apply throughout the operational life of the Bellrock Offshore Transmission Infrastructure. The INNSMP will identify relevant risk pathways and define appropriate biosecurity control measures in accordance with recognised best practice and international guidance.
635. With the implementation of the INNSMP, the risk of introduction and/or spread of marine INNS is reduced to a level where significant effects are not anticipated. Therefore, it is proposed that this impact is **scoped out** of the EIA. This is in line with the approach agreed for the **Bellrock WFDA EIA Report** (MD-LOT, 2024).

#### 7.6.2.7 Colonisation of Artificial Hard Substrate Associated with Installed Infrastructure

636. Colonisation of introduced hard substrate associated with installed infrastructure, including the FBSSs for the OfSS(s) and OfRCS(s), scour protection, and cable protection, may occur during the O&M phase. The introduction of artificial hard substrate into predominantly sedimentary

environments (see **Chapter 6: Intertidal and Benthic Ecology**) has the potential to facilitate colonisation by epifaunal and shellfish species and alter local habitat structure and prey availability (Raoux et al., 2017; Van Hal et al., 2017).

637. These changes have the potential to influence local fish and shellfish assemblages through changes in community composition, trophic interactions, prey resources, and predator-prey dynamics.

638. This impact is therefore **scoped in** for further assessment in the EIA.

#### **7.6.2.8 Electromagnetic Fields Generated by Energised Subsea Cables**

639. EMF will be generated by energised subsea offshore export cables and interconnector cable(s) during the O&M phase. EMF associated with buried or seabed-laid cables is expected to be most relevant to demersal, elasmobranch, diadromous, and shellfish receptors, and to benthic-associated spawning and nursery habitats.

640. Diadromous fish may be particularly sensitive to EMF, as some species are known to use the Earth's magnetic field for orientation and navigation during migration. Existing evidence indicates that EMF associated with subsea cables may alter swimming behaviour or orientation in some migratory species (Gill et al., 2012), including those likely to be present within the fish and shellfish ecology study area, where migration routes intersect cable corridors, particularly within shallow coastal waters. Diadromous fish may encounter EMF during both juvenile and adult migration phases.

641. Elasmobranch species are considered sensitive to EMF due to the presence of electroreceptors (the ampullae of Lorenzini) used for prey detection and navigation. As such, there is potential for subsea cables to result in behavioural responses in elasmobranchs.

642. There is also potential for EMF to interact with spawning and nursery habitats, including early life stages of fish and shellfish receptors associated with seabed habitats in proximity to installed cables, although evidence regarding population-level consequences remains limited.

643. Given the potential for interaction with sensitive fish and shellfish receptors, and ongoing scientific uncertainty regarding behavioural and ecological responses to subsea cable EMF, this impact is there **scoped in** for further assessment in the EIA.

#### **7.6.2.9 Thermal Emissions from Energised Subsea Cables**

644. Thermal emissions will be generated by energised offshore export cables and interconnector cable(s) because of resistive heat loss during electricity transmission. The magnitude and spatial extent of seabed heating is influenced by cable specification, electrical load, burial depth, and the thermal properties of surrounding sediments (Emeana et al., 2016).

645. Embedded mitigation through cable design and installation, including appropriate conductor sizing, armouring, burial depth, and optimisation of transmission efficiency, will minimise heat loss. As a result, any increases in sediment temperature will be highly localised to the immediate vicinity of the cable and will dissipate rapidly into surrounding sediments and the overlying water column.



646. Available evidence indicates that temperature increases associated with operational subsea cables are small and attenuate to background levels within metres of the cable (Meißner et al. 2006, Hughes et al. 2015, Taormina et al. 2018). As such, no measurable ecological effects on fish and shellfish receptors are anticipated.
647. Given the very small magnitude and highly localised nature of thermal emissions, and the rapid dissipation of heat it is determined that there is no credible pathway for significant effects at a population level. Therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
648. However, as presented in the Scoping Information Package (**Section 7.3**), and on a precautionary basis, this impact pathway has been scoped in for further assessment in the Bellrock OfTDA EIA. NatureScot are invited to review the justification presented above, and should agreement be reached that the evidence base and embedded mitigation are sufficient to support scoping out, this impact will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped-in position will be retained.

#### 7.6.2.10 Underwater Noise and Vibration

649. UWN and vibration during the O&M phase may be generated by vessel activity and planned or unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables and interconnector cable(s) and associated cable protection. These activities will generate predominantly non-impulsive, low-level UWN over temporary and spatially constrained periods.
650. The fish and shellfish ecology local study area is already characterised by existing vessel activity and associated UWN from commercial shipping and other marine users (**Chapter 11: Shipping and Navigation** and **Chapter 13: Marine Infrastructure and Other Users**). O&M activities will therefore occur within an environment where baseline anthropogenic UWN is already present, with maintenance activities representing intermittent and localised increases in vessel activity rather than continuous or large-scale addition to the existing UWN environment. Furthermore, in contrast to the construction phase, no routine impulsive noise-generating activities, such as piling are anticipated during O&M.
651. Given the temporary, intermittent and localised nature of O&M activities, the absence of routine impulsive sources, and the existing baseline UWN environment, there is no credible pathway for significant effects on fish and shellfish receptors. Therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
652. However, in response to NatureScot consultation advice provided on the Scoping Information Package (**Section 7.3**), and on a precautionary basis, this impact pathway has been scoped in for further assessment in the Bellrock OfTDA EIA. NatureScot are invited to review the justification presented above, and should agreement be reached that the evidence base and embedded mitigation are sufficient to support scoping out, this impact will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped-in position will be retained.

#### 7.6.2.11 Entanglement with Subsea Infrastructure

653. The Offshore Transmission Infrastructure will not include floating substructures, with the OfSS(s) and OfRCS(s) comprising FBSSs only. As a result, there will be no mooring lines or other

suspended infrastructure within the water column that could facilitate primary entanglement, accumulation of marine debris or abandoned fishing gear resulting in secondary entanglement, or tertiary entanglement pathways. Therefore, it is proposed that this impact is **scoped out** of the EIA.

#### 7.6.2.12 Changes in Commercial Fishing Pressure

654. The O&M of the Bellrock Offshore Transmission Infrastructure has the potential to result in displacement of commercial fishing activity within the Bellrock OfTDA. This may lead to changes in spatial patterns of fishing effort, including a reduction in fishing pressure within the Bellrock OfTDA and a potential increase in pressure in adjacent areas.
655. Changes in commercial fishing pressure may influence fish and shellfish populations, particularly for commercially targeted species, through alterations in exploitation rates and associated stock dynamics.
656. Further assessment of commercial fishing activity and displacement is provided in **Chapter 10: Commercial Fisheries** and **Chapter 16: Socioeconomics and Tourism**. The findings of **Chapter 10: Commercial Fisheries** will be used to inform the assessment of changes in commercial fishing pressure and the potential implications for fish and shellfish receptors.
657. Given the potential for displacement of commercial fishing activity and associated changes in fishing pressure to influence fish and shellfish receptors, this impact pathway is **scoped in** for further assessment in the EIA.

#### 7.6.2.13 Disturbance and Collision from Vessels

658. Disturbance and collision from vessels during the O&M phase has the potential to affect basking shark through interactions with vessels associated with planned and unplanned maintenance activities, including inspection, repair, and replacement of offshore export cables, interconnector cable(s), and associated cable protection. However, as described for the construction phase (**Section 7.6.1.8**), basking shark are unlikely to occur within the fish and shellfish ecology local study area at densities comparable to recognised hotspot areas in Scottish waters.
659. Vessel activity during the O&M phase will be substantially lower than during the construction phase and will be intermittent and temporary in nature. Embedded mitigation measures outlined for the construction phase, including implementation of the VMNSP and adherence to the Scottish Marine Wildlife Watching Code and the Best Practice for Watching Marine Wildlife guidance, will also apply during O&M activities.
660. Given the limited nature of O&M vessel activity and the implementation of embedded mitigation measures, there is no potential for significant effects on basking shark, at the population level, because of vessel disturbance and collision. Therefore, based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
661. However, in response to NatureScot consultation advice provided on the Scoping Information Package (**Section 7.3**), and on a precautionary basis, this impact pathway has been **scoped in** for further assessment in the Bellrock OfTDA EIA. NatureScot are invited to review the justification presented above, and should agreement be reached that the evidence base and embedded



mitigation are sufficient to support scoping out, this impact will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped-in position will be retained.

### 7.6.3 Decommissioning Phase

662. Except for UWN and vibration and loss of artificial hard substrate habitat due to removal of infrastructure, the potential impacts associated with decommissioning are considered comparable to those identified for the construction phase. The same impact pathways are therefore anticipated to apply, with broadly similar scoping outcomes carried forward to the decommissioning phase. Key differences in scoping outcomes are presented below.
663. In contrast to construction, decommissioning activities are not anticipated to require piling or UXO clearance works. UWN and vibration during decommissioning will therefore be limited to non-impulsive noise associated with vessel activity, infrastructure removal and pile cutting activities. Given the temporary and localised nature of these activities, UWN and vibration during decommissioning, it is considered that based upon the evidence presented above, there is a strong case to scope out the proposed pathway from further assessment in the EIA.
664. However, as presented in the Scoping Information Package (**Section 7.3**), and on a precautionary basis, this impact pathway has been scoped in for further assessment in the Bellrock OfTDA EIA. NatureScot are invited to review the justification presented above, and should agreement be reached that the evidence base and embedded mitigation are sufficient to support scoping out, this impact will be scoped out of the Bellrock OfTDA EIA. In the absence of agreement, the precautionary scoped-in position will be retained.
665. Loss of artificial hard substrate habitat may occur during decommissioning because of removal of installed infrastructure and any associated colonising communities that have developed during the O&M phase. This impact is considered to represent the inverse of the O&M impact colonisation of artificial hard substrate associated with installed infrastructure. This impact is therefore scoped in for further assessment in the EIA.

### 7.6.4 Bellrock OfTDA Whole Project Assessment

666. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on fish and shellfish receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
667. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock Onshore Transmission Development Area for fish and shellfish ecology. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

### 7.6.5 Potential Cumulative Effects

668. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
669. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 7.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on fish and shellfish ecology receptors.
670. As stated above, there is potential for cumulative impacts on fish and shellfish receptors where the Bellrock Offshore Transmission Infrastructure and other plans and projects have conceptual overlap through a shared or similar source-pathway-receptor linkage, alongside spatial and temporal overlap. In general, many impact pathways (e.g. physical disturbance and permanent habitat loss) are spatially constrained to the immediate footprint of seabed infrastructure and therefore have a limited ZoI. However, other impact pathways, such as UWN and vibration, may extend over a wider area and therefore have greater potential to contribute to cumulative interaction.
671. The CEA will consider other plans and projects with the potential to affect the identified fish and shellfish IEFs through the same or similar impact pathways. Spatial screening of plans and projects will be defined proportionately, considering the ZoI associated with each impact pathway, alongside the potential for conceptual and temporal overlap, to ensure that only plans/projects with realistic potential for cumulative interaction are included.

### 7.6.6 Potential Transboundary Effects

672. Transboundary effects on fish and shellfish ecology are not anticipated to arise from the construction, O&M, or decommissioning of the Bellrock Offshore Transmission Infrastructure. Many impact pathways, relevant to fish and shellfish ecology, are spatially constrained to the footprint or immediate surroundings of seabed infrastructure, including impacts associated with seabed disturbance and permanent habitat loss. Some impact pathways, such as UWN and vibration, may extend over a wider spatial scale and are therefore considered to have a regional ZoI within the wider marine environment surrounding the Bellrock OfTDA. However, even where spatial propagation of impacts may occur (e.g. UWN and vibration), these remain regional in scale and do not extend to distances that would result in interactions within receptors in adjacent Exclusive Economic Zones.
673. Given the distance from the Bellrock OfTDA to the nearest Exclusive Economic Zone and the limited spatial extent of impact pathways there is no plausible mechanism for transboundary effects on fish and shellfish receptors to occur. Therefore, it is proposed that transboundary effects on fish and shellfish ecology are **scoped out** of the EIA.

## 7.6.7 Summary of Potential Impacts

674. **Table 7.9** summarises the outcomes of the scoping assessment presented in **Section 7.6.1** to **Section 7.6.3**, identifying the relevant impacts for fish and shellfish ecology and confirming whether these have been scoped in or scoped out of the Bellrock OFTDA EIA.

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**Table 7.9: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Fish and Shellfish Ecology**

| Potential Impact                                                                    | Receptor(s)                                                                                                                                | Scoped In or Scoped Out? (✓ or X) |                |                 |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------|-----------------|
|                                                                                     |                                                                                                                                            | Construction                      | O&M            | Decommissioning |
| Physical disturbance and temporary habitat loss of seabed habitats                  | Demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, shellfish assemblage, spawning grounds, and nursery grounds | ✓                                 | ✓              | ✓               |
| Permanent habitat loss resulting from installation of seabed infrastructure         | Demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, shellfish assemblage, spawning grounds, and nursery grounds | X                                 | ✓ <sup>1</sup> | X               |
| Increased SSC and sediment deposition                                               | All receptor groups                                                                                                                        | ✓                                 | ✓              | ✓               |
| Remobilisation of existing contaminated sediments                                   | All receptor groups                                                                                                                        | ✓ <sup>2</sup>                    | ✓ <sup>2</sup> | ✓ <sup>2</sup>  |
| Accidental release of pollutants                                                    | All receptor groups                                                                                                                        | X                                 | X              | X               |
| Introduction and/or spread of marine INNS                                           | All receptor groups                                                                                                                        | X                                 | X              | X               |
| Colonisation of artificial hard substrates associated with installed infrastructure | Pelagic fish assemblage, demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, and shellfish assemblage           | X                                 | ✓              | X               |
| EMFs generated by energised subsea cables                                           | Demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, shellfish assemblage, spawning grounds, and nursery grounds | X                                 | ✓              | X               |

| Potential Impact                                                           | Receptor(s)                                                                                                                             | Scoped In or Scoped Out? (✓ or X) |                |                 |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------|-----------------|
|                                                                            |                                                                                                                                         | Construction                      | O&M            | Decommissioning |
| Thermal emissions from energised subsea cables                             | Demersal fish assemblage, elasmobranch assemblage, shellfish assemblage, spawning grounds, and nursery grounds                          | X                                 | ✓ <sup>3</sup> | X               |
| Underwater noise and vibration                                             | All receptor groups                                                                                                                     | ✓                                 | ✓ <sup>3</sup> | ✓ <sup>3</sup>  |
| Entanglement with subsea infrastructure                                    | Pelagic fish assemblage, demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, and shellfish assemblage        | X                                 | X              | X               |
| Changes in commercial fishing pressure                                     | Pelagic fish assemblage, demersal fish assemblage, elasmobranch assemblage, shellfish assemblage, spawning grounds, and nursery grounds | ✓                                 | ✓              | ✓               |
| Disturbance and collision from vessels                                     | Elasmobranch assemblage (basking shark only)                                                                                            | ✓ <sup>3</sup>                    | ✓ <sup>3</sup> | ✓ <sup>3</sup>  |
| Loss of artificial hard substrate habitat due to removal of infrastructure | Pelagic fish assemblage, demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, and shellfish assemblage        | X                                 | X              | ✓               |
| Bellrock OfTDA Whole Project Assessment                                    | Impact pathway specific, as detailed above                                                                                              | ✓                                 | ✓              | ✓               |
| Cumulative effects                                                         | Impact pathway specific, as detailed above                                                                                              | ✓                                 | ✓              | ✓               |
| Transboundary effects                                                      | Impact pathway specific, as detailed above                                                                                              | X                                 | X              | X               |

| Potential Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Receptor(s) | Scoped In or Scoped Out? (✓ or X) |     |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------|-----|-----------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |             | Construction                      | O&M | Decommissioning |
| <p>Notes:</p> <p><sup>1</sup> Permanent habitat loss associated with seabed infrastructure installation will commence during construction and continue throughout the O&amp;M phase until decommissioning. To avoid duplication, this impact is assessed within the O&amp;M phase only, as the effect and receptor interactions are consistent across phases.</p> <p><sup>2</sup> The impact ‘remobilisation of existing contaminated sediments’ is currently scoped in on a precautionary basis. However, if sediment contamination analysis shows that contaminant levels are below relevant thresholds this impact will be scoped out.</p> <p><sup>3</sup> Impacts are currently scoped in on a precautionary basis, pending consultee review of the justification presented to support scoping out. Subject to agreement from consultees, the impact will be scoped out of EIA; otherwise, the precautionary scoped in position will be retained.</p> |             |                                   |     |                 |

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## 7.7 Proposed Approach to Impact Assessment

675. The impact assessment methodology for the fish and shellfish ecology chapter will follow that which is described in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

### 7.7.1 Approach to Identification of Important Ecological Features

676. The identification of IEFs is a key process, ensuring that the assessment focuses on fish and shellfish receptors that are both of sufficient importance and have the potential to be affected by the Bellrock Offshore Transmission Infrastructure. IEFs will be identified in accordance with CIEEM guidance (CIEEM, 2018). Preliminary IEFs are detailed in **Section 7.4.7**.

677. The assessment will adopt a functional group approach, whereby fish and shellfish receptors are considered at a broad ecological grouping level based on shared life-history traits and ecological function (i.e. pelagic fish assemblage, demersal fish assemblage, elasmobranch assemblage, diadromous fish assemblage, shellfish assemblage, spawning grounds, and nursery grounds). Within these functional groups, relevant component IEFs will be identified where they meet criteria for inclusion.

678. The identification of IEFs will be informed by site-specific surveys, publicly available data, and stakeholder consultation (where required). Features will be considered where recognised through legislation, policy, or conservation designations, or where they are notable due to ecological importance, rarity, extent, condition, level of threat, or rate of decline. This will include, where relevant PMF fish and shellfish species, Annex II species, and relevant fish and shellfish features of designated sites.

679. The importance of each feature will be defined within an appropriate geographical context (e.g. international to local), with justification provided. Features that are widespread, unthreatened, and resilient to the identified impact pathways, and which are expected to remain viable, will not be taken forwards as IEFs. This ensures a proportionate and focused assessment.

680. The final list of IEFs will be confirmed in the EIA following detailed baseline characterisation and consultation and will form the basis for subsequent assessment.

### 7.7.2 Approach to Defining Sensitivity

681. The sensitivity of each IEF will be defined based on its tolerance (resistance) and capacity for recovery (resilience) from, the relevant impact pathways. Sensitivity will be determined using a combination of professional judgement and evidence-based sources, including the Marine Evidence-Based Sensitivity Assessments (Tyler-Walters et al., 2023) and FeAST (FeAST Working Group, 2026).

682. Sensitivity will be categorised using a defined scale (e.g. high, medium, low, and negligible), with justification provided for each IEF based on its ecological characteristics, conservation importance, and known responses to the relevant pressures.

### 7.7.3 Approach to Defining Impact Magnitude

683. The magnitude of each impact will be determined with reference to the characteristics of the impact and its interaction with the relevant receptors, considering:
- Positive or negative;
  - Spatial extent;
  - Duration;
  - Frequency and timing; and
  - Reversibility.
684. Magnitude will be defined on a standard scale (e.g. high, medium, low, negligible, and no change), with consideration of both the scale of the impact and the proportion of the IEF affected.
685. Site-specific UWN modelling will be undertaken for UWN sources from the Bellrock Offshore Transmission Infrastructure, including pile driving, vessel, and cable laying sound. Further detail on UWN modelling can be found in **Chapter 8: Marine Mammals**. Sound impacts for fish will be based on the thresholds developed by Popper et al. (2014). Popper et al. (2014) quantitative thresholds for fish, larvae and egg receptors will be considered. Receptors will be treated either as stationary or fleeing, depending on their behaviour and the level of precaution required:
- Sandeel, spawning Atlantic herring, spawning Atlantic cod, and eggs treated as stationary receptors; and
  - Other species treated as fleeing receptors at 0.5 m/s.
686. The Popper et al. (2014) sound impact thresholds are based on the pressure component of sound. It is acknowledged, however, that many fish and invertebrate species can detect the particle motion component of sound. The propagation of pressure waves through a medium (sound pressure) is the most studied in terms of impacts on marine fauna. In contrast, particle motion, which is the oscillation of individual water molecules that allows the pressure waves to propagate, is understudied and no reliable impact thresholds exist to apply in an EIA context (Popper and Hawkins, 2018). Particle motion will be considered in the Bellrock OfTDA EIA Report qualitatively. Given that some invertebrates are sensitive to the particle motion component of UWN, the effect of UWN on invertebrates will also be assessed qualitatively, drawing on the findings of available literature.
687. Uncertainty in impact magnitude will be acknowledged where significant knowledge gaps exist in the available literature.

### 7.7.4 Approach to Determining Effect Significance

688. The significance of effects will be determined through a combination of sensitivity and impact magnitude, using a defined significance matrix. The assessment will identify the level of effect (e.g. major, moderate, minor, negligible, no effect) and determine whether effects are significant in EIA terms.
689. In accordance with standard EIA practice, effects that are moderate or major adverse are considered to be significant in EIA terms, whilst those assessed as minor, negligible, or no effect will be considered not significant. The assessment will clearly distinguish between potential effects (prior to secondary mitigation) and residual effects (following the implementation of any secondary mitigation measures), where relevant.

## 7.8 Scoping Questions to Consultees

690. The following questions are posed to consultees to help them frame and focus their response to this fish and shellfish ecology scoping exercise, which will in turn inform the EIA:
- Do you agree that all the relevant data sources have been identified in **Section 7.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 7.2**?
  - Do you agree with the proposed study areas as presented in **Section 7.4.1**?
  - Do you agree that the information described will be suitable for characterisation of the existing environment?
  - Do you agree that all fish and shellfish ecology impacts resulting from the Bellrock Offshore Transmission Infrastructure have been identified in **Section 7.5**?
  - Do you agree with the updated scoping conclusions and supporting justification presented in **Section 7.6.2.9** for thermal emissions, noting that these differ from the preliminary scoping position set out in the Scoping Information Package?
  - Do you agree with the updated scoping conclusions and supporting justification presented in **Section 7.6.1.6**, **Section 7.6.2.10**, and **Section 7.6.3** for UWN and vibration, noting that these differ from the preliminary scoping position set out in the Scoping Information Package?
  - Do you agree with the updated scoping conclusions and supporting justification presented in **Section 7.6.1.8**, **Section 7.6.2.13**, and **Section 7.6.3** for disturbance and collision from vessels, noting that these differ from the preliminary scoping position set out in the Scoping Information Package?
  - Do you agree with the fish and shellfish ecology impacts that have been scoped in for/out from further consideration within the Bellrock OfTDA EIA (**Section 7.6**)?
  - Do you agree with the proposed approach to assessment in the Bellrock OfTDA EIA Report?
  - Do you have any other matters or information sources that you wish to present?

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# 8 Marine Mammals

## 8.1 Introduction

691. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on marine mammals.
692. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
693. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
694. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

695. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
696. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on marine mammal receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
697. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 6: Intertidal and Benthic Ecology;**
  - **Chapter 7: Fish and Shellfish Ecology;**
  - **Chapter 9: Intertidal and Offshore Ornithology;** and
  - **Chapter 10: Commercial Fisheries.**
698. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 8.2 Legislation, Policy and Guidance

699. Marine mammal species in the waters surrounding the Bellrock OfTDA are protected by national and international legislation. **Table 8.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock EIA Report where appropriate. The overarching policy and legislation relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 8.1: Summary of Relevant Legislation, Policy and Guidance for Marine Mammals**

| Relevant Legislation, Policy and Guidance      | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scottish and United Kingdom Legislation</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Nature Conservation (Scotland) Act, 2004       | The Nature Conservation (Scotland) Act 2004 sets out a series of measures designed to conserve biodiversity, and to protect and enhance the biological and geological natural heritage. This Act also provides amendments to the Wildlife and Countryside Act 1981 specifically for Scottish waters, adding that it is an offence to disturb cetacean species (either recklessly or intentionally). This Act also enacts requirements under the Bern Convention 1979. |
| Marine and Coastal Access Act 2009             | Marine Protected Areas (MPAs) existing beyond the 12 nm limit in Scottish Waters and Marine Conservation Zones in English waters                                                                                                                                                                                                                                                                                                                                      |

| Relevant Legislation, Policy and Guidance                                                                                               | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                         | are designated under the Marine and Coastal Access Act 2009. These sites (MPAs and Marine Conservation Zones) are areas that have been designated for the purpose of conserving marine flora and fauna, marine habitats, or features of geological or geomorphological interest.                                                                                                                                                                                                                                                                                                                                                                          |
| Marine (Scotland) Act, 2010<br>Protection of Seals (Designation of Haul-Out Sites) (Scotland) Order 2014                                | This Act provides a framework for the sustainable management of Scotland's seas and one of its key aims is to streamline and simplify the licensing and consenting process for marine projects. Under the Marine (Scotland) Act, the Conservation of Seals Act 1970 has been re-enacted, providing designation of specific seal haul-out sites for protections from intentional or reckless harassment. Under Part 6 of the new act, it is an offence to kill, injure or take a seal at any time of year, except to alleviate suffering or where a licence has been issued to do so by the Marine Directorate Licensing Operations Team (MD-LOT).         |
| The Conservation (Natural Habitats & c.) Regulations 1994<br>The Conservation of Offshore Marine Habitats and Species Regulations, 2017 | The Habitats Regulations place an obligation on the Scottish Ministers (with MD-LOT acting on their behalf) must inform an appropriate assessment of any proposal likely to have a significant effect on a European site, to seek advice from Statutory Nature Conservation Bodies and to reject an application that would have an adverse effect on the integrity of a European site except under very tightly constrained conditions.<br><br>Under the Habitats Regulations, all cetacean species are defined as European Protected Species (EPS). All seals are listed under Schedule 3 (animals which may not be captured or killed in certain ways). |
| The Wildlife and Countryside Act 1981                                                                                                   | Under the Wildlife and Countryside Act 1981, it is an offence to intentionally or recklessly disturb any wild animal included under Schedule 5 of the Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Conservation of Seals Act 1970                                                                                                          | The legislative changes in England and Wales, amends the Conservation of Seals Act 1970, prohibiting the intentional or reckless killing, injuring or taking of seals and removing the provision to grant licences for the purposes of protection, promotion or development of commercial fisheries or aquaculture activities. These changes were enacted to ensure compliance with the United States Marine Mammal Protection Act Import Provision Rule.<br><br>As of 1 March 2021, a person commits an offence if they intentionally or recklessly kill, injure or take a seal.                                                                         |
| <b>International Legislation</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Marine Strategy Framework Directive                                                                                                     | Annex I of the Marine Strategy Framework Directive states that to ensure that good environmental status is met the following must be considered:<br><br>Biological diversity should be maintained;<br><br>The quality and occurrence of habitats, as well as the distribution and abundance of species are in line with prevailing physiographic, geographic, and climatic conditions;<br><br>All elements of the marine food web, to the extent that they are known, occur at normal abundance and diversity levels capable of                                                                                                                           |

| Relevant Legislation, Policy and Guidance                                                                            | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                      | <p>ensuring the long-term abundance of the species and the retention of their full reproductive capacity;</p> <p>Concentrations of contaminants are at levels not giving rise to pollution effects;</p> <p>Properties and quantities of marine litter do not cause harm to the coastal and marine environment; and</p> <p>Introduction of energy, including underwater noise (UWN), is at levels that do not adversely affect the marine environment.</p>                                                                                                                                                                                                                                                                                                                                                  |
| Agreement on the Conservation of Small Cetaceans of the Baltic, North-East Atlantic, Irish and North Seas (ASCOBANS) | Formulated in 1992, this Agreement has been signed by eight European countries bordering the Baltic and North Seas (NS) (including the English Channel) and includes the United Kingdom (UK). Under the Agreement, provision is made for the protection of specific areas, monitoring, research, information exchange, pollution control and increasing public awareness of small cetaceans (odontocetes).                                                                                                                                                                                                                                                                                                                                                                                                 |
| The Bonn Convention 1979                                                                                             | Protects migratory wild animals (including all cetaceans) across all, or part of their natural range, through international cooperation, and relates particularly to those species in danger of extinction. One of the measures identified is the adoption of legally binding agreements, including ASCOBANS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Oslo and Paris Convention for the Protection of the Marine Environment 1992 commission                               | Oslo and Paris Convention for the Protection of the Marine Environment 1992 (OSPAR) commission established an Intersessional Correspondence Group on Offshore Renewable Energy Development, in 2021 which is taking the lead in progressing tasks and actions related to OSPAR's North-East Atlantic Environmental Strategy 2030 Operational Objective S12.O4: By 2024 OSPAR will develop guidance to promote and facilitate sustainable development and scaling up of offshore renewable energy in a way that cumulative environmental impacts are minimised. This is guided by the application of the Ecosystem Approach. Understanding and assessing cumulative effects is the front line of implementing an ecosystem-based approach to the management of human activities in the OSPAR Maritime Area. |
| <b>Policy</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Scotland's National Marine Plan, 2015 (Scottish Government, 2015)                                                    | <p>The purpose of the National Marine Plan is to set out strategic policies for the sustainable development of Scotland's marine resources out to 200 nm.</p> <p>Of relevance to marine mammals is the strategic priority: <i>"Biodiversity is protected, conserved and, where appropriate, recovered, and loss has been halted."</i></p> <p>The Scotland's National Marine Plan is currently being updated, transitioning to the Scottish National Marine Plan 2. Consultation on the Scotland's National Marine Plan 2 ran from 5 November 2024 to 7 February 2025 and a consultation analysis report has been produced by the Scottish Government (2025). The updates are currently postponed with communication on updated timing to be communicated later in the year.</p>                            |
| Priority Marine Features in Scotland's Seas (NatureScot, 2020)                                                       | Priority Marine Features are habitats and species that have been identified as being conservation priorities in Scottish waters. These include 16 species of marine mammals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Relevant Legislation, Policy and Guidance                                                                                                                                             | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Sectoral Marine Plan for Offshore Wind Energy 2020 (Scottish Government, 2020) and the Draft updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025)</p> | <p>The Sectoral Marine Plan for Offshore Wind Energy (2020) seeks to minimise the potential adverse effects on other marine users, economic sectors and the environment resulting from further commercial scale offshore wind development.</p> <p>Offshore Wind and Marine Renewable Energy Policies require consideration of regional cumulative effects, including the potential for negative effects on bird populations, benthic habitats, cetaceans, navigational safety, seascape/landscape and commercial fisheries. The Sectoral Marine Plan includes measures to mitigate potential impacts at various scales.</p> <p>The 2025 Sectoral Marine Plan is undergoing review and is anticipated to be published in autumn 2026.</p>                                                                     |
| <p>Scottish Biodiversity Strategy to 2045: Tackling the Nature Emergency in Scotland (Scottish Government, 2024)</p>                                                                  | <p>Sets out a vision for 2045 explaining how the Scottish Government will conserve biodiversity for the people of Scotland now and in the future, with the objective to halt the loss of biodiversity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>Marine Environment: 'Unexploded Ordnance Clearance Joint Position Statement' (UK Government et al., 2025)</p>                                                                      | <p>This position statement sets out how the signatories expect to approach marine licensing for these activities and provides guidance to potential applicants as to how best to undertake applications for such Marine Licences, in the context of this general approach.</p> <p>Provides the stance by UK regulators and Statutory Nature Conservation Bodies on minimising environmental harm from unexploded ordnance (UXO) clearance. It promotes low-impact techniques and strategic planning to reduce acoustic trauma to marine mammals. Its inclusion in EIAs demonstrates regulatory alignment and commitment to best practice in high-risk operations.</p>                                                                                                                                        |
| <p>UK Marine Policy Statement (Her/his Majesty's Government, 2011)</p>                                                                                                                | <p>The UK Marine Policy Statement ensures a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets.</p> <p>It recognises that the marine environment plays an important role in mitigating climate change.</p> <p>It seeks to ensure that biodiversity is protected, conserved and where appropriate recovered and loss has been halted.</p> <p>The UK Marine Policy Statement places duties on public bodies in relation to the conservation of biodiversity and strengthens wildlife enforcement legislation. Wild animal protection is extended to include reckless as well as intentional acts. The policy makes it an offence to disturb or harass cetaceans and amends the provisions for enforcement.</p> |
| <b>Guidance</b>                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>The Protection of Marine EPS From Injury and Disturbance – Guidance of Scottish Inshore Waters (Marine Scotland, 2020)</p>                                                         | <p>This guidance provides advice for marine users who are planning to carry out an activity in the marine environment which has the potential to deliberately or recklessly kill, injure or disturb a marine EPS. It also provides useful information on mitigation for marine mammals.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>The Protection of Marine EPS From Injury and Disturbance – Guidance for the Marine Area in England and</p>                                                                         | <p>The guidance intends to provide a resource for marine users, regulators, advisors and the enforcement authorities when considering whether an offence of disturbing or injuring/killing a</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



| <b>Relevant Legislation, Policy and Guidance</b>                                                                                                                                    | <b>Relevance to the Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wales and the UK Offshore Marine Area (Joint Nature Conservation Committee (JNCC) et al., 2010).                                                                                    | marine EPS is likely to occur or to have occurred as a result of an activity.                                                                                                                                                                                                                                                                                                                                                                                                           |
| JNCC Guidelines for Minimising the Risk of Injury to Marine Mammals from Unexploded Ordnance (UXO) Clearance in the Marine Environment (JNCC, 2025a)                                | These guidelines outline measures to minimise potential injury and disturbance from UXO clearance activities.                                                                                                                                                                                                                                                                                                                                                                           |
| Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise (JNCC, 2010)                                                    | These guidelines outline a protocol for the mitigation of potential UWN impacts arising from pile driving during offshore wind farm (OWF) construction.                                                                                                                                                                                                                                                                                                                                 |
| Scottish Marine Wildlife Watching Code (Scottish Natural Heritage (SNH) [now NatureScot], 2017a)                                                                                    | The wildlife watching code provides guidelines on the best practice measures for reducing disturbance to marine mammals by all marine users.                                                                                                                                                                                                                                                                                                                                            |
| JNCC Guidelines for Minimising the Risk of Injury to Marine Mammals from Geophysical Surveys (Seismic Survey Guidelines) (JNCC, 2017) <sup>1</sup>                                  | These guidelines outline a protocol for the mitigation of potential UWN impacts due to geophysical surveys.                                                                                                                                                                                                                                                                                                                                                                             |
| Marine licensing – unexploded ordnance clearance: application guidance (MD-LOT, 2025a; Department for Environment Food and Rural Affairs ((Defra), 2025)                            | Guidance on marine licensing application requirements for UXO clearance.                                                                                                                                                                                                                                                                                                                                                                                                                |
| Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (Chartered Institute of Ecology and Environmental Management, 2024)  | Guidance on EIAs and provides a structured framework for assessing potential impacts on marine mammals from offshore developments, such as the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                           |
| Approaches to Marine Mammal Monitoring at Marine Renewable Energy Developments Final Report (Sea Mammal Research Unit Limited on behalf of The Crown Estate, 2010)                  | Guidance on designing and implementing marine mammal monitoring programmes around OWFs. It outlines methodologies for baseline data collection, impact detection, and post-construction monitoring, with an emphasis on species-specific behaviours and spatial use. Its relevance lies in supporting robust EIA frameworks that can detect and interpret ecological changes attributable to development activities, ensuring that mitigation and adaptive management are evidence-led. |
| Guidelines for Data Acquisition to Support Marine Environmental Assessments of Offshore Renewable Energy Projects (Centre for Environment, Fisheries and Aquaculture (Cefas), 2011) | Sets out best practice for acquiring environmental data to inform offshore wind farm EIAs, including parameters critical to marine mammal assessments such as acoustic profiles, habitat mapping, and biological presence. The guidance ensures data quality, consistency, and relevance, enabling accurate impact prediction and regulatory compliance. It also supports integration with broader marine spatial planning and cumulative impact assessments.                           |
| A review of noise abatement systems for OWF construction noise, and the potential for their                                                                                         | Evaluates the effectiveness of various noise abatement systems in reducing construction-related acoustic impacts, particularly from pile-driving. It assesses technologies such as bubble curtains, cofferdams, and hydro sound dampers, with a focus on their                                                                                                                                                                                                                          |

| <b>Relevant Legislation, Policy and Guidance</b>                                                                                                                                                               | <b>Relevance to the Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| application in Scottish Waters (Verfuss et al., 2019)                                                                                                                                                          | applicability in Scottish waters. This document is critical in informing mitigation design and demonstrating best available techniques to minimise injury and behavioural disturbance.                                                                                                                                                                                                                                                                                                                                                  |
| Reducing Underwater Noise (NIRAS, Sea Mammal Research Unit Limited, and The Crown Estate, 2019)                                                                                                                | Guidance on synthesises practical strategies for reducing UWN during offshore wind development, including operational modifications, spatial planning, and technology deployment. It highlights the importance of early-stage noise modelling and stakeholder engagement. In marine mammal EIAs, it supports proactive mitigation planning and helps developers meet regulatory thresholds for disturbance and injury risk.                                                                                                             |
| JNCC guidance for the use of Passive Acoustic Monitoring in UK waters for minimising the risk of injury to marine mammals from offshore activities (JNCC, 2023)                                                | Provides technical protocols for deploying Passive Acoustic Monitoring to detect marine mammal presence and activity, particularly in relation to noise-generating offshore operations. It outlines equipment standards, deployment strategies, and data interpretation methods. This guidance is essential for EIAs requiring real-time mitigation (e.g. shutdown protocols) and for validating impact predictions through empirical monitoring.                                                                                       |
| UK Marine Noise Registry Disturbance Tool: Description and Output Generation. April 2025 (JNCC, 2025b)                                                                                                         | Describes the UK Marine Noise Registry's disturbance tool, which quantifies potential acoustic impacts on marine mammals from anthropogenic sources. It enables spatial and temporal analysis of noise exposure, supporting cumulative impact assessments. For EIAs, it provides a transparent and standardised approach to evaluating disturbance risk, enhancing consistency across regulatory submissions.                                                                                                                           |
| Department for Environment, Food & Rural Affairs (Defra) Guidance Supporting minimising environmental impacts from UXO clearance (Defra, 2025)                                                                 | Guidance that provides operational detail on UXO clearance methods, mitigation hierarchies, and monitoring requirements. It emphasises risk assessment and stakeholder coordination. For marine mammal EIAs, it supports the development of site-specific mitigation plans and ensures that explosive-related activities are ecologically justified and minimised.                                                                                                                                                                      |
| Offshore Renewables Joint Industry Programme for Offshore Wind's range-dependent nature of impulsive noise (Matei et al., 2024)                                                                                | Advances understanding of how impulsive noise propagates in marine environments, with implications for species-specific exposure thresholds. It provides modelling tools and empirical data to refine impact predictions. In EIAs, it enhances the accuracy of acoustic assessments and supports the justification of mitigation distances and timing restrictions.                                                                                                                                                                     |
| Natural England Offshore Wind Marine Environmental Assessments: Best Practice Advice for Evidence and Data Standards Phase I-V (Parker et al., 2022)                                                           | Guidance that sets out evidence and data standards for offshore wind farm EIAs, covering survey design, data quality, and reporting. It promotes consistency, transparency, and scientific rigour across ecological assessments. For marine mammals, it ensures that population-level impacts are assessed using robust methodologies and that mitigation is proportionate and defensible.                                                                                                                                              |
| Environmental Impact Assessment Handbook. Guidance for competent authorities, consultation bodies, and others involved in the Environmental Impact Assessment process in Scotland (SNH [now NatureScot], 2018) | The Handbook is intended to provide competent authorities, statutory consultees and others involved in the EIA process with practical guidance and a ready source of information about the process. It concentrates on the treatment of natural and cultural heritage issues but, even where there is such a focus, the principles are more widely applicable to other environmental topics. It is intended to help all of those involved in the EIA process to make it more effective and therefore lead to better informed decisions. |



| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                           | Relevance to the Assessment |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <p>Notes:</p> <p><sup>1</sup> Draft JNCC guidelines for minimising the risk of injury to marine mammals from geophysical surveys was issued in February 2025 and any new requirements will be taken into account at the time of future surveys.</p> |                             |

### 8.3 Consultation

700.

A Scoping Information Package for the Bellrock OfTDA was provided to MD-LOT, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to marine mammals for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to marine mammals are provided in **Table 8.2**.
701.

The input from this consultation process builds on existing considerations developed from previous consultation opportunities, undertaken as part of Chapter 9: Marine Mammals of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026).

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**Table 8.2: Consultation Relevant to Marine Mammals**

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to the study area and baseline?</u></b></p> <p><b><u>Question: Do you agree with the approach to the study area and characterising the baseline?</u></b></p> <p>NatureScot are in agreement with the approach to defining the study area(s).</p> <p>Slide 2 notes that the UK portion of the Management Unit (MU) population will be considered, which NatureScot welcome. Their advice is that the UK portion of each species-specific MU should be used for the impact assessment rather than the whole MU population, particularly for species with very large MUs. This is to try and present the most realistic assessment of numbers of animals affected by developments in Scottish waters. The MUs for most species are very large areas, and in most cases are too big for a meaningful understanding of impacts to affected populations. Although NatureScot know this is based on a non-biological delineation, they feel that using the UK portion of the MU better reflects the likely size of populations affected by the potential impact pathways. For species with smaller MUs, such as bottlenose dolphin <i>Tursiops truncatus</i> in the Coastal East Scotland MU and seals the entire MU should be used in the assessment – NatureScot provide further advice below in relation to bottlenose dolphin.</p> <p>The use of population estimates for the full MUs are still useful for context and baseline characterisation. NatureScot advise stating the total MU population for context and then assessing impacts against the UK portion of the MU unless otherwise advised (e.g. bottlenose dolphin and seals).</p> <p>NatureScot are mostly content with the list of desk-based sources identified to help inform the baseline and also recommend consideration of:</p> <ul style="list-style-type: none"> <li>Arso Civil, M., Quick, N., Mews, S., Hague, E. Cheney, B.J., Thompson, P.M. &amp; Hammond, P.S. (2021). Improving understanding of bottlenose dolphin movements along the east</li> </ul> | <p>The assessment of impacts from activities within the Bellrock OfTDA will be undertaken for both the UK portion and the full MU, following the same approach as applied in the Bellrock WFDA EIA.</p> <p>For the CES MU and Seal Management Units, the assessment will consider the full population.</p> <p>The additional desk-based sources have been incorporated into Table 1.1 in <b>Appendix C: Marine Mammals Existing Environment (Volume 1)</b> and will be used to inform the baseline for the Bellrock OfTDA EIA.</p> <p><b><u>Density Estimates</u></b></p> <p>The most precautionary density estimates will be taken forward for the EIA of the Bellrock OfTDA (see Tables 1.3 and 1.4 in <b>Appendix C: Marine Mammals Existing Environment (Volume 1)</b>). For seals, the latest SCOS report (SCOS, 2025) has been used, alongside density estimates derived from Carter et al. (2026).</p> <p><b><u>Bottlenose Dolphin</u></b></p> <p>For bottlenose dolphin, the Bellrock OfTDA assessment will consider both the GNS MU and the CES MU, applying the most precautionary density estimate derived from SCANS-III (Hammond et al., 2021).</p> <p>Following the advice from NatureScot to account for potential impacts that overlap within a 5 km coastal strip of the Moray Firth, a precautionary density of 0.2 individuals km<sup>2</sup> will be applied in this nearshore area. However, further information on how this density was achieved would be appreciated (see <b>Section 8.8</b>) as it has not been possible to replicate the calculations supplied by NatureScot to the same result. The rest of the coastal area and out to 12 nm in the Moray Firth will be based on assessments using the density estimate derived from SCANS-III (Hammond et al., 2021).</p> |

| Consultee | Date/Document | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | How Comment is Addressed |
|-----------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|           |               | <p>coast of Scotland. Final report. Report number SMRUC-VAT-2020-10 provided to European Offshore Wind Deployment Centre, March 2021 (unpublished);</p> <ul style="list-style-type: none"> <li>Marine Directorate's Scottish Passive Acoustic Network/East Coast Marine Mammal Acoustic Survey:<br/> <a href="https://tethys.pnnl.gov/stories/span-scottish-passive-acoustic-network#:~:text=Together%20with%20ECOMMAS%2C%20SPAN%20is,offshore%20wind%20energy%20in%20Scotland">https://tethys.pnnl.gov/stories/span-scottish-passive-acoustic-network#:~:text=Together%20with%20ECOMMAS%2C%20SPAN%20is,offshore%20wind%20energy%20in%20Scotland</a>; and</li> <li>Hague, Sinclair and Sparling. Regional baselines for marine mammal knowledge across the North Sea and Atlantic areas of Scottish waters. (2020). Scottish Marine and Freshwater Series Vol 11 No 12. Marine Scotland Science. ISSN: 2043-7722 DOI: 10.7489/12330-1.</li> </ul> <p><b><u>Density Estimates</u></b></p> <p>NatureScot advise that the most precautionary density estimate available for each species is used across all phases of development for every impact assessed quantitatively, whether this is from site specific digital aerial surveys, Small Cetaceans in European Atlantic waters and the North Sea (SCANS), or other published scientific literature, regardless of whether they are density estimates or modelled density surface outputs. These should be agreed in advance of application submission.</p> <p>The most up-to-date information available should be considered, for example:</p> <ul style="list-style-type: none"> <li>Population estimates from the most recent Special Committee on Seals (SCOS) Report, currently the 2025 SCOS Report; and</li> <li>The most precautionary density estimates available from Gilles et al 2025 (SCANS-IV) and Carter et al 2026 should be considered. JNCC have also recently published updated habitats and species feature reports and conservation status assessment for harbour seal.</li> </ul> |                          |

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   | <p><b><u>Bottlenose Dolphin</u></b></p> <p>NatureScot advise that the Greater North Sea (GNS) and the Coastal East Scotland (CES) populations should be assessed separately, using a population of 226 for the CES MU for bottlenose dolphin. It is accepted that 52.5% of the 226 CES bottlenose dolphins typically frequent coastal areas south of the Moray Firth (Arso Civil et al., 2021). To calculate the density within this region, the 118 animals are divided by the area between Peterhead and the Farne Islands (assuming uniform spread across an area bounded by the 2-20 m depth contour; Quick et al., 2014), to give a density of 0.2 animals km<sup>2</sup>.</p> <p>A separate assessment should be presented for the CES MU with a population of 226 and a density of 0.2 animals km<sup>2</sup> out to 5 km for the coastal strip along the Moray Firth, then using the SCANS density out to the remaining 12 nautical miles (nm) of the CES MU boundary. This should also be run through the Interim Population Consequences of Disturbance Model (iPCoD) on a stable population trajectory and not combined with the GNS population.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b></p> <p>NatureScot are broadly content with the potential impacts proposed to be scoped in and out (as per slide 5), subject to the following comments:</p> <ul style="list-style-type: none"> <li>▪ The list of potential impacts includes UWN for a number of activities but does not distinguish between injury or disturbance – NatureScot advise for the impulsive noise impacts that these are separated out for assessment – as suggested in the subsequent slides (i.e. slides 7 and 8).</li> <li>▪ Slide 5 states that ‘UWN from cable snapping’ is to be scoped out across each phase. However, NatureScot advise that should the offshore substation platforms be floating structures (as suggested in Table 4.2 of the <b>WFDA EIA Report</b>) then there is potential for UWN to be generated from the snapping and pinging of mooring lines – this potential impact should be included in the assessment.</li> </ul>                                                                                                                                        | <p><b>Section 8.6</b> presents the potential impacts to be scoped in. Impacts arising from UWN, have been divided into injury and disturbance see <b>Section 8.6.1.1.1</b>, <b>Section 8.6.1.1.2</b>, <b>Section 8.6.1.1.3</b>, and <b>Section 8.6.1.1.4</b>.</p> <p>Cable snapping and secondary entanglement have been scoped out, as the OfSS(s) and OfRCS(s) associated with the Bellrock OfTDA will be fixed structures, rather than floating (see <b>Section 8.6.2.5</b>).</p> <p><b><u>Protected areas – screening conclusions</u></b></p> <p>Acknowledged, as full list of sites considered for potential effects are detailed in the <b>Bellrock OfTDA Habitats Regulations Appraisal (HRA) Screening Report (Volume 2)</b>.</p> |

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   | <ul style="list-style-type: none"> <li>Similarly, ‘Secondary entanglement’ has also been scoped out; on the basis that the offshore substation platforms could be floating, NatureScot advise that this potential impact should be included in the assessment.</li> </ul> <p><b><u>Protected areas – screening conclusions</u></b></p> <p>Slide 6 notes that the bottlenose dolphin feature of the Moray Firth Special Area of Conservation (SAC) have been screened in for further assessment. NatureScot welcome this, and advised that - as bottlenose dolphin from the Moray Firth SAC are regularly recorded transiting along the east coast, and until UWN modelling has been carried out, they should be screened in for further assessment.</p>                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to assessment for disturbance from UWN?</u></b></p> <p>NatureScot are mostly content with the proposed approach for assessing disturbance from UWN as set out on slide 7, with the following comments:</p> <ul style="list-style-type: none"> <li>In relation to hearing ranges, slide 7 refers to the National Marine Fisheries Service (NMFS) 2018 thresholds, NatureScot would now advise the use of updated NMFS 2024 thresholds;</li> <li>For disturbance, NatureScot note the dose-response curve is to be used as the primary method of assessment – with the deterrence function presented for comparison only. NatureScot welcome this approach; and</li> <li>NatureScot request further narrative and explanation around the final bullet point on slide 7 – “Where there is no method for disturbance assessment for a species, then the UWN modelling would be used as a proxy for disturbance.”</li> </ul> | <p>UNW modelling for piling was previously undertaken as part of the Bellrock WFDA EIA using thresholds from Southall et al., (2019) / NMFS (2018). This included the modelling for the fixed bottom OfSS(s) within the Bellrock WFDA and simultaneous piling for the OfSS(s) and floating sub structures, this modelling will not be updated. Additional modelling will be provided for the OfRCS(s). To ensure consistency, these thresholds will be retained for the current assessment. However, during the pre-construction phase, preparation of the Piling Noise Mitigation Plan (PNMP), UWN modelling will be refined using final design parameters and the most up-to-date marine mammal auditory thresholds (e.g. NMFS, 2024).</p> <p>NatureScot’s comment is acknowledged and the assessment will be consistent with the assessment presented for the Bellrock WFDA.</p> <p>It was originally proposed, through scoping for the Bellrock WFDA, that in the event there is no agreed disturbance assessment for a species or the method applied is overly conservative the UWN modelling would be used as a proxy for disturbance. However, an agreement was reached for the Bellrock WFDA on the assessment approach and the same methodology will be applied to the assessment for the Bellrock OfTDA.</p> |

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to impact assessment?</u></b></p> <p>NatureScot have reviewed the information provided on slides 8, 9 and 10 in relation to defining magnitude, sensitivity and significance - and they broadly agree with the proposed approach.</p> <p>While NatureScot are broadly content with the Proposed Approach to EIA Receptor Sensitivity as outlined on Slide 8, NatureScot note there may be some inconsistencies between the sensitivity proposed in this table and the sensitivities assigned in the WFDA assessment. NatureScot would expect further narrative and explanation around consideration of sensitivity to be provided within the Scoping Report, and with sight of this can provide further advice at the Scoping Report stage.</p>                                                                                                        | The sensitivity to disturbance from UWN associated with non-impulsive sources (e.g. non-piling activities and vessel movements) has been assigned as low for bottlenose dolphin, white-beaked dolphin, common dolphin, killer whale, grey seal, and harbour seal, consistent with the Bellrock WFDA EIA. For operational wind turbine generator noise, which is also non-impulsive, a sensitivity of medium was applied for all species in the Bellrock WFDA EIA. Sensitivities were presented as low to medium during the scoping workshop to simplify the application across various non-impulsive impacts. |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to cumulative effects assessment?</u></b></p> <p>MD-LOT are best placed to advise on which specific proposals/projects should be included with the Cumulative Effects Assessment (CEA).</p> <p>It is advised that a year before and after the proposal is due to be constructed should be included for the CEA, looking at both the temporal and spatial overlap. In addition, NatureScot are content with the use of Effective Deterrent Ranges (EDRs) in the absence of project specific schedules. If the Cumulative Effects Framework is published within the project timeframe then NatureScot recommend that it is used to undertake the CEA. In the interim, the most up-to-date version of iPCoD can be used instead.</p> <p>NatureScot also advise that geophysical surveys should also be included as a development activity in the CEA.</p> | Noted. Should the Cumulative Effects Framework be published prior to submission, it will be used to inform the CEA. The most up-to-date version of iPCoD will be applied to each relevant receptor. Geophysical surveys will also be incorporated within the CEA.                                                                                                                                                                                                                                                                                                                                             |

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## 8.4 Existing Environment

### 8.4.1 Study Area

702. The marine mammal study areas have been defined on the basis that marine mammals are highly mobile and transitory in nature. Therefore, it is necessary to consider species occurrence not only within the Bellrock OfTDA Scoping Boundary, but also across the wider area. For each marine mammal species, the study area has been defined based on the relevant overlapping MU, taking account of current knowledge and understanding of the biology and ecology of the species. Further information on the relevant MUs for each marine mammal species is provided in Section 1.1 of **Appendix C: Marine Mammals Existing Environment (Volume 1)**.
703. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA upon which the Marine Licence application will be based. The marine mammal study areas will be reviewed and updated, if required, for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4** in **Chapter 1: Introduction**).

### 8.4.2 Baseline Condition

704. The existing environment for marine mammals is provided in **Appendix C: Marine Mammals Existing Environment (Volume 1)**, including information on the marine mammals study area and data sources used. A full assessment of the baseline conditions will be undertaken through the EIA process and will inform the species to be taken forward for further assessment in the Bellrock OfTDA EIA Report. Following the initial characterisation in **Appendix C: Marine Mammals Existing Environment (Volume 1)** and consultation undertaken for the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) and initial consultation on the Bellrock Offshore Transmission Infrastructure, as presented in **Table 8.2**, it is expected that the key species taken forward for assessment would be:
- Cetaceans:
    - Harbour porpoise, *Phocoena phocoena*;
    - Bottlenose dolphin, *Tursiops truncatus*;
    - White-beaked dolphin, *Lagenorhynchus albirostris*;
    - Common dolphin, *Delphinus delphis*;
    - Killer whale, *Orcinus orca*;
    - Minke whale, *Balaenoptera acutorostrata*;
    - Fin whale, *Balaenoptera physalus*; and
    - Humpback whale, *Megaptera novaeangliae*.
  - Pinnipeds:
    - Grey seal, *Halichoerus grypus*; and
    - Harbour seal, *Phoca vitulina*.

705. As discussed in **Appendix C: Marine Mammals Existing Environment (Volume 1)**, other marine mammal species have been recorded in the region. These include Atlantic white-sided dolphin *Lagenorhynchus acutus*, Risso's dolphin *Grampus griseus*, and long-finned pilot whale *Globicephala melas*. These species are proposed to be **scoped out** as they are considered to be rare or infrequent in the Bellrock OfTDA, so the potential for them to be impacted is considered unlikely.
706. Throughout the assessment, marine mammals are broken down into defining groups where there is a unique characteristic within that group and they are known to react in the same way to a specific stressor. The defining groups are as follows:
- Baleen whales (also known as mysticetes or just whales):
    - Minke whale, fin whale and humpback whale.
  - Toothed whales (also known as odontocetes), which can be broken down into:
    - Harbour porpoise; and
    - Dolphins which consist of bottlenose dolphin, common dolphin, white-beaked dolphin and killer whale.
  - Phocids and pinnipeds:
    - Grey seals and harbour seals.
707. It should be noted that all marine mammals will be protected through the mitigations implemented for the Bellrock Offshore Transmission Infrastructure (see **Section 8.5.1**), regardless of whether they are scoped in for full assessment in the EIA. Regarding UWN impacts, all species' hearing groups (porpoise, dolphins, baleen whale and seals) will be included within the UWN modelling, and therefore all mitigation will be designed with all species groups in mind, which will ensure the less common species would be mitigated for.

#### 8.4.2.1 Eurasian Otter

708. The Eurasian otter *Lutra lutra*, a semi-aquatic mammal and can occur in rivers, estuaries, and shallow coastal environments where prey availability is high and suitable resting sites (holts and couches) are accessible (Kruuk, 2006; Chanin, 2003). In coastal environments, otters primarily forage in shallow inshore waters, feeding predominantly on fish and crustaceans, while maintaining access to terrestrial habitats and freshwater sources for resting and grooming (JNCC, 2026; NatureScot, 2024). Coastal otters typically occupy relatively small, linear home ranges, usually extending approximately 4 to 5 km along the coastline, reflecting high prey availability in marine habitats (NatureScot, 2024; Couzens et al., 2017). However, individuals are highly mobile within these ranges and may exploit wider areas, with otters generally capable of ranging over tens of kilometres across connected habitats where required (Thomson Ecology, 2017; Wilson, 2017).
709. The closest SAC designated for otter is the River Dee SAC. The minimum straight-line distance between the SAC and the offshore section of the Bellrock OfTDA Scoping Boundary is approximately 6 km. However, where the Bellrock OfTDA Scoping Boundary adjoins MHWS, the minimum straight-line distance is approximately 17 km. Local populations of otter may however be present within the vicinity of the Bellrock OfTDA landfall Area of Search, and the National

Biodiversity Network Atlas shows records of otter along Cowie Water and Carron Water – two rivers which flow through Stonehaven and discharge within the Bellrock OfTDA Scoping Boundary (National Biodiversity Network Atlas Partnership, 2025). An initial Preliminary Ecological Appraisal undertaken in April 2026 in the intertidal area of the coastal zone did not indicate any field evidence of otter.

710. The Bellrock OfTDA is located across both inshore and offshore waters and extends to MHWS, with all surface-piercing infrastructure (i.e. the OfSS(s) and the OfRCS(s)) located within offshore waters (i.e. at least 39 km from the coastline (MHWS)) where otter are very unlikely to be found, due to their preference to intertidal and shallow sub-tidal habitats. Although the Bellrock OfTDA Scoping Boundary extends up to MHWS there will be no infrastructure or activities in the intertidal, and Bellrock OfTDA construction works at the landfall are not anticipated to disturb holts, restrict or fragment feeding grounds or inhibit the movement of otters commuting along the coast. Therefore, otter is proposed to be **scoped out** as this species is considered to be rare or infrequent in the Bellrock OfTDA and no meaningful ecological connectivity between otter and the Bellrock OfTDA has been identified, as such the potential for this species to be impacted is considered unlikely. Impacts to otters from the construction, O&M and decommissioning of Onshore Transmission Infrastructure will be considered in the Bellrock OnTDA EIA Report (see **Section 8.1**).

### 8.4.3 Data and Information Sources

711. **Appendix C: Marine Mammals Existing Environment (Volume 1)** provides an initial review of marine mammal presence within the Bellrock OfTDA and identifies the data sources proposed to inform the marine mammals EIA.
712. Cetacean density estimates will be based on the worst-case (highest and most precautionary) estimate for each species using SCANS-III, SCANS-IV and SCANS-IV winter survey data (Hammond et al., 2021; Gilles et al., 2023; Ramirez-Martinez et al., 2025) and data from Waggitt et al., (2019) and available site-specific survey data for the section of the Bellrock OfTDA that overlaps with the Bellrock WFDA, where the OfSS(s) will be located. Further detail is provided in Table 1.3 and Section 1.4.1 of **Appendix C: Marine Mammals Existing Environment (Volume 1)**.
713. Seal density estimates will be based on the worst-case densities from the Carter et al., (2022; 2026) density mapping. Further detail is provided in Table 1.4 and Section 1.4.2 of **Appendix C: Marine Mammals Existing Environment (Volume 1)**.
714. Cetacean reference populations will be based on the Inter-Agency Marine Mammal Working Group (2023) estimates for the relevant management unit and the UK portion. Seal reference populations will be based on the latest counts from the SCOS (2025), as presented in Table 1.5 of **Appendix C: Marine Mammals Existing Environment (Volume 1)**, and updated as necessary to reflect the latest available SCOS reporting.
715. Table 1.6 in **Appendix C: Marine Mammals Existing Environment (Volume 1)** provides a summary of the cetacean and seal species, density estimates, and reference populations currently available to be used in the assessments. Baseline data sources will remain under review

throughout the EIA process, and any relevant new or updated datasets will be incorporated, where appropriate.

716. Due to the limited available data, killer whale, humpback whale, and fin whale will be assessed qualitatively rather than quantitatively using a desk-based species occurrence, relevant impact pathways and modelled UWN impact ranges for the high-frequency hearing group for killer whale and the low-frequency hearing group for humpback and fin whale. A similar approach may be applied to other species currently considered rare within the study area if subsequently scoped into assessment.

#### 8.4.4 Protected Sites

717. The **Bellrock OfTDA HRA Screening Report (Volume 2)** presents the screening of European sites and Ramsar sites with marine mammal qualifying features for likely significant effect arising from the Bellrock Offshore Transmission Infrastructure. The screening outcomes and proposed approach to HRA are detailed within the **Bellrock OfTDA HRA Screening Report**. Two SACs with marine mammal qualifying features have been screened in for appropriate assessment, these are the Moray Firth SAC and the Firth of Tay and Eden Estuary SAC.
718. The **Bellrock OfTDA Marine Protected Area (MPA) Screening Report (Volume 3)** presents the screening of Nature Conservation MPAs with marine mammal protected features. The Southern Trench Nature Conservation MPA is proposed to be taken forward for further assessment within the MPA main assessment process. Further detail is provided within the **Bellrock OfTDA MPA Screening Report (Volume 3)**.

### 8.5 Potential Impacts

719. A range of impacts on marine mammals have been identified as potentially occurring during the construction, O&M, and/or decommissioning phases of the Bellrock Offshore Transmission Infrastructure. These include:
- UWN during UXO clearance<sup>33</sup>;
  - UWN during geophysical surveys<sup>34</sup>;
  - UWN during impact piling;
  - UWN and disturbance from other activities and the presence of associated vessels;
  - Entanglement in subsea infrastructure;
  - Collision risk with vessels;
  - Disturbance at seal haul-out sites;
  - Changes in water quality;

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<sup>33</sup> A separate Marine Licence application will be made prior to UXO clearance works, with an accompanying assessment of UXO clearance effects on marine mammals. The Bellrock OfTDA EIA Report will include an indicative assessment only.

<sup>34</sup> An EPS licence will be applied for separately, if deemed necessary.

- Changes to prey availability; and
- Electromagnetic field (EMF) from energised subsea cables.

720. **Section 8.6** provides further detail on each and identifies which development phases apply and justifies whether these impacts have been scoped in or out from further assessment.
721. As described in **Section 8.4.2.1**, otter are considered to be rare or infrequent in the Bellrock OfTDA and no meaningful ecological connectivity between otter and the Bellrock OfTDA has been identified. Therefore, no pathway for a significant effect has been identified, and otter have been **scoped out** of further assessment within the Bellrock OfTDA EIA.

### 8.5.1 Embedded Mitigation Measures

722. Embedded mitigation has been identified, as presented in **Table 8.3** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
723. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 8.3: Mitigation Measures for Marine Mammals**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                              | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                      |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                                    | Use of seabed preparation methods and equipment that minimise sediment suspension and dispersal will reduce the extent and duration of sediment plumes, thereby limiting the potential for indirect effects on marine mammals and the availability of their prey.                                                                                                    | Primary         |
| ✓                          | X   | X               | Implementation of soft start and ramp-up measures for piling (which would reduce UWN effects), will be set out in the PNMP and part of the Marine Mammal Mitigation Protocol (MMMP) for piling activities.<br><br>Each piling event would commence with a soft start at a lower hammer energy followed by a gradual ramp-up for at least 20 minutes to the maximum hammer energy required. The soft start and ramp-up allow mobile species to move away from the area before the maximum hammer energy with the greatest noise impact area is reached. | Implementation of soft start and ramp-up procedures during piling will reduce the potential for sudden exposure of marine mammals to high UWN levels by providing an opportunity for individuals to move away from the area before peak hammer energies are reached. This will reduce the potential for auditory injury and disturbance associated with piling.      | Primary         |
| ✓                          | X   | X               | The Bellrock Offshore Transmission Infrastructure will be micro-sited, where practicable, to avoid sensitive seabed habitats, low or limited mobility benthic species, such as Annex I habitats and Priority Marine Features. Micro-siting will be informed by surveys prior to the commencement of construction which will identify the location and extent of habitats and species.                                                                                                                                                                  | Micro-siting of the Bellrock Offshore Transmission Infrastructure to avoid sensitive habitats and species, where practicable, will reduce habitat disturbance and help maintain ecological features that support marine mammal prey resources. This will minimise the potential for indirect effects on marine mammals associated with changes to prey availability. | Primary         |
| ✓                          | ✓   | ✓               | Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&M, and decommissioning                                                                                                                                                                                                                                                                                                 | Implementation of a VMNSP will support the management of vessel movements throughout construction, O&M, and decommissioning, reducing the potential for disturbance to marine mammals from vessel presence, UWN and                                                                                                                                                  | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                          | Mitigation Type |
|----------------------------|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                  |                 |
|                            |     |                 | <p>phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (SNH, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (SNH, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> | vessel collision. Adoption of transit corridors and recognised good practice for vessel operations, where practicable, will further minimise the spatial extent and frequency of vessel-related interactions with marine mammals.                                                                                                                                |                 |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan.</p> <p>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Implementation of a MPCP will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will minimise the potential for adverse effects on marine mammals arising from contamination of the marine environment and associated impacts on prey availability. | Tertiary        |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise the potential for disturbance and other adverse effects on marine                                                                                   | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |
|                            |     |                 | with relevant international and national legislation and guidance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | mammals and support the application of good environmental practice.                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |
| ✓                          | X   | X               | <p>Development of, and adherence to, a PNMP.</p> <p>The PNMP will be developed in consultation with the MD-LOT and NatureScot and prepared in accordance with the Marine Directorate guidance on mitigation and monitoring plans (Marine Directorate, 2025), which sets out prescriptive requirements for what the PNMP should cover.</p> <p>The PNMP will be submitted to MD-LOT for approval prior to the commencement of piling, outlining mitigation and management measures that will be implemented during pile installation.</p>                                                                                                                              | Implementation of the PNMP will reduce the potential for UWN effects associated with pile installation through the application of appropriate mitigation and management measures. This will minimise the risk of behavioural disturbance, auditory injury and displacement of marine mammals during piling.                                                                                                                                                                                | Tertiary        |
| ✓                          | ✓   | X               | <p>Development of, and adherence to, a MMMP for piling.</p> <p>The MMMP for piling will be developed prior to commencement of construction and based upon best available information, methodologies, industry best practice, latest scientific understanding, current guidance and detailed project design.</p> <p>The MMMP for piling will be developed in consultation with MD-LOT and NatureScot, and will detail the proposed mitigation measures to reduce the risk of any physical or permanent auditory injury/change in hearing sensitivity (Permanent Threshold Shift (PTS)) to marine mammals and impacts of disturbance during all piling operations.</p> | The MMMP for piling will include details of designed-in mitigation, for the soft start and ramp-up, as well as details of the mitigation zone and any additional mitigation measures required in order to minimise potential impacts of any physical injury or PTS, for example, the activation of acoustic deterrent devices prior to the soft start. This will minimise the potential for behavioural responses, displacement and changes in hearing sensitivity associated with piling. | Tertiary        |
| ✓                          | X   | X               | <p>A detailed MMMP will be prepared for UXO clearance.</p> <p>The MMMP for UXO clearance will ensure there are adequate mitigation measures to minimise the risk of</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The MMMP for UXO clearance will minimise the risk of auditory injury, disturbance and displacement of marine mammals in the vicinity of clearance operations. The MMMP for UXO                                                                                                                                                                                                                                                                                                             | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                    | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
|                            |     |                 | <p>any physical or permanent auditory injury to marine mammals as a result of UXO clearance.</p> <p>The most suitable mitigation measures, based upon best available information and methodologies at that time, will be utilised. The MMMP for UXO clearance will be prepared in consultation with MD-LOT and NatureScot.</p> | <p>clearance will include details of all the required mitigation measures to minimise the potential risk of PTS as a result of UWN during UXO clearance. This would consider the options, suitability and effectiveness of mitigation measures such as, but not limited to:</p> <ul style="list-style-type: none"> <li>▪ Avoidance of UXO if practicable;</li> <li>▪ Use of low-order clearance techniques, such as deflagration;</li> <li>▪ The potential use of noise abatement if any high-order detonation is required (taking into consideration the environmental limitations);</li> <li>▪ Monitoring requirements for marine mammal observers;</li> <li>▪ Requirements for acoustic deterrent devices; and</li> <li>▪ Other UXO clearance techniques, or relocation of UXO. If more than one high-order detonation is required, other measures such as the use of scare charges; or multiple detonations, if UXO are located in close proximity, will also be considered.</li> </ul> |                 |
| ✓                          | X   | X               | <p>If required, mitigation for geophysical surveys will follow the JNCC (2017) 'Guidelines for Minimising the Risk of Injury to Marine Mammals from Geophysical Surveys'.</p>                                                                                                                                                  | <p>Application of recognised good practice mitigation during geophysical surveys will reduce the potential for UWN disturbance and injury to marine mammals. This will minimise the likelihood of behavioural responses and temporary displacement associated with geophysical surveys.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
| ✓                          | X   | X               | <p>Development of an Unexploded Ordnance Threat and Risk Assessment.</p> <p>All unexploded ordnance detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of unexploded ordnance Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and application of appropriate clearance methods and mitigation measures, helping to minimise the number and scale of UXO detonations where practicable. This will reduce the potential for UWN effects on marine mammals, including auditory injury, disturbance and displacement associated with UXO clearance. | Tertiary        |
| ✓                          | ✓   | X               | <p>Preparation of an Invasive Non-native Species Mitigation Plan (INNSMP) to include provisions for invasive non-native species (INNS) management.</p> <p>The INNSMP will implement biosecurity measures in line with international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive non-native species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Implementation of the INNSMP will reduce the risk of introducing and spreading INNS through project vessels and equipment. Application of appropriate biosecurity measures and industry guidance will help protect marine mammal prey resources and support the maintenance of the ecological conditions on which marine mammals depend.                                                                | Tertiary        |
| ✓                          | ✓   | ✓               | Adherence to the following international and national regulations and guidance, namely:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and                                                                                                                                                                                                                                                                            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                               | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                       |                 |
|                            |     |                 | <ul style="list-style-type: none"> <li>MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | biofouling control will reduce the risk of introducing and spreading INNS. This will help protect marine mammal prey resources and support the maintenance of ecosystem function.                                                                                                                                                                                                                     |                 |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme (DP).</p> <p>The DP will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                                                                                       | Implementation of a DP will ensure that decommissioning is planned and undertaken in a manner that minimises environmental disturbance and supports the protection of the marine environment. This will reduce the potential for adverse effects on marine mammals associated with the removal or management of the Bellrock Offshore Transmission Infrastructure at the end of its operational life. | Tertiary        |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement.</p> <p>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.</p>                                                | Implementation of a Construction Method Statement will ensure that construction works are undertaken in a controlled and coordinated manner, with measures in place to avoid or reduce environmental disturbance. This will minimise the potential for adverse effects on marine mammals arising from construction, including UWN, vessel movements and other sources of disturbance.                 | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                        |                 |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | Regular inspection and maintenance will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the need for more extensive corrective works. This will reduce the frequency and scale of disturbance events, including vessel activity and UWN. | Tertiary        |

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## 8.6 Scoping of Potential Impacts

### 8.6.1 Construction Phase

#### 8.6.1.1 Underwater Noise Impacts

724. UWN can cause both physiological (e.g. lethal, physical injury and auditory injury) and behavioural (e.g. disturbance, behavioural response and masking of communication) effects on marine mammals (e.g. Southall, 2021; Stöber and Thomsen, 2019).
725. The key potential impacts during construction for marine mammals are expected to be those from UWN. Activities that have the potential to generate UWN associated with the construction of the Bellrock Offshore Transmission Infrastructure are:
- Clearance of UXO, if required;
  - Geophysical surveys;
  - Piling of the FBSSs for the OfSS(s) and OfRCS(s);
  - Other construction activities such as seabed preparation, cable laying and rock placement; and
  - Presence of vessels.
726. For all UWN impacts, where possible (i.e. where there are modelling PTS ranges for an activity, or where a quantitative approach to disturbance is undertaken), the number of each marine mammal species within the potential areas of effect will be determined. This would be based on the modelled/derived effect areas through the UWN modelling, and the marine mammal densities as outlined in **Section 8.4.1**. The number of marine mammals at risk would then be assessed as a proportion of the overall population numbers, and the magnitude level determined as set out in **Table 8.6**.
727. Where a quantitative approach is not possible, a qualitative assessment will be undertaken, based on a literature review of the potential effect (e.g. reports of marine mammal behavioural reactions to certain noisy activities).

##### 8.6.1.1.1 UWN During UXO Clearance

728. Prior to construction commencing, there is the potential for UXO clearance to be required. If required, underwater deflagration or detonation could be undertaken.
729. The potential effects of underwater explosions on marine mammals include:
- Physical injury from direct or indirect blast wave effect of the high amplitude shock waves and sound wave produced by underwater detonation, which could result in immediate or eventual mortality;
  - Auditory impairment (from exposure to the acoustic wave), resulting in a PTS; or

- Behavioural change, such as disturbance to feeding, mating, breeding, and resting (Richardson et al., 1995; Ketten, 2004; von Benda-Beckmann et al., 2015).

730. The potential for UWN impacts from UXO clearance is therefore **scoped in** for further assessment in the EIA. However, as noted below, this will be provided as an indicative assessment only.

#### **8.6.1.1.1.1 Proposed Impact-specific Assessment Approach**

731. A desk-based UXO Threat and Risk Assessment for the Bellrock OfTDA will be undertaken to review the potential types, weights and numbers of UXO that could be encountered in the area to inform the assessment presented.

732. If UXO clearance is required, a separate Marine Licence Application will be made prior to UXO clearance works, with an accompanying assessment of UXO clearance impacts on marine mammals. This ensures that assessments are made on the best available information at the time, including the size of UXO expected to require clearing.

733. A detailed UXO survey will be completed prior to UXO clearance taking place. Therefore, the number of possible detonations and duration of UXO clearance operations that could be required, will not be known at the time of the Bellrock OfTDA Marine Licence Application submission. For the Bellrock OfTDA EIA Report, an indicative and conservative assessment will be undertaken, based on the best available information from contractors, other offshore wind farm UXO clearance operations and other published information.

#### **8.6.1.1.1.1.1 Auditory Injury**

734. UWN modelling will be undertaken on a range of potential UXO devices that may be present in the Bellrock OfTDA, to provide an indicative assessment of impacts. Further information on UWN modelling is provided in **Appendix D: Approach to Marine Mammals and Underwater Noise (Volume 1)**. UWN modelling will be based on the UWN thresholds for marine mammals Southall et al., (2019) / NMFS (2018) for auditory injury, in line with the Bellrock WFDA EIA (to ensure consistency between the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026 and the Bellrock OfTDA EIA Report). Due to the lack of further information on disturbance currently available, the modelling results for Temporary Threshold Shift may be used as a proxy for disturbance. The maximum predicted impact areas, based on the worst-case scenario, will be used to estimate the potential number of individuals that could be affected, based on the species density estimates. The number of individuals of each species that could be affected will be considered as a proportion of the reference population, and the resultant magnitudes and significance of effect will be based on the best available evidence and defined as outlined in **Section 8.7**. For the Marine Licence Application, underwater noise modelling will be undertaken using the most recent and appropriate auditory injury thresholds for marine mammals.

#### **8.6.1.1.1.1.2 Behavioural Change/Disturbance**

735. As described in **Section 8.6.1.1.1.1.1**, Temporary Threshold Shift results from the UWN modelling can be used a proxy to disturbance, and the JNCC (2025) EDRs for UXO clearance will be applied. The maximum predicted impact zones, based on the worst-case scenario, will be used to estimate the potential number of individuals affected using species density estimates. The number of individuals of each species predicted to be affected will be assessed as a proportion of the



reference population, with the resulting magnitudes and significance of effect determined using the best available evidence, as outlined in **Section 8.7**.

#### **8.6.1.1.2 UWN During Geophysical Surveys**

736. Prior to, during and following construction, geophysical surveys may be undertaken within the Bellrock OfTDA to inform site investigation and seabed monitoring activities. Any geophysical surveys with the potential to result in disturbance or injury to marine mammals will be subject to project-specific EPS Licence applications and supporting risk assessments.
737. The specific survey equipment to be used for future surveys is currently unknown but is anticipated to include combinations of:
- Multi-beam echo sounder (MBES);
  - Ultra-short baseline (USBL);
  - Side scan sonar (SSS); and
  - Sub-bottom profiler (SBP).
738. SBP surveys are anticipated to require mitigation in accordance with JNCC (2017) guidelines, and USBL systems may also require mitigation depending on the final survey specification. The potential effects of UWN from geophysical surveys on marine mammals will therefore be **scoped in** for further assessment in the EIA.

##### **8.6.1.1.2.1 Proposed Impact-specific Assessment Approach**

###### **8.6.1.1.2.1.1 Auditory Injury**

739. For the purposes of the Bellrock OfTDA EIA, UWN assessment will focus on SBP systems as the anticipated worst-case geophysical survey noise source. MBES and SSS frequencies are generally considered to fall outside marine mammal hearing ranges, while USBL systems are expected to operate at comparatively low source levels and are therefore considered unlikely to result in injury or significant disturbance to marine mammals. Any geophysical surveys with the potential to result in disturbance or injury to marine mammals will be subject to project-specific EPS Licence applications and supporting risk assessments. Notwithstanding this, the EIA will consider all relevant geophysical survey sound sources and associated mitigation requirements. The maximum PTS impact zone will be used to estimate the potential number of individuals affected, based on species density estimates. The number of individuals of each species predicted to be impacted will be evaluated as a proportion of the reference population. The resulting magnitude of impact and significance of effect will then be determined using the best available evidence, as outlined as outlined in **Section 8.7**.

###### **8.6.1.1.2.1.2 Behavioural Change/Disturbance**

740. To assess the potential for disturbance arising from geophysical survey equipment, the JNCC (2025c) 3 km EDR for SBP and USBL systems will be applied. These EDRs provide precautionary, evidence-based distances over which behavioural disturbance may occur for relevant marine mammal species. A quantitative assessment will be undertaken based on species density estimates and the percentage of the reference population potentially affected. The resulting

magnitude of impact and significance of effect will be determined in accordance with the methodology described in **Section 8.7**.

#### 8.6.1.1.3 UWN During Impact Piling

741. FBSSs are being considered for the OfSS(s) and OfRCS(s). Options that will require impact piling are shown in **Table 8.4**.

**Table 8.4: OfSS and OfRCS FBSSs that Require Impact Piling**

| Foundation Type <sup>1</sup>                                                                                                                                                | Item                          | Parameter (Maximum) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------------|
| Jacket                                                                                                                                                                      | Number of legs per foundation | 6                   |
|                                                                                                                                                                             | Pin piles per foundation      | 16                  |
|                                                                                                                                                                             | Pin pile diameter (m)         | 4                   |
| <sup>1</sup> Whilst suction caissons are part of the Project Design Envelope ( <b>Section 3.4.3</b> ), impact piling is not required as part of their installation process. |                               |                     |

742. Please refer to **Chapter 3: Project Description (Section 3.4.2 and Section 3.4.3)** for full details on piled substructure and anchoring options, respectively.
743. Impact piling has been established as a source of high-level UWN (Robinson et al., 2012; Kastelein et al., 2015; Kastelein et al., 2016). The potential for UWN impacts from piling is therefore **scoped in** for further assessment in the EIA, although the number of piles and parameters will be confirmed at later date.

#### 8.6.1.1.3.1 Proposed Impact-specific Assessment Approach

##### 8.6.1.1.3.1.1 Auditory Injury

744. UWN modelling will be undertaken to determine the potential impacts on marine mammals during piling. The UWN modelling will include modelling for threshold shifts (PTS) using the Southall et al., (2019) / NMFS (2018) thresholds for marine mammals in line with the Bellrock WFDA EIA (to ensure consistency between the **Bellrock WFDA EIA Report** and the OfTDA EIA Report). Further information on UWN modelling is provided in **Appendix D: Approach to Marine Mammals and Underwater Noise (Volume 1)**.
745. UWN modelling will be undertaken using the most recent and appropriate auditory injury thresholds for marine mammals for the PNMP and the MMMP for the Bellrock OfTDA and WFDA.

##### 8.6.1.1.3.1.2 Behavioural Change/Disturbance

746. For the potential for disturbance effects on marine mammals due to impact piling:
- The dose response curve from Graham et al., (2017) will be used in the absence of any updated method to determine the potential for disturbance for harbour porpoise, dolphin species and whale species;

- The deterrence distance-based function from Graham et al., (2019) will be applied to harbour porpoise only, to provide a comparison with the dose–response approach; and
- The dose response curve from Whyte et al., (2020) will be used in the absence of any updated method to determine the potential for disturbance for grey seal and harbour seal.

747. Further information on the approach to disturbance assessments (from impact piling) is provided in Section 3 of **Appendix D: Approach to Marine Mammals and Underwater Noise (Volume 1)**.
748. Population modelling may also be undertaken to determine the population level consequences of disturbance due to piling activities for Bellrock Offshore Transmission Infrastructure. For any marine mammal species where it has been identified there is the potential for a significant disturbance impact following the disturbance assessments as outlined above, population modelling will be undertaken (where possible<sup>35</sup>). The population modelling would be used to determine whether the number of animals disturbed would cause a population level effect.

#### **8.6.1.1.4 UWN and Disturbance from Other Activities and the Presence of Associated Vessels**

749. Potential sources of UWN during construction activities, other than driven piling and substructure installation, include boulder clearance, cable installation activities, installation of cable protection, and construction vessel activity associated with the installation of the Bellrock Offshore Transmission Infrastructure.
750. A range of vessel types are likely to be required to install the Bellrock Offshore Transmission Infrastructure, further detail on vessel types is provided in **Section 3.5.2.4 of Chapter 3: Project Description**.

##### **8.6.1.1.4.1.1 Auditory Injury**

751. There are currently no clear indications that UWN generated by non-piling offshore construction activities, pose a high risk of physical or auditory injury to marine mammals (OSPAR, 2009). Noise levels associated with construction vessels are also considered unlikely to result in physical or auditory injury to marine mammals (Malme et al., 1989; Richardson et al., 1995; Trigg et al., 2020).
752. UWN modelling will be undertaken to assess the potential for auditory injury to marine mammals. Injury impacts are expected to be **scoped out** unless modelling results indicate that auditory injury thresholds may be exceeded.

##### **8.6.1.1.4.1.2 Behavioural Change/Disturbance**

753. UWN generated during non-piling construction activities and associated vessel activity may result in localised behavioural disturbance to marine mammals, including temporary displacement and interruption of foraging behaviour (Pirota et al., 2015; Wisniewska et al., 2018; Mikkelsen et al., 2019; Pigeault et al., 2024; Benhemma-Le Gall et al., 2023).

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<sup>35</sup> Population modelling is currently only possible for harbour porpoise, bottlenose dolphin, minke whale, grey seal and harbour seal.

754. Where possible, vessel movements to and from construction ports will utilise existing shipping routes and therefore increases in disturbance associated with vessel activity are anticipated to be focused within the areas of elevated baseline activity as well as the Bellrock OfTDA.
755. The potential for behavioural disturbance to marine mammals resulting from UWN and disturbance from non-piling construction activities and associated vessel activity is therefore **scoped in** for further assessment in the EIA.

#### **8.6.1.1.4.2 Proposed Impact-specific Assessment Approach**

756. The assessment will consider the potential for behavioural disturbance to marine mammals arising from UWN generated during non-piling construction activities and associated vessel activity. The need for quantitative assessment of auditory injury (PTS) will be reviewed following project-specific UWN modelling.
757. The assessment will be informed by a desk-based review of similar offshore wind construction activities and vessel noise sources, including consideration of the 4 km disturbance range identified by Benhemma-Le Gall et al. (2021) for non-piling offshore wind construction activities. Consideration will also be given to the type, number and activity of construction vessels required during the construction phase, together with existing vessel activity within and surrounding the Bellrock OfTDA, to place potential disturbance effects into the context of baseline vessel activity levels.
758. The number of marine mammals potentially disturbed by UWN associated with non-piling construction activities and vessel activity will be estimated based on the number of vessels present within the Bellrock OfTDA and the predicted disturbance area.

#### **8.6.1.2 Collision Risk with Vessels**

759. As noted in **Section 8.6.1.1.4**, there will be an increase in vessel presence during the construction phase, which could lead to a potential increase in the risk of vessel collision with marine mammals. The risk of vessel collision is associated with the vessels within the Bellrock OfTDA, as well as those vessels in transit to and from the Bellrock OfTDA. Despite the potential for marine mammals to detect and avoid vessels, vessel strikes are known to occur (Wilson et al., 2007; Schoeman et al., 2020).
760. The increased risk of collision with marine mammals during construction has been **scoped in** and will be assessed in the EIA, considering the most recent and robust research, guidance and information available.

#### **8.6.1.2.1 Proposed Impact-specific Assessment Approach**

761. The assessment of the potential impact of vessel interaction will consider the type and number of vessels anticipated to be used during the construction period and the potential collision risk associated with those vessels. A literature review will be undertaken to determine the sensitivity of each marine mammal species to vessel collisions (and their ability to avoid vessels), alongside a review of the risk of collision due to the type, size, and speed of vessels associated with the Bellrock OfTDA.

762. The increase in vessel movements during construction will also be put into the context of current vessel movements in and around the Bellrock OfTDA.

763. As noted in **Section 8.5.1**, vessel best practice measures will be followed, which will reduce the potential for any vessel collision with marine mammals.

#### **8.6.1.3 Disturbance at Seal Haul-out Sites**

764. Disturbance from Bellrock OfTDA construction works at landfall, and vessel transits to and from the Bellrock OfTDA and the construction ports have the potential to disturb seals at haul-out sites, depending on the route and proximity to the haul-out sites.

765. The potential for any disturbance of seals at or from seal haul-out sites during construction (due to vessel transits) has been **scoped in** and will be assessed in the EIA, considering the most recent and robust research, guidance and information available. The construction ports to be used during construction will be identified post-consent.

##### **8.6.1.3.1 Proposed Impact-specific Assessment Approach**

766. The likelihood of increased vessels close to the locations of nearby seal haul-out sites will be used to determine the level of potential disruption and behavioural impact caused to the seals. A literature review of the latest research and evidence of disturbance at seal haul-out sites will be undertaken to determine the potential magnitude and sensitivity of effect.

767. The duration of the construction vessel movements to and from the Bellrock OfTDA will be based on the worst-case scenario. The increase in vessel movements during construction will be put into the context of current vessel movements in and around the east coast of Scotland and offshore areas.

#### **8.6.1.4 Changes in Water Quality**

768. With regard to changes in water quality, increases in suspended sediment concentrations and the remobilisation of sediment-bound contaminants during construction activities have the potential to affect marine mammals and their prey species. These pathways will be assessed within the Marine Geology, Oceanography, and Physical Processes chapter of the Bellrock OfTDA EIA Report, including the implementation of standard industry practice and embedded mitigation measures.

769. Any increases in suspended sediment concentrations, sediment deposition, or changes in water quality resulting from construction activities are expected to be temporary, localised, and rapidly disperse. Given the high mobility of marine mammals and the limited spatial and temporal extent of the predicted changes, significant effects on marine mammals are not anticipated. Potential impacts on marine mammals arising from change in water quality during construction are therefore **scoped out** of further assessment in the EIA.

#### **8.6.1.5 Changes to Prey Availability**

770. **Chapter 7: Fish and Shellfish Ecology** outlines the potential impacts on fish species and therefore the prey resource for marine mammals during construction.

771. The potential for any changes to the prey resource for marine mammals during construction are **scoped in** for further assessment in the EIA. Impacts will be based on the assessments for fish and shellfish ecology in the Bellrock OfTDA EIA Report.

#### **8.6.1.5.1 Proposed Impact-specific Assessment Approach**

772. The potential impacts on known prey species for each marine mammal receptor will be assessed based on the results of the fish and shellfish ecology impact assessment, including UWN modelling based on the appropriate realistic worst-case scenario for these receptors. The assessment will consider the known dependence of each marine mammal species to those prey species and the potential impact on energy demands should prey species be displaced.
773. A literature review of the latest research and evidence of marine mammal sensitivities to changes in prey species will be undertaken and will be considered alongside the results of the assessments to prey species to determine the potential magnitude and sensitivity of the impact.

### **8.6.2 Operation and Maintenance Phase**

#### **8.6.2.1 Underwater Noise Impacts**

774. Potential sources of UWN during the O&M phase include:
- Geophysical surveys;
  - Underwater O&M activities, such as underwater surveys, preventive and corrective maintenance to substructures, cable repairs (including re-burial and any additional rock placement); and
  - O&M vessel activity.

##### **8.6.2.1.1 UWN During Geophysical Surveys**

775. Geophysical surveys may be required during the O&M phase to support inspection, maintenance, and monitoring activities within the Bellrock OfTDA. Such surveys may include MBES, USBL, SSS, and SBP systems and therefore have the potential to result in UWN impacts on marine mammals. The potential impact of UWN from geophysical surveys during the O&M phase is therefore **scoped in** for further assessment in the EIA.

##### **8.6.2.1.1.1 Proposed Impact-specific Assessment Approach**

776. The assessment approach for geophysical survey UWN during the O&M phase will be consistent with the construction phase assessment described in **Section 8.6.1.1.2.1**.

##### **8.6.2.1.2 UWN and Disturbance from Other Activities and the Presence of Associated Vessels**

777. UWN impacts associated with any planned and unplanned maintenance work are expected to be lower than those during construction, although they would be undertaken periodically over a longer time frame (and during the lifetime of the Bellrock Offshore Transmission Infrastructure). Vessel presence within the Bellrock OfTDA, as well as those vessels in transit to and from the Bellrock OfTDA are anticipated during the O&M phase.



778. The potential impacts associated with UWN during O&M (including PTS, disturbance and behavioural effects and impacts on prey species) are **scoped in** and will be considered further in the EIA, taking into account the most recent and robust research, guidance and information available.

#### **8.6.2.1.2.1 Proposed Impact-specific Assessment Approach**

779. The potential for disturbance from UWN during the O&M phase will be based on the UWN modelling and assessment of similar activities for the construction phase (**Section 8.6.1.1.4**).
780. As outlined in **Section 8.6.1.1.4**, noise generated from activities such as cable laying is not expected to be sufficient to cause PTS or other injury to marine mammals. The need for a quantitative assessment will be reviewed after project specific UWN modelling has been conducted. Disturbance is likely to be the main potential noise impact from O&M activities.

### **8.6.2.2 Collision Risk with Vessels**

781. As with construction, the increased risk of collision with marine mammals during the O&M phase is **scoped in** for further consideration in the EIA. It is anticipated that the impacts associated with vessel activities at any one-time during O&M would be less than those during the construction phase, due to the lower number of vessels, although vessels would be in the area periodically for the full lifetime of the Bellrock Offshore Transmission Infrastructure which may pose a greater risk over time.

#### **8.6.2.2.1 Proposed Impact-specific Assessment Approach**

782. The O&M ports to be used for the Bellrock Offshore Transmission Infrastructure will be determined post-consent. Therefore, a precautionary range of potential port regions and representative ports will be considered within the Bellrock OfTDA EIA to define a worst-case scenario. Vessel movements to and from any port and the Bellrock OfTDA will be incorporated within established vessel corridors where possible, however, there is an increased risk for vessel interaction within the Bellrock OfTDA as well as during transit to and from port and the Bellrock OfTDA.
783. The same assessment methodology as outlined in **Section 8.6.1.2** will be undertaken.

### **8.6.2.3 Disturbance at Seal Haul-out Sites**

784. As outlined for construction (**Section 8.6.1.3**), depending on the vessel corridors used for vessel movements there is the potential for disturbance at seal haul-out sites. It is anticipated that the impacts associated with vessel activities at any one-time during O&M would be less than those during the construction phase, and the magnitude of impact (number of vessels) is likely to be lower, and spatial extent may vary according to the ports used.
785. There is no potential for any direct disturbance as a result of activities within the Bellrock OfTDA, due to the distance to the nearest known seal haul-out sites (see **Appendix C: Marine Mammals Existing Environment (Volume 1)** for further information). However, depending on the location of the O&M ports and potential transit routes for vessels there is the potential for associated disturbance.
786. The potential for any disturbance of seals at or from seal haul-out sites during operation has been **scoped in** for further assessment in the EIA.

#### **8.6.2.3.1 Proposed Impact-specific Assessment Approach**

787. The assessment approach will be consistent with the construction phase assessment described in **Section 8.6.1.3.1**.

#### **8.6.2.4 Changes to Prey Availability**

788. **Chapter 7: Fish and Shellfish Ecology** outlines the potential impacts on fish species and therefore the prey resource for marine mammals during O&M.
789. The potential for any changes to the prey resource for marine mammals during O&M has been **scoped in** for further assessment in the EIA. Impacts will be based on the assessments in the fish and shellfish ecology chapter of the Bellrock OfTDA EIA Report.

#### **8.6.2.4.1 Proposed Impact-specific Assessment Approach**

790. The proposed approach for the assessment of changes to prey resources during O&M will be the same as for construction (as outlined in **Section 8.6.1.5**).

#### **8.6.2.5 Entanglement in Subsea Infrastructure**

791. Entanglement risk during the O&M phase is not considered to represent a credible impact pathway for marine mammal receptors. The Offshore Transmission Infrastructure will not include floating substructures, with the OfSS(s) and OfRCS(s) comprising FBSSs only. As a result, there will be no mooring lines, dynamic inter-array cables or other suspended infrastructure within the water column that could facilitate primary entanglement, accumulation of marine debris or abandoned fishing gear resulting in secondary entanglement, or tertiary entanglement pathways.
792. Entanglement (primary, secondary and tertiary) with subsea infrastructure is therefore **scoped out** of further assessment in the EIA.

#### **8.6.2.6 Changes in Water Quality**

793. With regard to changes in water quality during the O&M phase, inspection, maintenance, repair, and replacement activities associated with seabed contacting infrastructure have the potential to result in temporary increases in suspended sediment concentrations and localised remobilisation of sediment-bound contaminants. These pathways will be assessed within the Marine Geology, Oceanography, and Physical Processes chapter of the Bellrock OfTDA EIA Report, including standard industry practice and embedded mitigation measures.
794. O&M activities with the potential to affect water quality are expected to be smaller in scale, less frequent and more spatially limited than construction activities. Any associated changes in suspended sediment concentrations, sediment deposition or water quality are therefore anticipated to be temporary and localised. Given the high mobility of marine mammals and the limited extent of predicted changes, significant effects on marine mammals are not anticipated. Potential impacts on marine mammals arising from changes in water quality during O&M are therefore **scoped out** of further assessment in the EIA.



### 8.6.2.7 Electromagnetic Fields Generated by Energised Subsea Cables

795. EMF generated by energised subsea cables has the potential to affect marine mammals and their prey species. However, EMF strength, particularly the magnetic field component, decreases rapidly with increasing horizontal and vertical distance from the cable, with attenuation increasing where cables are buried (Normandeau et al., 2011). Offshore export cables and interconnector cable(s) within the Bellrock OfTDA are expected to be buried where practicable, with cable protection used where target burial depths cannot be achieved. In addition, there will be no dynamic inter-array cables within the water column. Whilst it has been suggested that marine mammals may be capable of detecting magnetic fields, there is currently no direct evidence demonstrating behavioural effects or disruption to cetacean or seal movements from subsea cables, and there are no regulatory thresholds or guidance defining acceptable EMF levels in the marine environment (Copping et al., 2020).
796. Harbour porpoise are known to regularly transit across buried High Voltage Direct Current cables within the Baltic Sea with no apparent effect on migratory behaviour, and there is no evidence to suggest seal species respond to EMF (Gill et al., 2005). On this basis, significant effects from EMF on marine mammals are not anticipated and this impact is therefore **scoped out** of further assessment in the EIA. This approach is consistent with NatureScot's scoping advice for the Bellrock WFDA (MD-LOT, 2024).

### 8.6.3 Decommissioning Phase

797. During decommissioning the potential impacts are anticipated to be similar to those for the construction phase, depending on the methods used.
798. Potential impacts on marine mammals associated with the decommissioning phase will be assessed, based on the potential impacts associated with construction. However, a further assessment will be carried out ahead of any decommissioning works to be undertaken taking account of known information at that time, including all relevant guidelines and requirements.
799. The potential impacts during decommissioning of the Bellrock Offshore Transmission Infrastructure that will be assessed for marine mammals are:
- UWN impacts;
    - UWN and disturbance from other activities and the presence of associated vessels; and
    - UWN during Geophysical surveys.
  - Collision risk with vessels;
  - Disturbance at seal haul-out sites; and
  - Changes to prey availability.
800. The proposed approach for the assessment of potential impacts during decommissioning will follow the proposed methodology outlined for similar activities during construction (as outlined in **Section 8.6.1**).

#### 8.6.4 Bellrock OfTDA Whole Project Assessment

801. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on marine mammals. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
802. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock OnTDA for marine mammals. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

#### 8.6.5 Potential Cumulative Effects

803. The Bellrock OfTDA CEA will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
804. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 8.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on marine mammals.
805. Further detail on the proposed approach of the CEA is provided in **Section 8.7.6**.

#### 8.6.6 Potential Transboundary Effects

806. There is a significant level of marine development being undertaken or planned by European Union Member States and others (i.e. Norway, Denmark, Germany, Belgium and the Netherlands) in the North Sea. Populations of marine mammals are highly mobile and there is potential for transboundary impacts, especially when considering UWN impacts. However, given the distance to the transboundary line and that the assessment will be made against the UK MUs, these impacts are proposed to be scoped out of the EIA.

#### 8.6.7 Summary of Potential Impacts

807. **Table 8.5** summarises the outcomes of the scoping assessment presented in **Section 8.6.1** to **Section 8.6.6**, identifying the relevant impacts for marine mammals and confirming whether these have been scoped in or scoped out of further assessment in the Bellrock OfTDA EIA.

**Table 8.5: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Marine Mammals**

| Potential Impacts                                                                | Receptor(s)                | Scoped In or Scoped Out? (✓ or X) |     |                 |
|----------------------------------------------------------------------------------|----------------------------|-----------------------------------|-----|-----------------|
|                                                                                  |                            | Construction                      | O&M | Decommissioning |
| UWN during clearance of UXO                                                      | All marine mammal species  | ✓                                 | X   | X               |
| UWN during geophysical surveys                                                   | All marine mammal species  | ✓                                 | ✓   | ✓               |
| UWN during impact piling                                                         | All marine mammal species  | ✓                                 | X   | X               |
| UWN and disturbance from other activities and the presence of associated vessels | All marine mammal species  | ✓                                 | ✓   | ✓               |
| Collision risk with vessels                                                      | All marine mammal species  | ✓                                 | ✓   | ✓               |
| Disturbance at seal haul-out sites                                               | Grey seal and harbour seal | ✓                                 | ✓   | ✓               |
| Changes in water quality                                                         | All marine mammal species  | X                                 | X   | X               |
| Changes to prey availability                                                     | All marine mammal species  | ✓                                 | ✓   | ✓               |
| Entanglement in subsea infrastructure                                            | All marine mammal species  | X                                 | X   | X               |
| EMF generated by energised subsea cables                                         | All marine mammal species  | X                                 | X   | X               |
| Bellrock OfTDA Whole Project Assessment                                          | All marine mammal species  | ✓                                 | ✓   | ✓               |
| Cumulative effects                                                               | All marine mammal species  | ✓                                 | ✓   | ✓               |
| Transboundary effects                                                            | All marine mammal species  | X                                 | X   | X               |

## 8.7 Proposed Approach to Impact Assessment

808. The impact assessment for marine mammals will follow the approach set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.
809. The sections below set out further details around the approach to impact assessments specific to marine mammals.
810. **Appendix D: Approach to Marine Mammals and Underwater Noise (Volume 1)** sets out the proposed approach to assessment for disturbance from UWN.
811. In addition to the general impact assessment methodology described within this section, **Section 8.6** presents the proposed impact-specific assessment approach for each impact that has been scoped in for further assessment.

### 8.7.1 Data to be Used in Impact Assessment

812. The key baseline data sources to be utilised in the EIA will be the density estimate for each species and the reference population for each species (see **Section 8.4.3** for a summary of data sources). See **Appendix C: Marine Mammals Existing Environment (Volume 1)** for the initial review of density data sources and reference populations.
813. Following the full baseline review, all density estimates would be collated, and as a precautionary approach, the worst-case (highest) estimate for each species would be used to inform the assessment.
814. The density and reference population estimates currently available are provided in each species section, as well as a summary of the proposed data to be used in the impact assessments. This is indicative only, as a full baseline review will be undertaken in the Bellrock OfTDA EIA Report.

### 8.7.2 Sensitivity

815. The sensitivity of a receptor is determined through its ability to accommodate change and on its ability to recover if it is affected. The sensitivity level of marine mammals to each type of effect is justified within the effect assessment and is dependent on the following factors:
- Adaptability – The degree to which a receptor can avoid or adapt to an effect;
  - Tolerance – The ability of a receptor to accommodate temporary or permanent change without a significant adverse effect;
  - Recoverability – The temporal scale over and extent to which a receptor will recover following an effect; and
  - Value – A measure of the receptor importance, rarity and worth (as outlined below).
816. Definitions of sensitivity levels for marine mammals will follow those set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

### 8.7.3 Ecological Value

817. The 'value' of the receptor forms an important element within the marine mammals assessment, for instance, if the receptor is a protected species, or habitat, or has an economic value. It is important to understand that high value and high sensitivity are not necessarily linked within a particular effect. A receptor could be of high value but have a low or negligible physical/ecological sensitivity to an effect. Similarly, low value does not equate to low sensitivity and is judged on a receptor-by-receptor basis.
818. In the case of marine mammals, most species are protected by a number of international commitments as well as European and UK law and policy. All cetaceans in UK waters are EPS and, therefore, are internationally important. Harbour porpoise, bottlenose dolphin, grey seal and harbour seals are also afforded international protection through the designation of SACs (see the **Bellrock OFTDA HRA Screening Report (Volume 2)**). As such, all species of marine mammal can be considered to be of high value. The value will be considered, where relevant, as a modifier for the sensitivity assigned to the receptor, based on expert judgement. The definitions of value will follow those set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

### 8.7.4 Magnitude

819. The thresholds for defining the potential magnitude of impact that could occur from a particular impact will be determined using expert judgement, current scientific understanding of marine mammal population biology, and JNCC et al. (2010) and Marine Scotland (2020), guidance on disturbance to EPS species. The JNCC et al. (2010) EPS guidance suggests definitions for a 'significant group' of individuals or proportion of the population for EPS species. As such this guidance has been considered in defining the thresholds for magnitude of impacts (**Table 8.6**).
820. The JNCC et al. (2010) guidance provides some indication on how many animals may be removed from a population without causing detrimental effects to the population at Favourable Conservation Status. The JNCC et al. (2010) guidance also provides limited consideration of temporary effects, with guidance reflecting consideration of permanent displacement.
821. Temporary effects are considered to be of medium magnitude at greater than 5% of the reference population. JNCC et al. (2010) guidance considered 4% as the maximum potential growth rate in harbour porpoise, and the 'default' rate for cetaceans. Therefore, beyond natural mortality, up to 4% of the population could theoretically be permanently removed before population growth could be halted. In assigning 5% to a temporary effect in this assessment, consideration is given to uncertainty of the individual consequences of temporary disturbance.
822. Permanent effects with a greater than 1% of the reference population (both abundance UK population and abundance reference population) being affected within a single year will be considered to be high in magnitude in this assessment. This is based on Agreement on the ASCOBANS and Defra advice (Defra, 2003; ASCOBANS, 2015) relating to effects from fisheries by-catch (i.e. a permanent effect) on harbour porpoise. A threshold of 1.7% of the relevant harbour porpoise population above which a population decline is inevitable has been agreed with Parties to ASCOBANS, with an intermediate precautionary objective of reducing the effect to less than 1% of the population (Defra, 2003; ASCOBANS, 2015).

823. For population modelling there are currently no specific potential biological removal limits in place, therefore there are currently no specific thresholds to determine whether a population level effect would be significant in EIA terms. See **Appendix D: Approach to Marine Mammals and Underwater Noise (Volume 1)** for the proposed approach and further information on how the potential for significant population level effects has been defined for the Bellrock OfTDA.

**Table 8.6: Definitions of Levels of Magnitude for Marine Mammals**

| Value      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Criteria for Quantitative Assessments       |                                             |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Approximate Duration of Effect <sup>1</sup> | % of Reference Population Exposed to Effect |
| High       | A change in the behaviour or size and extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is predicted to irreversibly alter the population in the short-to-long term and to alter the long-term viability of the population and/or the integrity of the protected site. The effect, which may be either reversible or irreversible in individuals, would be of sufficient severity to affect the long-term viability of the relevant population over a generational scale.     | Permanent                                   | >1%                                         |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Long-term                                   | >5%                                         |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Temporary                                   | >10%                                        |
| Medium     | A change in the behaviour or size and extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that occurs in the short and long-term, but which is not predicted to alter the long-term viability of the population and/or the integrity of the protected site. The effect, which may be either reversible or irreversible in individuals, could result in some population-level effects, but not a level that would alter the relevant population trajectory over a generational scale. | Permanent                                   | 0.1% - 1%                                   |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Long-term                                   | 1% - 5%                                     |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Temporary                                   | 5% - 10%                                    |
| Low        | A change in the behaviour or size and extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site that is sufficiently small-scale or of short duration to cause no long-term harm to the feature/population. Whilst there may be effects at an individual level which may be either reversible or irreversible, these would not be at a scale that would lead to any population-level effects.                                                                                              | Permanent                                   | 0.001% - 0.1%                               |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Long-term                                   | 0.1% - 1%                                   |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Temporary                                   | 1% - 5%                                     |
| Negligible | Very slight change from the behaviour or size and extent of distribution of the relevant biogeographic population or the population that is the interest feature of a specific protected site. Effects are likely to be reversible and highly unlikely to result in any population-level effects.                                                                                                                                                                                                                                                                            | Permanent                                   | < 0.001%                                    |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Long-term                                   | < 0.1%                                      |
|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Temporary                                   | < 1%                                        |

| Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Definition                                                                                                                                                                    | Criteria for Quantitative Assessments       |                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                               | Approximate Duration of Effect <sup>1</sup> | % of Reference Population Exposed to Effect |
| No change                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No loss of, or gain in, size or extent of distribution of the relevant biogeographic population or the population that is the interest features of a specific protected site. | N/A                                         | N/A                                         |
| <p>Notes:</p> <p><sup>1</sup> Approximate duration of effect:</p> <ul style="list-style-type: none"> <li>▪ Permanent: Impacts of any duration leading to lasting effects;</li> <li>▪ Long-term: Impacts are expected to occur throughout the lifetime of the Bellrock Offshore Transmission Infrastructure either continuously or intermittently with recoverable effects; or</li> <li>▪ Temporary: Impacts lasting a short duration and/or occurring intermittently with recoverable effects.</li> </ul> |                                                                                                                                                                               |                                             |                                             |

### 8.7.5 Assessment of Effects

824. The definitions of effect significance to be used for the marine mammals impact assessment are provided in **Table 8.7**. Effects that are moderate or major adverse are considered to be significant in EIA terms.

**Table 8.7: Effect Significance Definitions**

| Significance | Definition                                                                                                                                                                                                                                                                                                                    |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Major        | Very large or large change in receptor, either adverse or beneficial, which are important at a population (national or international) level because they contribute to achieving international, national or regional objectives, or, expected to result in exceedance of statutory objectives and/or breaches of legislation. |
| Moderate     | Intermediate or large change in receptor, which may to be important considerations at national or regional population level. Potential to result in exceedance of statutory objectives and/or breaches of legislation.                                                                                                        |
| Minor        | Small change in receptor, which may be raised as local issues but are unlikely to be important at a regional population level.                                                                                                                                                                                                |
| Negligible   | No discernible change in receptor.                                                                                                                                                                                                                                                                                            |

## 8.7.6 Approach to Cumulative Effects Assessment

### 8.7.6.1 Screening Area

825. The CEA screening areas for marine mammals are based on their respective MUs, as discussed in Section 1.5 in **Appendix C: Marine Mammals Existing Environment (Volume 1)**. For the marine mammal species considered through **Bellrock OfTDA Scoping Report**, the following MUs will be used as the CEA screening area:

- Harbour porpoise within the NS MU;
- Bottlenose dolphin within the GNS and CES MUs;
- Common dolphin, white-beaked dolphin and minke whale within the Celtic and Greater North Seas MU:
  - Note that, due to the large size of this MU, projects and plans will be considered only if they are located within the NS MU or GNS area, in order to provide a more realistic while still precautionary list of projects that may have an impact on the same population as the Bellrock OfTDA;
- Killer whale within the Northeast Atlantic MU;
- Humpback whale and Fin whale within the North Atlantic MU;
- Grey seal within the East Scotland, Northeast England and Moray Firth MUs; and
- Harbour seal within the East Scotland MU.

### 8.7.6.2 Screening for Cumulative Effects Assessment

826. The methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** will be followed with respect to the CEA for marine mammals.

827. The plans and projects that will be considered in the CEA are those that are:

- Located in the relevant marine mammal MUs (as described in **Section 8.4.3**); and
- If there is the potential for cumulative impacts during the construction, O&M and/or decommissioning of the project.

828. The marine mammal CEA will consider projects, plans and activities which have sufficient information available to undertake the assessment, in line with the approach set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

829. With the final list of projects that will be used for the CEA assessment, project specific data will be collected from EIA Reports and HRAs, such as:

- Densities of marine mammals used;
- Impact ranges used for assessments;



- The number of individuals expected to be disturbed from the projects as well as the Bellrock OfTDA; and
- The number of individuals expected to be at risk of PTS prior to mitigation, and the number at risk of vessel collision.

830. For the potential for disturbance from piling, the data collected from other projects and the assessments for the Bellrock OfTDA will be totalled for the assessment, and the magnitude of impact (and potential for significance) will be determined based on the methods as set out in **Section 8.7.1** to **Section 8.7.5** (e.g. more than 5% of the population disturbed is significant). iPCoD will also be undertaken to help determine significance of effect.
831. Where project specific data is not available, a generalised approach would be used to determine the number of marine mammals potentially at risk of disturbance. This will be based on wider density estimates (e.g. SCANS-IV (Gilles et al., 2023)) for cetaceans, and Carter et al., (2022 and 2026) for seal species. Generalised disturbance ranges will be used to determine the number of individuals at risk of disturbance.

## 8.8 Scoping Questions to Consultees

832. The following questions are posed to consultees to help them frame and focus their response to the marine mammals scoping exercise, which will in turn inform the EIA:
- Do you agree that all the relevant data sources have been identified in **Section 8.4.3**?
  - Do you agree that all relevant legislation, policy, and guidance have been identified in **Section 8.2**?
  - Do you agree with the proposed study areas as presented in **Section 8.4.1**?
  - Do you agree with the marine mammal species to be scoped in, the reference populations, and the densities to be used for assessments, as presented in **Table 8.5**?
  - Please can NatureScot provide further information on how they have calculated the precautionary bottlenose dolphin density of 0.2 individuals per km<sup>2</sup>? As it has not been possible to replicate the same density based on the information supplied;
  - Do you agree with the impacts to be scoped in during construction?
  - Do you agree with the impacts to be scoped in during O&M?
  - Do you agree with the impacts to be scoped in during decommissioning?
  - Do you agree with the approach to UWN modelling, and the thresholds to be used?
  - Do you agree with the proposed approaches to assess the potential for disturbance due to UWN?
  - Do you agree with the approach to cumulative assessments, and the use of population modelling?
  - Do you have any other matters or information sources that you wish to present?

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# 9 Intertidal and Offshore Ornithology

## 9.1 Introduction

833. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on intertidal and offshore ornithology.
834. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
835. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
836. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

837. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
838. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on intertidal and offshore ornithology receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
839. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 6: Intertidal and Benthic Ecology;**
  - **Chapter 7: Fish and Shellfish Ecology; and**
  - **Chapter 11: Shipping and Navigation.**
840. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 9.2 Legislation, Policy and Guidance

841. **Table 9.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching legislation and policy relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 9.1: Summary of Relevant Legislation and Guidance for Intertidal and Offshore Ornithology**

| Relevant Legislation, Policy and Guidance                                                                                                            | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>The Conservation (Natural Habitats &amp; c.) Regulations 1994</p> <p>The Conservation of Offshore Marine Habitats and Species Regulation 2017</p> | <p>These regulations transpose the Council Directive 92/43/EEC (the Habitats Directive) and the European Directive (2009/147/EC) on the conservation of wild birds (The Birds Directive) into United Kingdom (UK) law (the Habitats Regulations).</p> <p>The Habitats Regulations provide for the designation and protection of 'European sites', including Special Protection Areas (SPA) for birds listed under Annex I of the Birds Directive. The Habitats Regulations convey a statutory requirement for local planning authorities to undertake a 'Habitats Regulations Appraisal' (HRA) of the potential impacts of plans and projects, including development proposals, on European sites.</p> |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                       | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Convention on Wetlands (Ramsar sites)                                                                                                                                                                                                                                                       | <p>Ramsar sites are wetlands of international importance designated under the Convention on Wetlands (also called the Ramsar Convention) (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resource.</p> <p>All Ramsar sites in Scotland are co-designated as European sites or Sites of Special Scientific Interest (SSSI), but they do not have standalone protection under the Habitats Regulations. It is the Scottish Government's position that any plan or project which could affect a Ramsar site will involve undertaking a HRA to determine whether the proposal is likely to have a significant effect on the notified natural features of the site (Scottish Government, 2025).</p> |
| Wildlife and Countryside Act 1981                                                                                                                                                                                                                                                               | This legislation provides for the legal protection of all wild birds in Great Britain, special protection measures for Schedule 1 bird species during the breeding season, and for the protection of SSSIs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Guidance</b>                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Guidance for Ecological Impact Assessment in the UK and Ireland – Terrestrial, Freshwater, Coastal and Marine, Chartered Institute of Ecology and Environmental Management (2018)                                                                                                               | Standard good practice guidance for ecological evaluation and assessment for proposed developments in terrestrial, freshwater, marine and coastal environments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Joint Statutory Nature Conservation Body Interim Displacement Advice Note (updated January 2022 to include reference to the Joint Statutory Nature Conservation Body Interim Advice on the Treatment of Displacement for Red-Throated Diver), Joint Nature Conservation Committee (JNCC) (2017) | Guidance on how to present assessment information on the extent and potential consequences of seabird displacement from offshore wind developments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NatureScot Guidance Notes to Support Offshore Wind Applications: Marine Ornithology (with those available at the time of writing being NatureScot, 2025, 2023a – 2023g).                                                                                                                        | Core resource to inform offshore wind development proposals in Scotland. Includes guidance notes on displacement assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## 9.3 Consultation

842. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to intertidal and offshore ornithology for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to intertidal and offshore ornithology are provided in **Table 9.2**. Relevant consultation pertinent to ornithology from the Bellrock WFDA EIA (Bellrock Offshore Wind Farm Limited, 2026) will also be considered where appropriate.

**Table 9.2: Consultation Relevant to Intertidal and Offshore Ornithology**

| Consultee  | Document/Date                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | How Comment is Addressed                                                                                                                                                                                                                                      |
|------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach to determining the study area and connectivity?</u></b></p> <p>Breeding season connectivity will be determined using Woodward et al (2019) in accordance with NatureScot Guidance Note 3.</p> <p>NatureScot agree with the approach set out in slide 2, whereby non-breeding season connectivity will be determined using the Biologically Defined Minimum Population Scales Report (BDMPS) for all species except for guillemot <i>Uria aalge</i> and herring gull <i>Larus argentatus</i>; and they request that connectivity to all SPAs in the relevant BDMPS region (as per Appendix A of the BDMPS report) is considered.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | The approach used to determine connectivity aligns with the guidance provided in the comment.                                                                                                                                                                 |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the approach and identified key receptors?</u></b></p> <p><b><u>Question: Are you aware of any other suitable data that could be used to inform the baseline?</u></b></p> <p>NatureScot agree with the outlined approach and support the identification of key ornithological receptors as guillemot, razorbill <i>Alca torda</i>, kittiwake <i>Rissa tridactyla</i>, puffin <i>Fratercula arctica</i> and gannet <i>Morus bassanus</i> as well as shore and water birds identified in greatest abundance during landfall intertidal surveys.</p> <p>The list of key receptors may be updated once landfall overwintering intertidal surveys are completed; NatureScot would welcome sight of the survey results and any updates list of key receptors.</p> <p>The site-specific data sources listed will not cover the whole of the OfTDA study area. Therefore, other information sources will also be required in order to provide sufficient baseline data on the likely usage of the whole site by birds. It may be helpful to also use existing tracking studies, much of which can be found on the Birdlife International Seabird Tracking database or studies such as Cleasby et al (2018).</p> <p>NatureScot recommend that a desk-based study is undertaken to identify relevant data / information sources. NatureScot have been</p> | <p>The approach used to identify key receptors aligns with the guidance provided in the comment.</p> <p>A list of information sources identified to inform the baseline is presented in <b>Table 9.3</b>, these include suggested sources in the comment.</p> |

| Consultee  | Document/Date                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                                                                                   | able to review the two years of digital aerial survey (DAS) for the Bellrock WFDA and agree that the most frequent species likely to be sensitive to impacts from this development are guillemot, razorbill, puffin, kittiwake and gannet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the potential impacts for scoping in/out?</u></b></p> <p>Overall, NatureScot agree that the potential impacts scoped in/out are generally appropriate for the OfTDA, with the following comments:</p> <p>NatureScot recommend that habitat loss / disturbance be included as an indirect impact through effects on prey species. They also advised that disturbance from vessel transit should be considered. In relation to barrier effects, NatureScot advised that the OfTDA infrastructure is relevant in the context of cumulative impacts with the WFDA and this pathway should therefore be included as part of distributional effects. In their view this previous advice remains of relevance to the updated OfTDA Scoping Information Package.</p> | <p>Noted. The scoping assessment, which details which impacts are proposed to be scoped in and scoped out of the Bellrock OfTDA EIA, is presented in <b>Section 9.6</b>. This includes indirect impacts on ornithological receptors through changes to prey availability, which is proposed to be scoped in across the construction, O&amp;M, and decommissioning phases.</p> <p>In relation to barrier effects, this impact pathway has been considered within the scoping assessment and is proposed to be scoped out of further assessment. The detailed justification supporting this scoping conclusion is provided in <b>Section 9.6.2.6</b>.</p> |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the impact assessment?</u></b></p> <p>NatureScot agrees with the proposed approach in relation to seabird reference population, availability bias, disturbance/displacement assessment, modelling and highly pathogenic avian influenza (HPAI) (as set out in slides 5 and 6).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Noted. The proposed approach to the impact assessment is set out in <b>Section 9.7</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <p><b><u>Question: Do you agree with the proposed approach to the HRA?</u></b></p> <p>NatureScot agrees with the proposed approach to HRA. However, NatureScot request further narrative and explanation in relation to the second bullet point – <i>“the scale of the initial connectivity screening necessitates a proportionate HRA approach to ensure that assessment effort is focused on SPAs with a realistic pathway for”</i>.</p>                                                                                                                                                                                                                                                                                                                                                        | The connectivity in the HRA is addressed in the <b>Bellrock OfTDA HRA Screening Report (Volume 2)</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



## 9.4 Existing Environment

843. This section provides a summary of general baseline characteristics of seabird populations present in the vicinity of the Bellrock OfTDA Scoping Boundary during their respective breeding and non-breeding periods (the periods as defined by NatureScot (2020a)). For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA baseline has been informed by available data from the following sources:
- Offshore Ornithology Digital Aerial Survey Baseline Report which covered the period from March 2022 to February 2024 (Appendix 10.1 (Volume IV) of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026);
  - Bellrock Offshore Wind Farm: Cowie Landfall Site Wintering Bird Survey 2025/2026 Technical Report (**Appendix E (Volume 1)**);
  - Baseline aerial survey data presented in the Bowdun offshore wind farm (OWF) EIA Report, which covered the period from March 2022 to February 2023 (Thistle Wind Partners (TWP), 2026);
  - Baseline aerial survey data presented in the Ossian Array EIA Report, which covered the period from March 2021 to February 2023 (RPS, 2024);
  - Scottish and Southern Electricity (SSE) Regional Aerial Survey data, which covered the period from April 2022 to August 2023 (HiDef, 2023);
  - Black-legged Kittiwake (hereafter kittiwake), guillemot, razorbill and puffin tracking results from work undertaken in relation to the OWFs in the Forth/Tay region (Bogdanova et.al., 2025);
  - Kittiwake, guillemot and razorbill tracking results presented in the reports to Ørsted and the North East and East Ornithology Group (NEEOG) (Johnston et al., 2024, Bennett et al., 2025);
  - JNCC Report: An assessment of numbers of wintering divers, seaduck and grebes in inshore marine areas of Scotland (Lawson et al., 2018); and
  - The locations and qualifying features of terrestrial and marine SPAs with the potential for connectivity, as well as the potential for an effect pathway, with the Bellrock OfTDA.
844. The locations of the Bellrock OfTDA Scoping Boundary, the Bellrock WFDA aerial survey area, Ossian Array aerial survey area, Bowdun Array aerial survey area, and SSE Regional Aerial Survey area are shown in **Figure 9.1 (Appendix A (Volume 1))**. The baseline information presented in this Chapter should be viewed as a broad-level summary of the survey findings and nearby SPAs, which aids the process of identifying the likely key issues for the Bellrock Offshore Transmission Infrastructure in relation to intertidal and offshore ornithology.
845. The Bellrock OfTDA Scoping Boundary extends along the east coast of the Scottish mainland for approximately 8 km north of the Fowlsheugh SPA, and eastwards into the central North Sea for around 155 km. The North Sea is important for seabirds throughout the year, providing foraging grounds for seabirds breeding in adjoining coastal areas during the breeding season, as well as from colonies further afield in the non-breeding season and for the sub-adult birds throughout the

year. Overall, at least 20 seabird species breed on coastal areas around the North Sea (International Council for the Exploration of the Sea, 2021). Coastal areas of the Firth of Forth and Firth of Tay also form an integral unit that is important for populations of wintering and passage wildfowl (BirdLife International, 2024a; 2024b). This is reflected by multiple terrestrial and marine SPA designations for which such populations are qualifying features, the largest of which is the Outer Firth of Forth and St Andrews Bay Complex SPA (NatureScot, 2020b). This SPA is also designated on the basis of providing important supporting habitat for breeding and non-breeding seabird populations.

846. Further SPAs (including those designated for their breeding seabird colonies) are also found along the coastlines of eastern Scotland and Northeast England including Forth Islands SPA (Scottish Natural Heritage (SNH), 2018), Fowlsheugh SPA (SNH, 2009a) and Northumberland Marine SPA (Natural England, 2017a) which support a number of internationally important breeding and non-breeding sites for seabird species, some of which are likely to occur within the Bellrock OfTDA. SPAs are shown in **Figure 9.2 (Appendix A (Volume 1))**.

### 9.4.1 Study Area

847. The intertidal and offshore ornithology study area comprises the Bellrock OfTDA Scoping Boundary, and (for the purpose of determining connectivity with seabird colonies) the area beyond this within which breeding and non-breeding seabirds could be impacted by the Bellrock Offshore Transmission Infrastructure. Given the extent of the area encompassed by the Bellrock OfTDA Scoping Boundary, it is likely that it will include an appropriate buffer area within which the construction, O&M, and decommissioning impacts associated with the Bellrock Offshore Transmission Infrastructure on the key bird species within the Bellrock OfTDA are expected to occur.
848. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA upon which the Marine Licence application will be based. At that stage, the appropriateness of the buffer areas will be reviewed based on the Bellrock OfTDA and the Offshore Transmission Infrastructure, and the species likely to be present within the relevant areas. The intertidal and offshore ornithology study area will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4 in Chapter 1: Introduction**). Consultation on the proposed buffer areas will then be undertaken with NatureScot.
849. During the breeding season, many seabird species have large foraging ranges which extend several hundred kilometres from their colonies, while outside the breeding season they are not constrained by colony location and may range widely within UK waters and beyond (e.g. Woodward et al., 2019, Furness, 2015). Therefore, some seabird colonies may have connectivity with the Bellrock OfTDA despite being located a significant distance away, meaning that the area within which breeding and non-breeding seabirds could potentially be affected by the infrastructure or associated activities of the Bellrock OfTDA can be extensive.
850. For the purposes of the Bellrock OfTDA EIA it is proposed, in most instances, to define the regional populations of breeding seabird species that may be affected by the Offshore Transmission Infrastructure on the basis of the colonies that occur within the mean maximum + 1 Standard Deviation (SD) of the breeding season foraging range (as defined in Woodward et al., 2019) from the Bellrock OfTDA Scoping Boundary. Exceptions to this will occur for guillemot, razorbill and

gannet due to the specific NatureScot guidance for these species (NatureScot, 2023b), and for the few species lacking adequate data for estimation of the mean maximum + 1SD foraging range (for which alternative foraging range measures must be used). This follows the approach used to define regional seabird populations in the Bellrock WFDA assessment (Chapter 10: Offshore Ornithology of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026)).

851. For the purposes of HRA, screening of European sites with qualifying seabird features (SPAs and Ramsar sites (under Scottish Government Policy (Scottish Government, 2025)) for potential connectivity to the Bellrock OfTDA has been undertaken and is detailed within the **Bellrock OfTDA HRA Screening Report (Volume 2)**. During the breeding season, connectivity with SPA seabird colonies has been determined using breeding season foraging ranges, consistent with the approach used to define regional seabird populations and in accordance with NatureScot guidance (NatureScot, 2023c).
852. During the non-breeding season, seabirds are not constrained by colony location and may range widely within UK and international waters depending on species ecology. Connectivity with SPA seabird colonies has therefore been determined using the BDMPS approach (Furness, 2015), in accordance with NatureScot guidance (NatureScot, 2023d). Exceptions to this approach apply for guillemot and herring gull, which are considered to remain broadly associated with breeding colony locations during the non-breeding season (Wernham et al., 2002; Buckingham et al., 2022), and therefore the offshore regional study areas for these species are considered to be the same as for the breeding season (Woodward et al., 2019).
853. In addition, non-breeding season assessment for puffin will be assessed only within the EIA and the consideration of effects on the regional population, as opposed to any specific SPA colony populations (therefore not required within the HRA). This follows NatureScot advice to the Bellrock Project in respect of the Bellrock WFDA<sup>36</sup> (Chapter 10: Offshore Ornithology of the **Bellrock WFDA EIA Report** and Part 3 – SPA and Ramsar Assessments: Ornithology of the **Bellrock WFDA Report to Inform Appropriate Assessment** (RIAA) (Bellrock Offshore Wind Farm Limited, 2026)) (as well as to previous OWF projects, e.g. Berwick Bank (NatureScot, 2021)).

## 9.4.2 Data and Information Sources

854. **Table 9.3** sets out the key data and information sources which have been referred to in the preparation of this Chapter. These and others will be considered within the Bellrock OfTDA EIA Report where appropriate.

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<sup>36</sup> Advice received from NatureScot via email 19<sup>th</sup> July 2024 in respect of the Bellrock WFDA: “We can now confirm that a non-breeding season assessment should be undertaken quantitatively through the EIA assessment, i.e. using an annual mortality (breeding season plus non-breeding season) with a regional population. Given the current evidence available, we advise that this would not be required to be undertaken quantitatively within the HRA. However, we recommend that this is addressed qualitatively within the conclusions for puffin.”

**Table 9.3: Summary of Key Data and Information Sources for the Intertidal and Offshore Ornithology Assessment**

| Dataset                                                                                                                                                                                                                                                                                                                      | Year(s)     | Description                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seabirds count: a census of breeding seabirds in Britain and Ireland (2015-2021), Burnell et al. (2023)                                                                                                                                                                                                                      | 2015 - 2021 | The results from Seabirds Count, the fourth census of Britain and Ireland's internationally important populations of breeding seabirds. Over 10,000 sites and 25 species were surveyed between 2015 and 2021 to provide a comprehensive update on the state of these populations. |
| <b>Bellrock WFDA EIA Report</b> , Chapter 10: Offshore Ornithology, Part 3 of the <b>Bellrock WFDA RIAA</b> , and associated ornithology appendices (Bellrock Offshore Wind Farm Limited, 2026)                                                                                                                              | 2026        | Ornithology data and assessments for the Bellrock WFDA Section 36 Consent and Marine Licence Application.                                                                                                                                                                         |
| British Trust for Ornithology (BTO) Seabird Monitoring Programme ( <a href="https://app.bto.org/seabirds/public/index.jsp">https://app.bto.org/seabirds/public/index.jsp</a> )                                                                                                                                               | 2026        | Breeding seabird colony numbers and breeding success rates.                                                                                                                                                                                                                       |
| Combining habitat modelling and hotspot analysis to reveal the location of high-density seabird areas across the UK, Cleasby et al. (2018)                                                                                                                                                                                   | 2018        | Seabird tracking studies to map UK-wide distribution for kittiwake, guillemot, razorbill and shag <i>Gulosus aristotelis</i> and identify important areas of high seabird density at sea.                                                                                         |
| Identifying important at-sea areas for seabirds using species distribution models and hotspot mapping, Cleasby et al. (2020)                                                                                                                                                                                                 | 2020        | Breeding season species distribution models for kittiwake, guillemot, razorbill and shag to inform marine protected areas.                                                                                                                                                        |
| MAGIC website ( <a href="https://magic.defra.gov.uk/magicmap">https://magic.defra.gov.uk/magicmap</a> ), Department for Environmental Food and Rural Affairs (Defra)                                                                                                                                                         | 2024        | Locations of statutory designated sites (SPAs, SSSIs, Ramsar sites).                                                                                                                                                                                                              |
| Furness (2015) Non-breeding season populations of seabirds in UK waters: Population sizes for BDMPS                                                                                                                                                                                                                          | 2015        | Key information source for biogeographic population estimates for non-breeding seabirds in UK waters.                                                                                                                                                                             |
| Digital video aerial surveys of seabirds and marine megafauna at Bellrock: Two-Year Annual Report (March 2022 to February 2024), HiDef (2024)<br><br>Bellrock WFDA Offshore Ornithology Digital Aerial Survey Baseline Report (Appendix 10.1 to <b>Bellrock WFDA EIA Report</b> (Bellrock Offshore Wind Farm Limited, 2026)) | 2024        | Baseline aerial survey data for the Bellrock WFDA, which overlaps with the Bellrock OfTDA in the south.                                                                                                                                                                           |

| Dataset                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Year(s)    | Description                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bellrock Offshore Wind Farm: Cowie Landfall Site Wintering Bird Survey 2025/2026 Technical Report ( <b>Appendix E (Volume 1)</b> )                                                                                                                                                                                                                                                                                                                                                                                     | 2026       | Intertidal and nearshore data collected over the winter period for the purpose of the Bellrock OnTDA Scoping Report. Although currently in the process of reviewing, it should be available in time to inform the Bellrock OfTDA EIA and HRA reporting. |
| Digital video aerial surveys of seabirds and marine megafauna at SSE Regional Aerial Survey: 18-month Report April 2022 to August 2023, HiDef (2023)                                                                                                                                                                                                                                                                                                                                                                   | 2023       | Baseline aerial survey data for the SSE regional project, which encompasses a significant proportion of the Bellrock OfTDA.                                                                                                                             |
| Digital Aerial Survey Report at Ossian Array, HiDef (2024)                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2024       | Baseline aerial survey data presented in the Ossian Array EIA, which covered the period from March 2021 to February 2023.                                                                                                                               |
| Flight heights, behaviours, distribution, and overlap with offshore wind farms of Kittiwakes breeding at Buchan Ness to Collieston SPA in 2024. Interim second year report to Ørsted and NEEOG, Johnston et al. (2024) and Bennett et al. (2025)                                                                                                                                                                                                                                                                       | 2024, 2025 | Kittiwake, guillemot and razorbill tracking results presented in the reports to Ørsted and NEEOG.                                                                                                                                                       |
| Seabird Global Positioning System tracking on the Isle of May, Fowlsheugh and St Abb's Head in 2021 in relation to offshore wind farms in the Forth/Tay region, Bogdanova et al. (2025)                                                                                                                                                                                                                                                                                                                                | 2025       | Kittiwake, guillemot, razorbill and puffin tracking results from work undertaken in relation to the offshore wind farms in the Forth/Tay region.                                                                                                        |
| Digital video aerial surveys of seabirds and marine megafauna for Morven Array: EIA Report Volume 3, Annex 11.1: Offshore Ornithology Baseline Characterisation Report (2026), RPS (2023)                                                                                                                                                                                                                                                                                                                              | 2023       | Baseline aerial survey, intertidal and nearshore data collected for the Morven Array.                                                                                                                                                                   |
| Digital video aerial surveys of seabirds and marine megafauna, intertidal and nearshore surveys for the Bowdun Array: <ul style="list-style-type: none"> <li>▪ Bowdun Offshore Wind Farm, Offshore EIA Report, Volume 2, Chapter 11: Offshore Ornithology, (TWP, 2026);</li> <li>▪ Technical Appendix 11.1 Offshore Ornithology Baseline Characterisation Report Annex A-E, TWP (2026); and</li> <li>▪ Technical Appendix 11.2: Nearshore, Intertidal and Offshore Ornithology Baseline Report, TWP (2026).</li> </ul> | 2023       | Baseline aerial surveys, intertidal and nearshore data collected for the Bowdun Array.                                                                                                                                                                  |

| Dataset                                                                                                                                                                                            | Year(s) | Description                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| An assessment of numbers of wintering divers, seaducks and grebes in inshore marine areas of Scotland, Lawson et al. (2018)                                                                        | 2015    | Aerial surveys of inshore waters overlapping with Buchan Ness to Collieston Coast SPA, and Ythan Estuary, Sands of Forvie and Meikle Loch SPA.        |
| Wetland Bird Survey (WeBS), BTO                                                                                                                                                                    | 2020-25 | Annual peak counts and 5-year average counts at St Cyrus to Stonehaven WeBS site.                                                                     |
| Review of Seabird Demographic Rates and Density Dependence, Horswill and Robinson (2015)                                                                                                           | 2015    | Provides survival and productivity rates for assessment of impacts on seabird populations.                                                            |
| Vulnerability of northern gannets to offshore wind farms; seasonal and sex-specific collision risk and demographic consequences. Marine Environmental Research. 162, Lane et al. (2020).           | 2020    | Tracking study on gannets from Bass Rock to quantify seasonal and sex-specific collision risk.                                                        |
| NatureScot SiteLink ( <a href="https://sitelink.nature.scot/home">https://sitelink.nature.scot/home</a> )                                                                                          | 2024    | Information on SPAs and other designated sites in Scotland.                                                                                           |
| Guidance Note 9: Guidance to support Offshore Wind Applications: Seasonal periods for Birds in the Scottish Marine Environment, NatureScot (2020a)                                                 | 2020    | Recommended seasonal periods when waterfowl and seabird species should be considered in relation to offshore wind developments.                       |
| Guidance Note 1: Guidance to support Offshore Wind Applications: Marine Ornithology – Overview, NatureScot (2025)                                                                                  | 2025    | Overview of NatureScot guidance to inform assessment of offshore wind development proposals on marine ornithology in Scotland.                        |
| Guidance Note 2: Advice for Marine Ornithology Baseline Characterisation Surveys and Reporting, NatureScot (2023a)                                                                                 | 2023    | Guidance on expectations for the collection, analysis and presentation of data, and baseline reporting.                                               |
| Guidance Note 3: Marine Birds – Identifying theoretical connectivity with breeding site Special Protection Areas using breeding season foraging ranges NatureScot (2023b)                          | 2023    | Recommended matrices and reference sources for determining theoretical connectivity with breeding seabird European designated sites.                  |
| Guidance Note 4: Ornithology – Determining Connectivity of Marine Birds with Marine Special Protection Areas and Breeding Seabirds from Colony SPAs in the Non-Breeding Season, NatureScot (2023c) | 2023    | Guidance for determining theoretical connectivity with European designated sites during the non-breeding season for wintering waterfowl and seabirds. |
| Guidance Note 5: Recommendations for marine bird population estimates, NatureScot (2023d)                                                                                                          | 2023    | Advice for estimating marine bird populations at breeding colonies and marine SPAs.                                                                   |



| Dataset                                                                                                                                                     | Year(s) | Description                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------|
| Guidance Note 6: Guidance to support Offshore Wind Applications – Marine Ornithology Impact Pathways for Offshore Wind Developments, NatureScot (2023e)     | 2023    | Key impact pathways that should be considered as part of the EIA and HRA of offshore wind development proposals. |
| Guidance Note 8: Marine Ornithology Advice for assessing the distributional responses, displacement and barrier effects of Marine birds, NatureScot (2023f) | 2023    | Guidance on assessing displacement and barrier effects on seabirds, recommended species and approaches.          |
| Ossian Array EIA Report Appendix 11.1: Offshore Ornithology Baseline Report, RPS (2024)                                                                     | 2024    | Baseline aerial survey data for the Ossian Array, which borders the Bellrock OfTDA to the south                  |
| Distribution maps of cetacean and seabird populations in the North-East Atlantic, Waggitt et al. (2019)                                                     | 2019    | Abundance and density estimates of marine ornithological features in the inshore part of the Bellrock OfTDA.     |
| Space Partitioning Without Territoriality in Gannets, Wakefield et al. (2013)                                                                               | 2013    | Satellite-tracking study of gannets showing that colonies forage in largely mutually exclusive areas.            |
| Desk-based revision of seabird foraging ranges used for HRA screening, Woodward et al. (2019)                                                               | 2019    | Key reference for representative foraging range statistics for seabirds around breeding colonies.                |

855. Amongst the data and information sources listed in **Table 9.3**, the baseline DAS data pertaining to the Ossian wind farm and the Bellrock WFDA submissions, together with the DAS data from the SSE Regional Aerial Survey will contribute to the characterisation of the baseline for the area encompassed by the Bellrock OfTDA Scoping Boundary. These data relate to the eastern part of the area encompassed by the Bellrock OfTDA Scoping Boundary and so are likely to be representative of those parts that are furthest offshore (**Figure 9.1 (Appendix A (Volume 1))**). Other DAS data that are likely to be used in characterising the baseline for the area encompassed by the OfTDA Scoping Boundary include those from the Bowdun Array and Morven OWF projects, with these baseline DAS data tending to overlap with more western parts of the Scoping Boundary that are closer to the coast (**Figure 9.1 (Appendix A (Volume 1))**). At the time of writing, complete survey reports are available for the Bowdun Array and Morven Array.
856. In addition to the above, DAS data on seabird densities and abundance from the Seagreen (or other Forth and Tay) wind farms may also be relevant to informing the baseline characteristics of the area encompassed by the Bellrock OfTDA Scoping Boundary but at the time of writing it is not known if recent data from the post-construction periods of these projects are publicly available. Although the Kincardine wind farm is outside the Bellrock OfTDA Scoping Boundary but

surrounded by the Bellrock OfTDA Scoping Boundary, it is not proposed to use the baseline survey data from this project due to its age (these being from 2013 – 2014 (HiDef, 2016)).

857. Data sources that will be used to inform the bird species assemblages, densities and distribution that are likely to occur within the nearshore parts of the area encompassed by the Bellrock OfTDA Scoping Boundary include Cowie Landfall Site Wintering Bird Survey for Bellrock OnTDA (**Appendix E (Volume 1)**) the Bowdun Array Nearshore, Intertidal and Offshore Ornithology Baseline Report (TWP, 2026), Lawson et al. (2018) report, and WeBS counts.

### 9.4.3 Breeding Season

858. Recent data on the densities and distribution of seabirds within, and in close proximity to the Bellrock OfTDA Scoping Boundary include those collected from the Bellrock WFDA offshore aerial survey area, Ossian Array aerial survey area and SSE Regional Aerial Survey area (**Table 9.3**). These provide data that relate most closely to the eastern half of the Bellrock OfTDA Scoping Boundary. Above datasets are not representative of the full extent of the Bellrock OfTDA Scoping Boundary area (given the likelihood that densities, distributions and species assemblages are likely to be affected by proximity to the coast), therefore aerial survey data collected for the Bowdun OWF are considered for western parts of the offshore and inshore parts of the Bellrock OfTDA Scoping Boundary. On the basis of these data, the six most abundant seabird species likely to occur in the more offshore waters associated with the Bellrock OfTDA during their respective breeding periods (as defined by NatureScot, 2020a) are listed in **Table 9.4** in order of their peak population estimates. The peak breeding season population estimates, with the associated survey months, for the Bellrock WFDA, Ossian Array and SSE Regional Aerial Survey areas (refer to **Figure 9.1 (Appendix A (Volume 1))**) are provided for comparison.

**Table 9.4: Most Abundant Seabird Species Likely to be Present in the Bellrock OfTDA During the Breeding Season**

| Species                                                              | Bellrock WFDA Peak Population Estimate (Design-based) | Ossian Array Peak Population Estimate (Design-based) | Regional Peak Population Estimate (Design-based) | Bowdun Array Peak Population Estimate (Design-based) <sup>2</sup> |
|----------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------|
| Guillemot <sup>1</sup>                                               | 22,088 (July 2022)                                    | 55,098 (July 2022)                                   | 749,922 (July 2022)                              | 96,467 (July 2022)<br>9,798 (July 2023)                           |
| Razorbill                                                            | 3,497 (July 2022)                                     | 4,636 (July 2022)                                    | 78,129 (July 2022)                               | 9,385 (July 2022)<br>7,589 (July 2023)                            |
| Kittiwake                                                            | 1,096 (June 2022)                                     | 4,284 (May 2021)                                     | 32,265 (July 2022)                               | 27,034 (July 2022)<br>8,198 (July 2023)                           |
| Northern fulmar<br><i>Fulmarus glacialis</i><br>(hereafter 'fulmar') | 263 (June 2022)                                       | 3,721 (July 2022)                                    | 25,574 (September 2022)                          | 4,146 (July 2022)<br>702 (July 2023)                              |
| Atlantic puffin<br>(hereafter 'puffin')                              | 785 (July 2022)                                       | 3,357 (August 2022)                                  | 25,696 (July 2022)                               | 554 (July 2022)<br>761 (July 2023)                                |



| Species                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Bellrock WFDA Peak Population Estimate (Design-based) | Ossian Array Peak Population Estimate (Design-based) | Regional Peak Population Estimate (Design-based) | Bowdun Array Peak Population Estimate (Design-based) <sup>2</sup> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------|
| Gannet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 396 (April 2022)                                      | 2,872 (July 2021)                                    | 17,475 (May 2022)                                | 1,786 (July 2022)<br>1,888 (July 2023)                            |
| <p>Notes:</p> <p><sup>1</sup> For consistency across the three different survey areas, the guillemot breeding season as defined in NatureScot guidance (NatureScot, 2020a) is applied (i.e. April – mid-August), noting that for the Ossian project NatureScot agreed that the August 2022 count should be regarded as wholly in the non-breeding season (see <b>Table 9.5</b>) (RPS, 2024). NatureScot also advised that for the Bellrock WFDA, July to September should be regarded as a separate post-breeding dispersal period (<b>Bellrock WFDA EIA Report</b>, Chapter 10: Offshore Ornithology (Bellrock Offshore Wind Farm Limited, 2026)) but this is not accounted for within the current comparison.</p> <p><sup>2</sup> Design-based Abundances in the Extended DAS Area - extended to the Aberdeenshire coastline, available only for the breeding period: April-August.</p> |                                                       |                                                      |                                                  |                                                                   |

859. Guillemot was the most abundant species recorded in the Bellrock WFDA offshore aerial survey area, Ossian Array aerial survey area, Bowdun Array extended aerial survey area, and SSE Regional Aerial Survey area during the breeding season. Within these aerial survey areas, guillemot was recorded widely with higher densities present in the west of the Bellrock WFDA offshore aerial survey area in May, July and August 2022, in the northwest of the Ossian Array aerial survey area in March/April 2021 and May 2022, in the Bowdun Array in May 2022 and 2023, April 2023 and August and July 2022, and north of the SSE Regional Aerial Survey area in August and September 2022. There was a marked peak in guillemot abundance in July 2022 in all aerial survey areas, which is likely to be coincident with post-breeding dispersal (although the breeding season for this species can extend to mid-August (NatureScot, 2020a)<sup>37</sup>. The high abundances during July, relative to other months in the breeding season, may indicate that the Bellrock WFDA offshore aerial survey area, Ossian Array aerial survey area, Bowdun Array extended aerial survey area, and SSE Regional Aerial Survey area are used as moult sites during post-breeding dispersal when birds are flightless. This is also likely to be true for a large part of the area encompassed by the Bellrock OFTDA Scoping Boundary, where this species is also expected to be abundant.
860. Razorbill occurred less frequently and at lower abundance than guillemot in all aerial survey areas during the breeding season and was not present in all survey months, with the exception of Bowdun Array aerial surveys. The peak abundances occurred in July 2022, with higher densities recorded in the west of the Bellrock WFDA offshore aerial survey area during this month and widely across the Ossian Array and SSE Regional Aerial Survey areas. The peak abundances across the extended aerial survey area of Bowdun Array were recorded in August 2022. As for guillemot, this may indicate usage during post-breeding dispersal when birds moult and are flightless. Razorbill was absent from the Bellrock WFDA offshore aerial survey area during the early breeding season (April and May) in both survey years but occurred within the Ossian Array, Bowdun Array, and SSE

<sup>37</sup> For the purposes of the Bellrock WFDA assessment, NatureScot advised that July to September should be treated as a defined post-breeding dispersal period, contrary to the general advice on guillemot seasonal periods (NatureScot, 2020a, Bellrock Offshore Wind Farm Limited, 2026).

Regional Aerial Survey areas particularly in the northwest; this is likely to reflect proximity to breeding colonies. The distribution of razorbill within the area encompassed by the Bellrock OfTDA Scoping Boundary may therefore be skewed towards more central or western parts during the breeding season.

861. Puffin was relatively widely distributed in all months that it was recorded in the Bellrock WFDA offshore aerial survey area and the Ossian Array aerial survey area, although when numbers peaked in the SSE Regional Aerial Survey area and Bowdun Array in August 2022 there was a higher concentration of birds in the north. This species has a greater foraging range from breeding colonies than either guillemot or razorbill (Woodward et al., 2019; NatureScot, 2023c) and therefore there is a greater likelihood that this species may use the four aerial survey areas for foraging during the breeding season. On this basis it can be expected that puffin will occur widely and forage within the area encompassed by the Bellrock OfTDA Scoping Boundary, however it is noted that the density layers for puffin from Waggitt et al. (2019) do not show this to be an area of high density.
862. Kittiwake generally occurred in greater abundance in the three aerial survey areas during the breeding season compared with the non-breeding season, with peak estimates occurring between May and August. Typically, kittiwake will be strongly associated with colonies between May and June (Coulson, 2011). Therefore, the May and June peaks could be due to utilisation of the aerial survey areas for foraging by adult birds during the chick-rearing phase, or conceivably (particularly in July) it could be a consequence of early colony desertion due to high breeding failure rates, possibly caused by HPAI, the main outbreak of which within UK seabird colonies began in summer 2022 so coinciding with the timing of these surveys (Tremlett et al., 2024). Overall, kittiwake was more abundant in the Ossian Array and Bowdun Array aerial survey areas and the west of the SSE Regional Aerial Survey area which likely reflect their greater use of waters in closer proximity of coastal breeding colonies. On this basis, kittiwake is considered likely to occur in higher densities in the more central or western parts of the area encompassed by the Bellrock OfTDA Scoping Boundary during the breeding season.
863. Gannet was generally widely distributed in most months, and any hotspots of activity appeared to be transient. Tracking data indicate that the aerial survey areas and the area encompassed by the Bellrock OfTDA Scoping Boundary fall within the main breeding season foraging range of gannets from the Bass Rock colony, which is part of the Forth Islands SPA (Lane et al., 2020). The foraging ranges used by gannets breeding at different colonies are, to a large extent, mutually exclusive (Wakefield et al., 2013), suggesting that the vast majority of breeding adults recorded within the aerial survey areas during the breeding season will be from the Bass Rock. Gannet is expected to have a broad distribution within the area encompassed by the Bellrock OfTDA Scoping Boundary, but with a possible western bias reflecting closer proximity to the Bass Rock colony.
864. Fulmar has a protracted breeding season and was present throughout this period in the four aerial survey areas. Records of this species were widely distributed, with any hotspots of activity appearing to be transient, although there were occasional concentrations in the north and west of the SSE Regional Aerial Survey area (e.g. September 2022).
865. The overall breeding season densities and abundance of the auk species (puffin, razorbill and guillemot), kittiwake, gannet and fulmar in the Bellrock WFDA offshore aerial survey area; Ossian Array aerial survey area; Bowdun Array aerial survey area; and SSE Regional Aerial Survey area, and expected distribution of these species in the area encompassed by the Bellrock OfTDA

Scoping Boundary, is consistent with the presence of the internationally important breeding seabird colonies on the coast of eastern Scotland which support these species, including the Forth Islands SPA, Fowlsheugh SPA, Buchan Ness to Collieston Coast SPA (SNH, 2009b), Troup, Pennan and Lion's Heads SPA (SNH, 2009c) and East Caithness Cliffs SPA (SNH, 2017) (**Figure 9.2 (Appendix A (Volume 1))**).

866. Other seabird species recorded less frequently within the four aerial survey areas considered here during their respective breeding seasons (as defined by NatureScot (2020a) were Arctic skua *Stercoarius parasiticus*, Arctic tern *Sterna paradisaea*, common gull *Larus canus*, common tern *Sterna hirundo*, European storm-petrel *Hydrobates pelagicus*, great black-backed gull *Larus marinus*, great skua *Stercorarius skua*, herring gull, Leach's storm-petrel *Hydrobates leucorhous*, lesser black-backed gull *Larus fuscus*, Manx shearwater *Puffinus puffinus*, red-throated diver *Gavia stellata*, and Sandwich tern *Sterna sandvicensis*. These species are likely to occur within the area encompassed by the Bellrock OfTDA Scoping Boundary but are expected to be present in significantly lower numbers than the six species described above and listed in **Table 9.4**.
867. The densities of herring gulls reported in Bowdun Array aerial survey area were higher than in the remaining three aerial survey areas mostly due to the fact that the extended survey area of Bowdun Array covered the more inshore areas of the Bellrock OfTDA Scoping Boundary. Red-throated diver was recorded in the SSE Regional Aerial Survey area (four observations during the breeding season) and the Bellrock WFDA offshore aerial survey area (one observation during the breeding season) however these areas lie well beyond the foraging range for this species from any breeding sites, whilst it is likely that the more inshore areas within the Bellrock OfTDA Scoping Boundary will provide more suitable habitat for this species. No other diver species were recorded in any of the aerial survey areas during the breeding season but, again, their occurrence is more likely within inshore areas of the Bellrock OfTDA Scoping Boundary which do not overlap with any of the three survey areas.

#### 9.4.4 Non-breeding Season

868. Based on data collected from the Bellrock WFDA offshore aerial survey area, Ossian Array aerial survey area and SSE Regional Aerial Survey area, the six most abundant seabird species likely to occur in the more offshore waters encompassed by the Bellrock OfTDA Scoping Boundary during the non-breeding periods (as defined by NatureScot, 2020a) are listed in **Table 9.5** in order of their peak population estimates. However, as acknowledged above in relation to the occurrence and abundance of species during the breeding season, these survey data cannot necessarily be assumed to be representative of the full extent of this area (given that they overlap only with the more eastern parts of the area encompassed by the Bellrock OfTDA Scoping Boundary). The non-breeding season peak population estimates, with the associated survey months, for the Bellrock WFDA, Ossian Array aerial survey area, Bowdun Array aerial survey area, and SSE Regional Aerial Survey areas are provided for comparison.

**Table 9.5: Most Abundant Seabird Species Likely to be Present in the Bellrock OfTDA During the Non-breeding Season(s)**

| Species   | Bellrock WFDA Peak Population Estimate (Design-based) | Ossian Array Peak Population Estimate (Design-based) | Regional Peak Population Estimate (Design-based) | Bowdun Array Peak Population Estimate (Design-based) |
|-----------|-------------------------------------------------------|------------------------------------------------------|--------------------------------------------------|------------------------------------------------------|
| Guillemot | 3,558 (November 2022)                                 | 101,300 (August 2022)                                | 59,458 (September 2022)                          | 109,522 (August 2022)                                |
| Fulmar    | 4,214 (October 2023)                                  | 1,198 (December 2022)                                | 24,340 (November 2022)                           | 2,131 (November 2022)                                |
| Kittiwake | 241 (March 2022)                                      | 1,633 (November 2022)                                | 3,421 (September 2022)                           | 2,302 (October 2022)                                 |
| Puffin    | 1,031 (March 2022)                                    | 1,036 (March 2021)                                   | 9,952 (September 2022)                           | 3,901 (September 2022)                               |
| Gannet    | 541 (October 2023)                                    | 928 (October 2021)                                   | 2,916 (October 2022)                             | 2,431 (September 2022)                               |
| Razorbill | 172 (March 2022)                                      | 437 (March 2021)                                     | 2,058 (September 2022)                           | 3,470 (March 2023)                                   |

869. As for the breeding season, guillemot was the most abundant species in all four aerial survey areas during the non-breeding season and was present in every month. A peak population of 109,522 was estimated for the Bowdun Array aerial survey area in August 2022; following agreement with NatureScot, this count was deemed to be considered as fully within the non-breeding season (RPS 2024), noting that the NatureScot guidance defines the guillemot non-breeding period as extending from mid-August to the end of March (NatureScot, 2020a). Razorbill and puffin estimates were variable although for both species the populations peaked in March and September (just before and after the breeding season). All three auk species are expected to occur widely in the area encompassed by the Bellrock OfTDA Scoping Boundary in their non-breeding seasons, with numbers potentially peaking immediately prior to and following the breeding season.
870. Gannet and kittiwake were recorded regularly in all four aerial survey areas during their respective non-breeding seasons, although less frequently than during the breeding season and they were absent in some months from the Bellrock WFDA and Ossian Array aerial survey areas. Kittiwake numbers peaked in March in the Ossian Array aerial survey area, in October in the Bowdun Array aerial survey area, and in September in the SSE Regional Aerial Survey area, which likely coincides with spring and autumn passage movements. Fulmar was present in all non-breeding season surveys in all aerial survey areas, with marked peaks in October 2023 in the Bellrock WFDA aerial survey area and in November 2022 in the Bowdun Array aerial survey area, and in the SSE Regional Aerial Survey area during the post-breeding migration period. These three species are also expected to occur widely and regularly in the area encompassed by the Bellrock OfTDA Scoping Boundary in their respective non-breeding seasons.
871. Other seabird species recorded less frequently during their respective non-breeding seasons (as defined by NatureScot (2020a) and Kober et al. (2010)) were common gull, great black-backed

gull, herring gull, little auk *Alle alle* and red-throated diver. Little gull *Hydrocoloeus minutus* (which is a very rare and sporadic breeder in the UK) was also recorded in the Ossian Array aerial survey area in June 2021, and in the Bowdun Array aerial survey area in October 2022 and 2023.

872. No grebes or sea ducks were recorded during their non-breeding seasons in any of the four aerial survey areas, other than one observation of common scoter *Melanitta nigra* in the SSE Regional Aerial Survey area in April 2023 and small numbers of common eider *Somateria mollissima* in the Bowdun Array aerial survey area recorded in April, which is to be expected given the distance of these survey areas from the coastline. However, WeBS counts from inshore waters overlapping with the inshore part of the Bellrock OfTDA Scoping Boundary indicate the presence of seaducks, notably common eider and common scoter. Similarly, numbers of red-throated diver in the non-breeding season were low in all three aerial survey areas, with a single individual recorded in the Bellrock WFDA offshore aerial survey area, three records in the SSE Regional Aerial Survey area and an estimate of 10 individuals April 2022 in the Ossian Array aerial survey area. Low abundance of this species during the non-breeding season may also be typical of the inshore waters encompassed by the Bellrock OfTDA Scoping Boundary, with the WeBS site of St Cyrus to Stonehaven reporting a five-year average (2020–2025) of two red-throated divers (WeBS, 2026). A range of waterbird and seabird species winter in internationally important numbers along parts of the east coast of Scotland to the north and to the south of the area encompassed by the Bellrock OfTDA Scoping Boundary, with a number of SPAs being designated for such species in these areas (e.g. the three species: common eider, common scoter, and red-throated diver are qualifying features of the Outer Firth of Forth and St Andrews Bay Complex SPA.

#### 9.4.5 European Designated Sites

873. Screening of European designated sites with qualifying bird species (SPAs, proposed SPAs and Ramsar sites) for potential connectivity to the Bellrock OfTDA has been undertaken and is detailed within the **Bellrock OfTDA HRA Screening Report (Volume 2)**. There is potential for connectivity with a wide range of the breeding seabird colonies in the UK, particularly those on the east coast of Scotland, and it is recognised that there will be many colonies within European designated sites that could potentially be impacted by both project-alone impacts and in-combination impacts with other developments. The **Bellrock OfTDA HRA Screening Report (Volume 2)** provides full details of the relevant designated sites and features which are considered to have connectivity with the Bellrock OfTDA and identifies the potential effect pathways, so enabling the determination of sites and features for which a Likely Significant Effect cannot be excluded. The subsequent HRA will undertake the assessment for those sites and features for which a Likely Significant Effect cannot be excluded.

#### 9.4.6 Highly Pathogenic Avian Influenza

874. Recent years have witnessed a significant outbreak of HPAI in the UK and seabirds have been particularly badly affected, especially at breeding colonies in the north of the country. Thousands of seabird mortalities attributed to HPAI were reported across the UK in 2022, with minimum losses of almost 20,000 in Scotland alone including large numbers of gannets and great skuas. The outbreak continued in 2023 and the Royal Society for the Protection of Birds HPAI Seabird Surveys Project identified multiple species showing a decrease of >10% in overall counts across UK sites including great skua (-76% decrease), gannet (-25%), common tern (-42%) and Sandwich tern (-35%) (Tremlett et al, 2024). Gulls and auks have also been affected, and in the two weeks following

the first cases in summer 2023, NatureScot recorded 1,443 dead guillemots, 1,570 dead kittiwakes and 236 dead herring gulls, all suspected to have died from HPAI (BTO, 2023). Gannet populations in North Sea colonies in the UK were severely reduced by mortality associated with HPAI in 2022; UK-wide, the population is estimated to have declined by 16% (Tremlett et al. 2024). Much of this decline occurred on the Bass Rock, where numbers fell by more than 30% (Burton et al. 2025). Gannet populations show some evidence that they are now recovering from their sharp 2022 decline, but this recovery is likely to take many years (Burton et al. 2025).

875. Consideration will be given to the implications of this mortality (and any subsequent population effects) in the assessment undertaken for the Bellrock OfTDA.

## 9.5 Potential Impacts

### 9.5.1 Construction Phase

876. Site preparation works and construction works associated with the Bellrock Offshore Transmission Infrastructure have the potential to give rise to a range of impacts relevant to intertidal and offshore ornithology:

- Disturbance and displacement from vessel activity;
- Disturbance and attraction associated with artificial lighting;
- Changes in prey availability;
- Disturbance and displacement from unexploded ordnance (UXO) clearance activities; and
- Effects of accidental pollution incidents on seabirds.

### 9.5.2 Operation and Maintenance Phase

877. O&M activities associated with the Bellrock Offshore Transmission Infrastructure have the potential to give rise to a range of impacts relevant to intertidal and offshore ornithology:

- Disturbance and displacement from vessel activity;
- Disturbance and attraction associated with artificial lighting;
- Changes in prey availability;
- Disturbance and displacement associated with the presence of Offshore Transmission Infrastructure;
- Entanglement risk with subsea infrastructure;
- Barrier effects associated with surface-piercing Offshore Transmission Infrastructure;
- Collision risk with surface-piercing Offshore Transmission Infrastructure; and
- Effects of accidental pollution incidents on seabirds.



### 9.5.3 Decommissioning Phase

878. Decommissioning activities are expected to be broadly comparable to those undertaken during the construction phase, with the exception of UXO clearance which is specific to the construction phase:

- Disturbance and displacement from vessel activity;
- Disturbance and attraction associated with artificial lighting;
- Changes in prey availability; and
- Effects of accidental pollution incidents on seabirds.

### 9.5.4 Embedded Mitigation Measures

879. Embedded mitigation has been identified, as presented in **Table 9.6** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.

880. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 9.6: Embedded Mitigation Measures Relevant to Intertidal and Offshore Ornithology**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Use of seabed preparation methods and equipment that minimise sediment suspension and dispersal will reduce the extent and duration of sediment plumes generated during construction works. This will limit the potential for indirect effects on ornithological receptors through changes in prey availability.                                                                                                                             | Primary         |
| ✓                          | X   | X               | The Bellrock Offshore Transmission Infrastructure will be micro-sited, where practicable, to avoid sensitive seabed habitats, low or limited mobility benthic species, such as Annex I habitats and Priority Marine Features. Micro-siting will be informed by surveys prior to the commencement of construction which will identify the location and extent of habitats and species.                                                                                                                                                                                                                                                                                                    | Micro-siting of the Bellrock Offshore Transmission Infrastructure to avoid sensitive habitats and species, where practicable, will reduce disturbance to benthic communities and other ecological features that support bird prey resources. This will minimise the potential for indirect effects on intertidal and offshore birds through changes to prey availability.                                                                    | Primary         |
| ✓                          | ✓   | ✓               | Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or | Implementation of the VMNSP will support the management of vessel movements throughout construction, O&M, and decommissioning, reducing the potential for disturbance to intertidal and offshore birds from vessel presence and movement. Adoption of defined transit corridors and recognised good practice for vessel operations, where practicable, will further minimise the spatial extent and frequency of vessel-related disturbance. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                           | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                   |                 |
|                            |     |                 | <p>other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (SNH, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (SNH, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> |                                                                                                                                                                                                                                                                                                                                                                   |                 |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan (MPCP).</p> <p>The MPCP will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.</p>                                                                                                                                                                                                                                                    | Implementation of a MPCP will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will minimise the potential for adverse effects on intertidal and offshore birds arising from contamination of habitats, prey resources and the marine environment.  | Tertiary        |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                                  | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise the potential for disturbance and other adverse effects on intertidal and offshore birds and support the application of good environmental practice. | Tertiary        |
| ✓                          | X   | X               | A detailed Marine Mammal Mitigation Plan (MMMP) will be prepared for UXO clearance. The MMMP for UXO clearance will ensure there are adequate mitigation measures to minimise the risk of any physical or                                                                                                                                                                                                                                                                                                                | Implementation of the MMMP for UXO clearance will ensure that appropriate mitigation measures are applied during UXO clearance, helping to reduce the scale of underwater noise effects.                                                                                                                                                                          | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                          |                 |
|                            |     |                 | <p>permanent auditory injury to marine mammals as a result of UXO clearance.</p> <p>The most suitable mitigation measures, based upon best available information and methodologies at that time, will be utilised. The MMMP for UXO clearance will be prepared in consultation with the Marine Directorate Licensing Operations Team and NatureScot.</p>                                                                                                                                                                                                                                                                                                                                                                                        | This will minimise the potential for effects on intertidal and offshore birds.                                                                                                                                                                                                                                                                                           |                 |
| ✓                          | X   | X               | <p>Development of a UXO Threat and Risk Assessment.</p> <p>All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of unexploded ordnance Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).</p>                                                                                                                                                                                                                                                                                                                                                                                            | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and application of appropriate clearance methods and mitigation measures, helping to minimise the number and scale of UXO detonations where practicable. This will reduce the potential for disturbance to birds and their prey species.                                           | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading invasive non-native species. This will help maintain the integrity of marine and intertidal ecosystems that support ornithological receptors and their prey resources. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Relevance to Assessment                                                                                                                                                                                                                                                                                                         | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                 |                 |
| ✓                          | ✓   | ✓               | <p>Development of, and adherence to, a Lighting and Marking Plan (LMP).</p> <p>The LMP will set out the lighting and marking requirements for the Bellrock Offshore Transmission Infrastructure during the construction, O&amp;M, and decommissioning phases, including compliance with all relevant navigation and aviation legislative requirements. The LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst maintaining compliance with these requirements. Procedures will also be established for the reporting and timely rectification of lighting and marking failures, with interim hazard warnings implemented where required.</p> | <p>Implementation of the LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst meeting navigational and aviation safety requirements. This will reduce the potential for attraction and disturbance of intertidal and offshore birds associated with artificial lighting.</p>                    | Tertiary        |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme (DP).</p> <p>The DP will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                                                                                                                                                                                          | <p>Implementation of a DP will ensure that decommissioning is planned and undertaken in a manner that minimises environmental disturbance and supports the protection of marine and coastal habitats. This will reduce the potential for adverse effects on intertidal and offshore birds during the decommissioning phase.</p> | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement (CMS).</p> <p>The CMS will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.</p> | <p>Implementation of a CMS will ensure that construction works are undertaken in a controlled and coordinated manner, with measures in place to avoid or reduce environmental disturbance. This will minimise the potential for effects on intertidal and offshore birds arising from construction, including vessel movements, noise and visual disturbance.</p>                                                                                                                                             | Tertiary        |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p>                             | <p>Regular inspection and maintenance, including surveys and removal of debris, where required, will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the need for more extensive corrective works. This will reduce the frequency and scale of maintenance-related disturbance, including vessel activity and associated disturbance to intertidal and offshore birds throughout the operational life of the Bellrock Offshore Transmission Infrastructure.</p> | Tertiary        |

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## 9.6 Scoping of Potential Impacts

### 9.6.1 Construction Phase

#### 9.6.1.1 Disturbance and Displacement from Vessel Activity

881. Noise and visual disturbance may occur due to vessel presence and movement (including vessel transit corridors between the Bellrock OFTDA and the construction ports), helicopter activity (if required), activities associated with the installation of the Offshore Transmission Infrastructure. Such disturbance may result in temporary displacement from foraging or resting areas and associated increases in energetic expenditure. However, impacts are short-term, intermittent, and localised around active work areas. This impact is **scoped in** for further assessment in the EIA.

#### 9.6.1.2 Disturbance and Attraction Associated with Artificial Lighting

882. Artificial lighting associated with construction vessels and temporary construction works has the potential to influence the behaviour of light sensitive bird species through attraction, disorientation, and avoidance responses.
883. The **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) considered the potential for disturbance and attraction associated with artificial lighting from construction works associated with the Wind Farm Infrastructure, including associated vessels, and concluded that significant effects were not anticipated. This is due, in part, to the limited occurrence of light sensitive species, such as Manx shearwater, European storm petrel, and Leach's storm petrel, within the Bellrock WFDA. This conclusion on the limited occurrence of light sensitive species is also relevant to the Bellrock OFTDA Scoping Boundary.
884. Construction vessel lighting would be temporary and transient and would not result in a substantial illuminated area or a continuous illuminated corridor. Given the temporary nature of the construction works, the limited occurrence of light sensitive species within the Bellrock OFTDA Scoping Boundary, and existing evidence from the **Bellrock WFDA EIA Report**, significant effects associated with disturbance and attraction to artificial lighting are not anticipated. Therefore, this impact pathway is proposed to be **scoped out** of further assessment in the Bellrock OFTDA EIA.

#### 9.6.1.3 Changes in Prey Availability

885. Site preparation works and construction works have the potential to result in indirect impacts on seabirds and waterfowl through changes to prey distribution, abundance, and availability arising from impacts on benthic habitats and fish and shellfish assemblages. This impact is **scoped in** for further assessment in the EIA. This would be limited to species with restricted foraging ranges, such as little tern. Whereas, for species with large foraging ranges, such as kittiwake, temporary changes in prey availability within a spatially constrained area where construction activities will occur are unlikely to result in material impacts.

#### 9.6.1.4 Disturbance and Displacement from UXO Clearance Activities

886. UXO clearance, if required, may result in short-term but high-intensity underwater noise and associated disturbance. This has the potential to cause temporary disturbance and displacement of seabirds from foraging and resting area, particularly through behavioural avoidance of affected

areas during clearance operations. The nature, timing, scale and clearance methods associated with any UXO clearance activities are not yet fully defined, and therefore impacts cannot be fully characterised at this stage. A qualitative assessment of potential UXO clearance effects will therefore be undertaken in the Bellrock OfTDA EIA Report. Should UXO clearance be required, this would be subject to a separate Marine Licence Application, supported by a detailed assessment of potential ornithology effects based on the confirmed UXO clearance scenario and methodologies proposed. This impact is **scoped in** for further assessment in the EIA.

#### 9.6.1.5 Effects of Accidental Pollution Incidents on Seabirds

887. Accidental pollution events during construction have the potential to affect seabirds directly through contamination (e.g. oiling or exposure during loafing, diving, or foraging), and indirectly through effects on prey availability. However, the risk and potential consequences of pollution incidents will be reduced through implementation of embedded mitigation measures, including development and implementation of a MPCP and adherence to MARPOL requirements and associated good practice (**Table 9.6**). In view of the embedded mitigation that will be in place, the likelihood of significant effects is negligible. It is therefore proposed that this impact is **scoped out** of further assessment in the EIA.

### 9.6.2 Operation and Maintenance Impacts

#### 9.6.2.1 Disturbance and Displacement from Vessel Activity

888. During the O&M phase, vessel activity associated with inspection, maintenance, repair, and replacement works has the potential to result in disturbance and displacement of seabirds through noise and visual disturbance. O&M vessel activity is anticipated to be less frequent and of lower intensity than during construction, with activity expected to be intermittent and localised around active work areas and vessel transit corridors. However, the potential for disturbance and displacement cannot be ruled out, and therefore this impact is **scoped in** for further assessment in the EIA.

#### 9.6.2.2 Disturbance and Attraction Associated with Artificial Lighting

889. Artificial lighting associated with O&M vessel activity and the presence of the OfSS(s) and OfRCS(s) has the potential to influence the behaviour of light sensitive species through attraction, disorientation, and avoidance responses.
890. The **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) considered the potential for disturbance and attraction associated with artificial lighting from the Wind Farm Infrastructure, including up to 132 wind turbine generators, and associated vessel activity and concluded that significant effects were not anticipated. This was due, in part, to the limited occurrence of light sensitive species, such as Manx shearwater, European storm petrel, and Leach's storm petrel within the Bellrock WFDA. This conclusion on the limited occurrence of light sensitive species is also relevant to the Bellrock OfTDA Scoping Boundary.
891. During the O&M phase, permanent artificial lighting would be associated with up to six OfSS(s) located within the Bellrock WFDA and up to two OfRCS(s) located within the OfRCS Area of Search, at least 39 km from the coastline (MHWS). The six OfSS(s) represent a small increase in the number of illuminated surface-piercing structures within the area where the potential effects of artificial lighting associated with a substantially larger number of wind turbine generators has



already been assessed. The addition of the OfSS(s) is therefore not expected to materially increase the potential for disturbance and attraction effects beyond those already considered in the **Bellrock WFDA EIA Report**.

892. The up to two OfRCS(s) would be located at least 39 km from the coastline (MHWS) and would comprise isolated, co-located structures with a small spatial footprint that would not result in a substantial illuminated area or continuous illuminated corridor.
893. O&M vessel activity would be limited to infrequent inspection, maintenance, and repair activities. Associated vessel lighting would therefore be temporary, intermittent and spatially constrained and is not expected to materially contribute to disturbance and attraction effects.
894. Taking account of the existing Bellrock WFDA EIA conclusions, the limited occurrence of light sensitive species within the Bellrock OfTDA Scoping Boundary, and the limited incremental contribution of artificial lighting associated with the Bellrock Offshore Transmission Infrastructure, significant effects are not anticipated. Therefore, this impact pathway is proposed to be **scoped out** of further assessment in the Bellrock OfTDA EIA.

### 9.6.2.3 Changes in Prey Availability

895. O&M activities, including inspection, maintenance, repair, and replacement of Offshore Transmission Infrastructure, have the potential to result in indirect effects on seabirds through impacts on benthic habitats and communities, fish and shellfish assemblages, and prey-supporting habitats. Although O&M activities are anticipated to be intermittent and of lower intensity than construction activities, the potential for indirect impacts on seabirds cannot be ruled out and are therefore **scoped in** for further assessment in the EIA. This would be limited to species with restricted foraging ranges, such as little tern. Whereas, for species with large foraging ranges, such as kittiwake, temporary changes in prey availability within a spatially constrained area where O&M activities will occur are unlikely to result in material impacts.

### 9.6.2.4 Disturbance and Displacement Associated with the Presence of Offshore Transmission Infrastructure

896. Surface-piercing Offshore Transmission Infrastructure, including the OfSS(s) and OfRCS(s), has the potential to result in disturbance and displacement of seabirds and waterfowl. However, the potential for disturbance and displacement is considered limited due to the relatively small number and localised nature of the OfSS(s) and OfRCS(s). Up to six OfSS(s) may be installed within the area of the Bellrock OfTDA Screening Boundary that overlaps with the Bellrock WFDA, where up to 132 wind turbine generators are already proposed (Bellrock Offshore Wind Farm Limited, 2026), and therefore the addition of the OfSS(s) is unlikely to materially alter the potential for disturbance and/or displacement. In addition, up to two co-located OfRCS(s) may be installed along the offshore export cable corridor, at least 39 km from the coastline (MHWS), representing isolated and localised structures that would be unlikely to result in displacement and/or avoidance. Given the above, the potential for impact can be ruled out and this impact is **scoped out** for further assessment in the EIA.

#### 9.6.2.5 Entanglement Risk with Subsea Infrastructure

897. Entanglement risk during the O&M phase is not considered to represent a credible impact pathway for seabird receptors. The Offshore Transmission Infrastructure will not include floating substructures, with the OfSS(s) and OfRCS(s) comprising FBSSs only. As a result, there will be no mooring lines or other suspended infrastructure within the water column that could facilitate primary entanglement, accumulation of marine debris or abandoned fishing gear resulting in secondary entanglement, or tertiary entanglement pathways.
898. Entanglement with subsea infrastructure is therefore **scoped out** of further assessment in the EIA.

#### 9.6.2.6 Barrier Effects Associated with Surface-piercing Offshore Transmission Infrastructure

899. Surface-piercing Offshore Transmission Infrastructure, comprising the OfSS(s) and OfRCS(s), has the potential to result in barrier effects for seabirds through alteration of movement or flight pathways. The **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026) considered the potential for barrier effects associated with up to 132 wind turbine generators within the 280 km<sup>2</sup> Bellrock WFDA and concluded that the magnitude of impact would be negligible and the effect not significant on migratory species.
900. Up to six OfSS(s) may be installed within the Bellrock WFDA, representing a small increase in the number of surface-piercing structures within an area where the potential for barrier effects associated with a substantially larger number of wind turbine generators has already been assessed. The addition of the OfSS(s) is therefore not expected to materially increase the potential for barrier effects beyond those already considered within the **Bellrock WFDA EIA Report**.
901. Up to two OfRCS(s) may be installed within the OfRCS Area of Search, at least 39 km from the coastline (MHWS). These would comprise isolated and localised structures that would not form an extensive barrier to seabird movement or migration pathways.
902. Taking account of the existing **Bellrock WFDA EIA Report** conclusions and the limited incremental contribution of the Bellrock Offshore Transmission Infrastructure, significant barrier effects are not anticipated. Therefore, this impact pathway is proposed to be **scoped out** of further assessment in the Bellrock OfTDA EIA.

#### 9.6.2.7 Collision Risk with Surface-Piercing Offshore Transmission Infrastructure

903. As described for barrier effects in **Section 9.6.2.6**, the number and spatial extent of surface-piercing Offshore Transmission Infrastructure within the Bellrock OfTDA will be limited. In addition, the OfSS(s) and the OfRCS(s) are static surface-piercing structures and do not include moving components such as rotating turbine blades, which are typically associated with increased collision risk for seabirds. The potential for significant effects due to collision is therefore considered negligible, and this impact is **scoped out** of further assessment in the EIA.

#### 9.6.2.8 Effects of Accidental Pollution Incidents on Seabirds

904. Accidental pollution events during the O&M phase have the potential to affect seabirds directly through contamination and indirectly via effects on prey availability. However, the likelihood and potential consequences of such events are considered highly unlikely given the embedded mitigation measures in place, including the development of and adherence to a MPCP and

adherence to MARPOL requirements (**Table 9.6**). As such, it is proposed that this impact is **scoped out** of further assessment in the EIA.

### 9.6.3 Decommissioning Impacts

905. During decommissioning, the potential impacts to seabirds are anticipated to be similar to those described above for the construction phase (**Section 9.6.1**), except for UXO clearance impacts which are only relevant to the construction phase.

### 9.6.4 Bellrock OfTDA Whole Project Assessment

906. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on intertidal and offshore ornithological receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
907. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock OnTDA for intertidal and offshore ornithology. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

### 9.6.5 Potential Cumulative Effects

908. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
909. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 9.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on intertidal and offshore ornithological receptors.
910. Seabirds range widely during the breeding and non-breeding seasons and may therefore interact with several OWFs and other developments in the marine environment. Most potential impacts on birds arising from the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure are predicted to occur mainly within the Bellrock OfTDA due to the localised and temporary nature of the anticipated activities. However, there is the potential for cumulative impacts to occur where other plans or projects could act collectively with the Bellrock Offshore Transmission Infrastructure to affect birds, and these will be considered in the CEA within the EIA.

911. The CEA will focus (as a minimum) on the cumulative impacts with existing and consented OWFs and associated infrastructure in the region including Seagreen, Inch Cape, Neart na Gaoithe, Green Volt and Kincardine – Phase 2, as well as other proposed OWFs in the outer Firth of Forth and western North Sea including Berwick Bank, Ossian and Morven to the south and west; Muir Mhòr and CampionWind to the north, and Cedar to the east. Additional projects located in Scottish and English waters will be scoped into the cumulative assessment for breeding seabird populations based on the potential for connectivity with these breeding populations during both the breeding and non-breeding seasons. As detailed for SPA breeding colonies, this will be based upon the mean maximum breeding season foraging range +1 SD from Woodward et al. (2019), or the appropriate alternative measure, as advised by NatureScot (2023e), between colonies and the relevant developments during the breeding season. During the non-breeding period, it will be based upon the BDMPS approach (Furness, 2015) or the species breeding season foraging range, depending on the species involved) and whether it relates to regional populations (for EIA) or SPA populations (for HRA).

### 9.6.6 Potential Transboundary Effects

912. The Bellrock OfTDA EIA report will consider whether there are any non-UK seabird colonies with potential connectivity to the Bellrock OfTDA during the breeding and non-breeding seasons. Any potential impacts on birds from non-UK seabird colonies will be addressed in the EIA.

### 9.6.7 Summary of Potential Impacts

913. **Table 9.7** outlines the intertidal and offshore ornithology impacts which are proposed to be scoped in or scoped out of the Bellrock OfTDA EIA.

**Table 9.7: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Intertidal and Offshore Ornithology**

| Potential Impact                                                                                  | Receptor(s)         | Scoped In or Scoped Out? (✓ or X) |     |                 |
|---------------------------------------------------------------------------------------------------|---------------------|-----------------------------------|-----|-----------------|
|                                                                                                   |                     | Construction                      | O&M | Decommissioning |
| Disturbance and displacement from vessel activity                                                 | Seabirds, Waterfowl | ✓                                 | ✓   | ✓               |
| Disturbance and attraction associated with artificial lighting                                    | Seabirds, Waterfowl | X                                 | X   | X               |
| Changes in prey availability                                                                      | Seabirds, Waterfowl | ✓                                 | ✓   | ✓               |
| Disturbance and displacement from UXO clearance                                                   | Seabirds, Waterfowl | ✓                                 | X   | X               |
| Disturbance and displacement associated with the presence of Offshore Transmission Infrastructure | Seabirds, Waterfowl | X                                 | X   | X               |
| Entanglement risk with subsea infrastructure                                                      | Seabirds, Waterfowl | X                                 | X   | X               |
| Barrier effects associated with surface-piercing Offshore Transmission Infrastructure             | Seabirds, Waterfowl | X                                 | X   | X               |
| Collision risk with surface-piercing Offshore Transmission Infrastructure                         | Seabirds, Waterfowl | X                                 | X   | X               |
| Effects of accidental pollution incidents on seabirds                                             | Seabirds, Waterfowl | X                                 | X   | X               |
| Bellrock OFTDA Whole Project Assessment                                                           | Seabirds, Waterfowl | ✓                                 | ✓   | ✓               |
| Cumulative effects                                                                                | Seabirds, Waterfowl | ✓                                 | ✓   | ✓               |
| Transboundary effects                                                                             | Seabirds, Waterfowl | ✓                                 | ✓   | ✓               |

## 9.7 Proposed Approach to Impact Assessment

914. The impact assessment for intertidal and offshore ornithology will be undertaken in accordance with industry standard guidance (e.g. Chartered Institute of Ecology and Environmental Management, 2018) and based on the methodology described in in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.
915. The EIA baseline will be informed by survey data from the Bellrock WFDA offshore aerial survey area and intertidal winter surveys undertaken in the Bellrock landfall Area of Search, as well as DAS data from other OWFs (e.g. Ossian Array aerial survey area, Bowdun Array aerial survey area, the SSE Regional Aerial Survey area, the Morven arial survey area and survey data pertaining to nearshore areas (Lawson et al., 2018). Reference will also be made to a range of other relevant sources (e.g. Waggitt et al. (2019), Cleasby et al. (2018), Cleasby et al. (2020), Lane et al. (2020), Wakefield et al. (2013), WeBS data). These data will be considered in the context of the defined seasonal periods for each species, which are set out in **Section 9.7.1**.
916. It is important to note that whilst the Bellrock OfTDA Scoping Boundary covers a large area (3,605 km<sup>2</sup>), the Offshore Transmission Infrastructure will only account for a small proportion of the Bellrock OfTDA and therefore associated impacts will be limited to this (and any surrounding buffer zone in which disturbance/displacement could take place). There will be a limited number of surface-piercing structures located at discrete locations within the Bellrock OfTDA, up to six OfSS(s) will be located within the Bellrock OfTDA where it overlaps with the Bellrock WFDA, whilst up to two OfRCS(s) will be located along the offshore export cable corridor. Considering the highly localised and limited nature of the offshore infrastructure proposed within the Bellrock OfTDA and the intention to use non-project specific data sources to inform the baseline, the use of specialised data analysis techniques and/or modelling tools are not proposed in the impact assessment.

### 9.7.1 Seasonality

917. The length of the breeding and non-breeding periods varies between seabird species. For seabirds potentially sensitive to the impacts of the Bellrock Offshore Transmission Infrastructure, the breeding and non-breeding periods that will be used in the assessment will follow the seasonal definitions provided by NatureScot Guidance Note 9 (2020a). These are provided in **Table 9.8** for the most abundant seabird species, as detailed in **Section 9.4.3** and **Section 9.4.4**.
918. In addition, the seasonal periods that NatureScot advised to be used for guillemot in the Bellrock WFDA assessment are presented, as these differ from the standard NatureScot guidance (Chapter 10: Offshore Ornithology of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026)). Given the importance of consistency in considering the effects from the activities and infrastructure associated within the Bellrock OfTDA cumulatively with those associated with the Bellrock WFDA, it is proposed to adopt the guillemot seasonal periods used for the Bellrock WFDA assessment in the assessment for the Bellrock OfTDA.

**Table 9.8: Seasonal Definitions of the most abundant Seabird Species Recorded During the Two Years of Baseline Surveys in the Bellrock WFDA, Ossian Array, Bowdun Array, Morven Array, and Regional Aerial Survey Areas**

| Species                                                                                                                                                                                                                                                                                                                                                       | Breeding Season       | Autumn Passage /Post-Breeding Dispersal (Guillemot) | Migration Free Winter or Non-Breeding Period | Spring Passage |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------|----------------------------------------------|----------------|
| Fulmar                                                                                                                                                                                                                                                                                                                                                        | April – mid September | -                                                   | Mid-September – March                        | -              |
| Gannet                                                                                                                                                                                                                                                                                                                                                        | Mid-March – September | -                                                   | October – mid-March                          | -              |
| Guillemot <sup>1</sup><br>– A) As per standard guidance                                                                                                                                                                                                                                                                                                       | April – mid-August    | -                                                   | Mid-August – March                           | -              |
| Guillemot <sup>1</sup><br>B) As advised by NatureScot for the Bellrock WFDA assessment                                                                                                                                                                                                                                                                        | April – June          | July – September                                    | October – March                              | -              |
| Kittiwake                                                                                                                                                                                                                                                                                                                                                     | Mid-April – August    | -                                                   | September – mid-April                        | -              |
| Puffin                                                                                                                                                                                                                                                                                                                                                        | April – mid-August    | -                                                   | Mid-August – March                           | -              |
| Razorbill                                                                                                                                                                                                                                                                                                                                                     | April – mid-August    | -                                                   | Mid-August – March                           | -              |
| <p>Notes:</p> <p><sup>1</sup> Two definitions of the seasonal periods for guillemot are presented as NatureScot advised that the assessment of the Bellrock WFDA should use a different definition to that in the standard guidance (Chapter 10: Offshore Ornithology of the <b>Bellrock WFDA EIA Report</b> (Bellrock Offshore Wind Farm Limited, 2026).</p> |                       |                                                     |                                              |                |

## 9.7.2 Reference Populations, Foraging Ranges and Connectivity

919. Estimates of breeding seabird population sizes will be obtained from the Seabird Monitoring Programme online database (JNCC and BTO, 2025) and Seabirds Count census (Burnnell et al., 2023); non-breeding seabird population sizes will be taken from Furness (2015). The most recently available colony population size estimates will be used for the purposes of providing reference population sizes against which impacts are assessed, whilst population size estimates from Seabirds Count (Burnnell et al., 2023) and Furness (2015) will be used for the purposes of apportioning impacts during the breeding and non-breeding seasons, respectively (in the event that there is a requirement for such quantitatively based apportioning exercises to be undertaken). Where species that require assessment are not included in the Seabird Monitoring Programme, Seabirds Count or the Furness report, other appropriate sources will be used.



920. The recommended foraging ranges for seabirds around breeding colonies (Woodward et al., 2019; NatureScot, 2023c) will be used to determine potential connectivity between breeding colonies (both SPA and non-SPA) and the Bellrock OFTDA Scoping Boundary. These are presented in **Table 9.9** (source: (Woodward et al., 2019; NatureScot, 2023c; HiDef 2024, 2023; RPS, 2024) for the species recorded in the Bellrock WFDA and Ossian Array along with the metric to be used in the assessment. As outlined in **Section 9.4.1**, for most species, the metric recommended by NatureScot is the mean maximum foraging range +1 SD; although where there is insufficient data to calculate this, then the maximum will be used followed in preference by the mean. For gannet, the site-specific maximum foraging range will be used for those SPA colonies for which sufficient colony-specific data are available, as advised by NatureScot (2023c), and for guillemot and razorbill colonies south of the Pentland Firth, the mean maximum + 1SD will be used excluding the data from Fair Isle, as presented in Woodward et al. (2019).

**Table 9.9: Foraging Ranges and Recommended Assessment Metrics for Seabird Species Recorded During Baseline Surveys in the Bellrock WFDA, Ossian Array and Regional Aerial Survey Areas**

| Species                                                                                                                       | Foraging Range (km)                   | Metric                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Arctic skua                                                                                                                   | 2.7                                   | Mean + 1SD                                                                                                                                              |
| Arctic tern                                                                                                                   | 25.7 (±14.8)                          | MM + 1SD                                                                                                                                                |
| Common gull                                                                                                                   | 50                                    | Max/MM                                                                                                                                                  |
| Common tern                                                                                                                   | 18.0 (±8.9)                           | MM + 1SD                                                                                                                                                |
| European storm-petrel                                                                                                         | 336                                   | Max/MM                                                                                                                                                  |
| Fulmar                                                                                                                        | 542.3 (±657.9)                        | MM + 1SD                                                                                                                                                |
| Gannet <ul style="list-style-type: none"> <li>▪ Forth Islands SPA</li> <li>▪ St Kilda SPA</li> <li>▪ Grassholm SPA</li> </ul> | 315.2 (±194.2)<br>590<br>709<br>516.7 | MM + 1SD<br><ul style="list-style-type: none"> <li>▪ Site-specific maximum</li> <li>▪ Site-specific maximum</li> <li>▪ Site-specific maximum</li> </ul> |
| Great black-backed gull                                                                                                       | 73                                    | Max/MM                                                                                                                                                  |
| Great skua                                                                                                                    | 443.3 (±487.9)                        | MM + 1SD                                                                                                                                                |
| Guillemot (SPAs north of Pentland Firth inclusive of Fair Isle data)                                                          | 73.2 (±80.5)                          | MM + 1SD                                                                                                                                                |
| Guillemot (SPAs south of Pentland Firth excluding Fair Isle data)                                                             | 55.5 (±39.7)                          | MM + 1SD                                                                                                                                                |
| Herring gull                                                                                                                  | 58.8 (±26.8)                          | MM + 1SD                                                                                                                                                |
| Kittiwake                                                                                                                     | 156.1 (±144.5)                        | MM + 1SD                                                                                                                                                |
| Leach's storm-petrel                                                                                                          | 657                                   | Mean                                                                                                                                                    |
| Lesser black-backed gull                                                                                                      | 127 (±109)                            | MM + 1SD                                                                                                                                                |



| Species                                                              | Foraging Range (km)     | Metric   |
|----------------------------------------------------------------------|-------------------------|----------|
| Manx shearwater                                                      | 1346.8 ( $\pm 1018.7$ ) | MM + 1SD |
| Puffin                                                               | 137.1 ( $\pm 128.3$ )   | MM + 1SD |
| Guillemot (SPAs north of Pentland Firth inclusive of Fair Isle data) | 88.7 ( $\pm 75.9$ )     | MM + 1SD |
| Razorbill (SPAs south of Pentland Firth excluding Fair Isle data)    | 73.8 ( $\pm 48.4$ )     | MM + 1SD |
| Red-throated diver                                                   | 9                       | Max/MM   |
| Sandwich tern                                                        | 34.3 ( $\pm 23.2$ )     | MM + 1SD |
| Notes:<br>MM = Mean maximum      SD = Standard Deviation).           |                         |          |

### 9.7.3 Highly Pathogenic Avian Influenza

921. The ongoing HPAI outbreak has the potential to result in significant impacts on seabird populations and increases the level of uncertainty within the ornithological assessment of the Bellrock Offshore Transmission Infrastructure. At present, it is assumed that the impacts of HPAI will be addressed in the assessment qualitatively in an analogous way to how this was undertaken for the assessment of the Bellrock WFDA, unless alternative advice or guidance on this topic is provided by NatureScot (Chapter 10: Offshore Ornithology of the **Bellrock WFDA EIA Report** and Part 3 of the **Bellrock WFDA RIAA** (Bellrock Offshore Wind Farm Limited, 2026)).

## 9.8 Scoping Questions to Consultees

922. The following questions are posed to consultees to help them frame and focus their response to the intertidal and offshore ornithology scoping exercise, which will in turn inform the EIA:

- Do you agree that all relevant data sources have been identified in **Section 9.4.2**?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 9.2**?
- Do you agree with the proposed study area as presented in **Section 9.4.1**?
- Do you agree that the data sources will be sufficient to describe the Bellrock OfTDA EIA baseline for ornithology?
- Do you agree with the potential impacts that have been scoped in and scoped out for the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure in relation to ornithology (**Section 9.6**)?
- Do you agree to define seasonal periods for guillemot as NatureScot advised for the assessment of the Bellrock WFDA: breeding season: April – June post-breeding dispersal: July – September, migration-free winter: October – March, (Chapter 10: Offshore Ornithology of the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026))?
- Do you agree that the advice provided by NatureScot via email (19 July 2024) in respect of the Bellrock WFDA should also apply to the Bellrock OfTDA? *“We can now confirm that a non-breeding season assessment should be undertaken quantitatively through the EIA assessment, i.e. using an annual mortality (breeding season plus non-breeding season) with a regional population. Given the current evidence available, we advise that this would not be required to be undertaken quantitatively within the HRA. However, we recommend that this is addressed qualitatively within the conclusions for puffin.”*
- Do you agree that the embedded mitigation measures (**Section 9.5.4**) are appropriate and suitably encapsulate the means to mitigate potential impacts from the Bellrock Offshore Transmission Infrastructure on seabird populations?
- Do you agree with the sources suggested for defining seabird seasons, estimating reference populations and foraging ranges?
- Do you agree with the proposed approach to the CEA?
- Do you agree with the proposed approach to addressing HPAI?
- Do you have any other matters or information sources that you wish to present?

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# 10 Commercial Fisheries

## 10.1 Introduction

923. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on commercial fisheries.
924. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
925. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
926. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

927. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
928. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on commercial fisheries receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by NiMa Consultants Limited.
929. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 7: Fish and Shellfish Ecology;**
  - **Chapter 11: Shipping and Navigation;**
  - **Chapter 16: Socioeconomics and Tourism;** and
  - **Chapter 19: Major Accidents and Disasters.**
930. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 10.2 Legislation, Policy and Guidance

931. **Table 10.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching legislation and policy relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.
932. It is noted that updated fisheries liaison best practice guidance has been published through the Fisheries Liaison with Offshore Wind and Wet Renewables Group (FLOWW) (FLOWW, 2025) in November 2025, consolidating earlier guidance documents and setting out detailed operational principles for fisheries liaison and disruption management. However, as of September 2025, the Scottish Fishermen's Federation (SFF) and its constituent associations have withdrawn from the FLOWW process and at the time of writing, do not endorse that guidance. A number of other stakeholders continue to endorse the FLOWW guidance. No replacement Scottish-specific fisheries liaison guidance acceptable to SFF and its associations has been published at the time of preparation of this **Bellrock OfTDA Scoping Report**. Should new or replacement Scottish-specific guidance be issued, this will be considered in the commercial fisheries assessment.

**Table 10.1: Summary of Relevant Legislation, Policy and Guidance for Commercial Fisheries**

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                                                                                  | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Legislation                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Marine (Scotland) Act 2010                                                                                                                                                                                                                                                                                                                                 | All applicable fisheries legislation is considered to form an integral part of the regulatory and operational baseline under which commercial fisheries operate. These legislative instruments define the spatial and temporal parameters, gear types, effort limitations, and conservation measures that govern commercial fishing activity. As such, they are inherently embedded in the baseline characterisation of commercial fisheries. |
| Marine and Coastal Access Act 2009                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The Sandeel (Prohibition of Fishing) (Scotland) Order 2024                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fisheries Act 2020                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The Razor Clams (Prohibition on Fishing and Landing) (Scotland) Order 2017                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The Sea Fishing (Licences and Notices) (Scotland) Regulations                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Aquaculture and Fisheries (Scotland) Act 2007                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The Inshore Fishing (Prohibition of Fishing and Fishing Methods) (Scotland) Order 2004                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Inshore Fishing (Scotland) Act 1984                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Sea Fish (Conservation) Act 1967                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Policy                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020) (and the Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025a)) (including the accompanying draft Strategic Environmental Assessment (Scottish Government, 2025b) and the Social and Economic Impact Assessment (Scottish Government, 2025c)) | Relevant Sector Marine Plan principles will be reflected in the assessment, including taking account of other marine users and applying evidence-led planning and mitigation. These principles will be integrated through detailed baseline characterisation of commercial fishing activity, and early consultation which will directly inform the assessment of impacts.                                                                     |
| Scotland’s National Marine Plan (SNMP) (Scottish Government, 2015)<br><br>SNMP is currently being updated, transitioning to the SNMP 2. Consultation on SNMP 2 ran from 5 November 2024 to 7 February 2025 and a consultation analysis report has been produced by the Scottish Government (2025d)                                                         | Contains sector-specific policies relevant to offshore wind, including the associated transmission infrastructure, and commercial fisheries.                                                                                                                                                                                                                                                                                                  |
| United Kingdom (UK) Marine Policy Statement (Her/his Majesty’s Government, 2011)                                                                                                                                                                                                                                                                           | Reflecting the desire for co-existence of activities in the marine environment.                                                                                                                                                                                                                                                                                                                                                               |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Relevance to the Assessment                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Guidance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                             |
| Guidance on preparing Mitigation and Monitoring Plans: Fisheries Mitigation, Monitoring, and Communication Plan (Scottish Government, 2025e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | In addition to the general approach and guidance outlined in <b>Chapter 4: Approach to Scoping and Environmental Impact Assessment</b> , the assessment of potential impacts on commercial fisheries receptors will also comply with the listed guidance documents where they are relevant to this Chapter. |
| Monitoring Offshore Windfarm Impacts on the Commercial Fishing Industry Good Practice Guidance (Scottish Government, 2025f)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                             |
| FLOWW Best Practice Guidance for Fisheries Liaison with Offshore Renewables Developments (FLOWW, 2025)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                             |
| Guidelines for liaison with the fishing industry on the United Kingdom Continental Shelf (Issue 8) (Offshore Energies UK, 2023)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                             |
| Good Practice Guidance for assessing fisheries displacement by other licenced marine activities (Scottish Government, 2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                             |
| Guidance on Claim for Compensation for Damage or Loss of Fishing Gear, Loss of Fishing Time, or Damage to Vessel by Suspected Offshore Renewable Activity (Scottish Government, 2021)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                             |
| Recommendations for positive interactions between offshore wind farms and fisheries (Dupont et al., 2020)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                             |
| The North and East Coast Regional Inshore Fisheries Group Fisheries Management Plan (North and East Coast Regional Inshore Fisheries Group, 2019)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                             |
| European Subsea Cables Association (ESCA) Guideline 01 Fishing Liaison (ESCA, 2018a) and following Appendices: <ul style="list-style-type: none"> <li>▪ Guideline 01 - Appendix 01 - Principal UK Fishing Organisations - Issue 8, July 2018 (ESCA, 2018b);</li> <li>▪ Guideline 01 - Appendix 02 - Principal Operational Regulations, Issue 7, July 2018 (ESCA, 2018c);</li> <li>▪ Guideline 01 - Appendix 03 - Fishing Claims forms &amp; Guidance Notes, Issue 11, November 2018 (ESCA, 2018d);</li> <li>▪ Guideline 01 - Appendix 04 - Guidance Fishing Reps, Issue 7, July 2018 (ESCA, 2018e);</li> <li>▪ Guideline 01 - Appendix 05 - Guidance Notes for Guard Vessels, Issue 10, July 2018 (ESCA, 2018f); and</li> <li>▪ Guideline 01 - Appendix 06 - Telecom Cable Works Notice, Issue 7, July 2018 (ESCA, 2018g).</li> </ul> |                                                                                                                                                                                                                                                                                                             |
| Best Practice Guidance for Fishing Industry Financial and Economic Impact Assessments (United Kingdom Fisheries Economic Network and Seafish, 2012)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                             |
| Guidelines for data acquisition to support marine environmental assessments for offshore renewable energy projects (Centre for Environment Fisheries and Aquaculture Science (Cefas), 2012)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                             |

| Relevant Legislation, Policy and Guidance                                                                                                          | Relevance to the Assessment |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Options and opportunities for marine fisheries mitigation associated with windfarms (Blyth-Skyrme, 2010)                                           |                             |
| Fishing and Submarine Cables Working Together (International Cable Protection Committee, 2009)                                                     |                             |
| Offshore Wind Farms: Guidance Note for EIA in Respect of Food and Environmental Protection Act and Coast Protection Act Requirements (Cefas, 2004) |                             |

## 10.3 Consultation

933. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital (MD-SEDD), Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to commercial fisheries for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to commercial fisheries are provided in **Table 10.2**.
934. In addition to the Scoping Information Package consultation, the Applicant has undertaken ongoing engagement with commercial fisheries stakeholders throughout the development of the Bellrock Project. This has included regular project update meetings with the SFF and Scottish White Fish Producers Association (SWFPA) since March 2023, participation in the East Regional Commercial Fisheries Working Group, and engagement with the wider fishing industry through attendance at the Skippers Expo in 2024 and 2026. This ongoing engagement has included consultation both before and after changes to the Bellrock Project grid connection strategy (**Section 1.2 of Chapter 1: Introduction**), ensuring that commercial fisheries stakeholders were informed of project developments and provided opportunities to provide feedback.
935. Information from Horizon Watch<sup>38</sup> has also been used to support understanding of fishing activity and stakeholder interests within and around the Bellrock OfTDA Scoping Boundary. Details of these engagement activities are presented in **Table 10.2**.

<sup>38</sup> Horizon Watch is an information bulletin developed by Scottish Fishermen's Federation (SFF), designed to keep Scottish fishermen informed about upcoming subsea cable routes and installations. The Applicant utilised the service to seek information from fishers on their fishing activities within the OfTDA Area of Search.

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**Table 10.2: Consultation Relevant to Commercial Fisheries**

| Consultee | Date/Document                                                                     | Comment                                                                                                                                                         | How Comment is Addressed                                                                                                                                                                                 |
|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MD-SEDD   | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Do you agree with the approach to the study areas?</u></b><br>MD-SEDD agree with the local study area, regional study area and the cumulative study area. | Noted. For reference the local and regional study areas are presented in <b>Section 10.4.1</b> and the cumulative study area is presented in <b>Section 10.6.3</b> .                                     |
| MD-SEDD   | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Do you agree with the approach to the baseline?</u></b><br>MD-SEDD agree with the approach to the baseline for commercial fisheries.                      | Noted. For reference <b>Section 10.4</b> presents a summary of the baseline condition and outlines the data sources that will be used to characterise the baseline condition for the Bellrock OfTDA EIA. |
| MD-SEDD   | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Do you agree with the potential impacts for scoping in/out?</u></b><br>MD-SEDD agree with the potential impacts scoped in/out.                            | Noted. For reference the scoping assessment is presented in <b>Section 10.6</b> .                                                                                                                        |
| MD-SEDD   | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Do you agree with the identified receptors?</u></b><br>MD-SEDD agree with the identified receptors.                                                       | Noted. For reference the relevant commercial fisheries receptors are outlined in <b>Section 10.4.4</b> .                                                                                                 |
| MD-SEDD   | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Do you agree with the proposed approach to the impact assessment?</u></b><br>MD-SEDD agree with the proposed approach to the impact assessment.           | Noted. For reference the proposed approach to the impact assessment is presented in <b>Section 10.7</b> .                                                                                                |

| Consultee                                      | Date/Document                                                                                                                                                   | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | How Comment is Addressed                                                                                                                                                                                                                                          |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SFF and SWFPA Project Update Meetings          | 20 March 2023<br>1 August 2023<br>26 September 2023<br>16 January 2024<br>16 July 2024<br>5 November 2024<br>21 January 2025<br>15 July 2025<br>29 October 2025 | <p>Regular meetings have been held with the SFF and the SWFPA since March 2023 to provide updates on the Bellrock Project and provide opportunities for ongoing commercial fisheries engagement. Following confirmation of the revised grid connection strategy in April 2025 (<b>Section 1.2 of Chapter 1: Introduction</b>), two quarterly meetings have been held, one in July and one in October 2025 during which updates on the Bellrock OfTDA were provided.</p> <p>These updates included information on the revised grid connection strategy and associated increase in the Bellrock Project's export capacity from 1.2 gigawatts to 1.8 gigawatts, the ongoing consideration of subsea cable technologies (alternating current and direct current options), the requirement for OfSS(s), within the Bellrock WFDA, and OfRCS(s), and the ongoing site selection process. Stakeholders were informed of the proposed programme for the Bellrock OfTDA, including anticipated geophysical and benthic surveys, the proposed EIA and consenting programme, and opportunities for further engagement, including the virtual consultation event held in November 2025. Commercial fisheries stakeholders were also invited to provide input into the Bellrock OfTDA site selection process.</p> | Not applicable. The meetings form part of ongoing stakeholder engagement and are used to provide updates on the Bellrock Project. Commercial fisheries stakeholders were provided opportunities to discuss the Bellrock Project and provide input where relevant. |
| East Region Commercial Fisheries Working Group | 4 December 2024<br>7 May 2025<br>5 November 2025<br>27 May 2026                                                                                                 | <p>Project updates were provided to SFF and SWFPA, allowing queries and feedback from SFF/SWFPA.</p> <p>SFF discussed their position on FLOWW, confirming their withdrawal from the FLOWW Guidance (FLOWW, 2025).</p> <p>SFF requested the Applicant to consider the use of SFF's Horizon Watch to promote early engagement with fishers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | The Applicant issued the Bellrock OfTDA Scoping Boundary via SFF's Horizon Watch to allow early engagement with local fishers (see below).                                                                                                                        |



| Consultee     | Date/Document | Comment                                                                                                                                                                                                                                                                                                                         | How Comment is Addressed                                                                                                                                               |
|---------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horizon Watch | February 2026 | The Bellrock OFTDA Scoping Boundary was circulated to commercial fishers via SFF's Horizon Watch. Feedback received from local fishers provided information on the seasonal distribution of commercial fishing activity, operational fishing areas and fishing practices within and around the Bellrock OFTDA Scoping Boundary. | The information provided has been reviewed and will be used, where appropriate, to inform the commercial fisheries impact assessment in the Bellrock OFTDA EIA Report. |

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## 10.4 Existing Environment

### 10.4.1 Study Areas

936. The Bellrock OfTDA Scoping Boundary is located within the northern portion of the International Council for the Exploration of the Seas (ICES) Division 4b (central North Sea) statistical area; within UK exclusive economic zone waters. For the purpose of recording commercial fisheries landings, ICES Division 4b is divided into statistical rectangles, of which the Bellrock OfTDA Scoping Boundary overlaps with 42E7, 42E8, 42E9, 42F0, 43E7, 43E8, 43E9 and 43F0. For the purposes of this **Bellrock OfTDA Scoping Report**, the commercial fisheries local study area comprises these eight ICES rectangles (see **Figure 10.1 (Appendix A (Volume 1))**).
937. While the commercial fisheries local study area focuses on the Bellrock OfTDA Scoping Boundary overlap with ICES rectangles, a wider regional area will be considered for the assessment of displacement impacts within the Bellrock OfTDA EIA Report. It is proposed that the commercial fisheries regional study area will also include those ICES rectangles immediately adjacent to the commercial fisheries local study area, as indicated in **Figure 10.1 (Appendix A (Volume 1))**. Where appropriate, the assessment may also consider wider spatial scales relevant to particular fisheries, stocks, or fleet activities to ensure effects are assessed proportionately.
938. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA upon which the Marine Licence application will be based. The commercial fisheries local and regional study areas will be reviewed and updated, if required, for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4** in **Chapter 1: Introduction**).

### 10.4.2 Data and Information Sources

939. **Table 10.3** sets out the information and data sources which have been considered in the preparation of this Chapter, and will be considered within the Bellrock OfTDA EIA Report assessment where relevant matters are scoped in.

**Table 10.3: Summary of Key Data and Information Sources for Commercial Fisheries**

| Dataset                                                           | Year(s)      | Description                                                                                                                                                                                                          |
|-------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UK annual fisheries landings statistics                           | 2020 to 2024 | Fisheries landings data for registered fishing vessels landing to their home nation ports.                                                                                                                           |
| Source: Marine Management Organisation (MMO), 2025; various years | 2011 to 2019 | Note that the most recent landings data spanning 2020 to 2024 has been presented in this <b>Bellrock OfTDA Scoping Report</b> , but that longer term datasets will be analysed within the Bellrock OfTDA EIA Report. |

| Dataset                                                                                                                                                           | Year(s)                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UK Vessel Monitoring System (VMS) data<br>Source: MMO, 2023                                                                                                       | 2020                      | VMS data for fishing vessels greater than 15 m in length.<br><br>Note that UK vessels $\geq 12$ m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for $\geq 15$ m vessels only. VMS data sourced from MMO displays the first sales value (£) of catches.<br><br>Note that the most recent data has been presented in this <b>Bellrock OfTDA Scoping Report</b> , but that longer term datasets will be analysed within the Bellrock OfTDA EIA Report. |
| European Union (EU) annual fisheries landings statistics<br>Source: Scientific, Technical and Economic Committee for Fisheries EU Data Collection Framework, 2020 | 2004 to 2016              | Fisheries landings data for registered fishing vessels landing to their home nation ports.                                                                                                                                                                                                                                                                                                                                                                                                    |
| EU VMS data<br>Source: ICES, 2022                                                                                                                                 | 2016 to 2020              | VMS data for fishing vessels greater than 12 m in length.<br><br>VMS data sourced from ICES displays the surface swept area ratio of catches by different gear types and covers EU (including UK) registered vessels 12 m and over in length. Surface swept area ratio indicates the number of times in an annual period that a demersal fishing gear makes contact with (or sweeps) the seabed surface. Surface swept area ratio provides a proxy for fishing intensity.                     |
| Marine Directorate fisheries datasets<br>Source: National Marine Plan Interactive (NMPi), various publication dates                                               | Various temporal coverage | Fisheries datasets available from the NMPi, including data and heatmaps for activity by small fishing boats (<12m in length) and areas where razor clam fishing is authorised for scientific purposes.                                                                                                                                                                                                                                                                                        |
| Fishing vessel route density<br>Source: European Marine Observation and Data Network, 2026a                                                                       | 2019 to 2025              | Fishing vessel route density and vessel density, based on vessel Automatic Identification System (AIS) positional data. AIS is required to be fitted on fishing vessels $\geq 15$ m length.<br><br>Note that the most recent data has been presented in this <b>Bellrock OfTDA Scoping Report</b> , but that longer term datasets will be analysed within the Bellrock OfTDA EIA Report.                                                                                                      |
| Fishing intensity<br>Source: European Marine Observation and Data Network, 2026b                                                                                  | 2019 to 2022              | The spatial distribution of average annual fishing effort (mW fishing hours) from 2019-2022 for mobile bottom contacting fishing gear.                                                                                                                                                                                                                                                                                                                                                        |
| Fisheries Sensitivity Mapping and Displacement Modelling (FiSMaDiM)<br>Source: Cefas, 2025                                                                        | 2012 to 2021              | FiSMaDiM of AIS and VMS data to indicate fishing effort (hours) number of vessels and sensitivity index for the period 2012-2021.                                                                                                                                                                                                                                                                                                                                                             |
| Marine Directorate fisheries surveillance data                                                                                                                    | Subject to data request   | Surveillance data indicating fishing vessel nationality and gear type for actively fishing vessels.                                                                                                                                                                                                                                                                                                                                                                                           |

| Dataset                                                                                                                                    | Year(s)                   | Description                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sectoral Marine Plan<br>Source: Scottish Government, 2020                                                                                  | Various temporal coverage | Description of regional commercial fisheries activity.                                                                                                               |
| Fisheries activity mapping in the North and East Coast Regional Inshore Fisheries Group (RIFG) area<br>Source: Shelmerdine and Mouat, 2021 | Various temporal coverage | Report mapping commercial fishing activity and critical habitats of 22 key species within 12 nm of the coast in the North and East Coast RIFG area.                  |
| Important fishing grounds identified through industry consultation<br>Source: Horizon Watch                                                | Various temporal coverage | Mapping of important fishing grounds identified through Horizon Watch industry consultation, providing spatial evidence of areas of commercial fisheries importance. |

940. It should be noted that the quantitative datasets identified in **Table 10.3** may not capture all commercial fisheries activity in the commercial fisheries study areas. For instance, the VMS datasets only cover vessels  $\geq 12$  m (ICES data) or  $\geq 15$  m (MMO data) in length. Note that UK vessels  $\geq 12$  m in length have VMS on board, however, to date, the MMO provide amalgamated VMS datasets for  $\geq 15$  m vessels only.
941. However, in addition to VMS data, other published data does provide a useful insight into commercial fisheries activity undertaken in inshore areas and by smaller vessels not captured by VMS data (e.g. NMPi inshore fisheries mapping and heatmaps for small fishing boats,  $< 12$  m in length) and will be utilised where appropriate.
942. Consultation with representatives of fishermen's associations and organisations will be undertaken to seek to corroborate the findings of desk-based baseline data analysis and to provide insight into specific fishing grounds and activity of any vessels active in the commercial fisheries study areas. Vessel plotter data will be sought from the SFF and SWFPA, noting it indicates the location of member vessel fishing activity. Any fishing activity data obtained through Horizon Watch will also be utilised to inform the assessment. Consultation will also be important to inform gear specifications for vessels active in the commercial fisheries study areas, which will allow a full understanding of how different vessels and different gear configurations may be affected.
943. Variations and trends in commercial fisheries activity are an important aspect of the baseline assessment and is the principal reason for considering up to five years of key baseline data, and longer timeseries where possible. Available landings data spans the period of the COVID-19 pandemic, which is understood to have temporarily affected market demand and supply chains. Furthermore, changes in fishing patterns resulting from the withdrawal of the UK from the EU would also be reflected in data sets for 2021 onwards. Long term environmental and climatic changes may be expected to be detectable within the five-year time series but may benefit from longer-term analysis dependant on the target species. Inclusion of such longer-term analysis will be informed by stakeholder consultation.

### 10.4.3 Commercial Fisheries in the Local and Regional Study Areas

944. An understanding of the commercial fisheries baseline environment within the commercial fisheries study areas has been developed from utilisation of the available literature and data sources presented in **Section 10.4.2**. This section includes a description of the commercial fish targeted by vessels registered in UK, Norway, Sweden, Denmark and Ireland and landed into UK ports (for all vessels) and non-UK ports (for UK vessels only). These countries have been included as they are the only vessel nationalities recorded in the MMO landings statistics as landing into UK ports within the study areas. It is recognised that vessels registered to other countries may also operate within these waters but land their catch outside the UK; however, this activity is not captured within the MMO landings dataset used for this assessment.

#### 10.4.3.1 Local Study Area

945. Landings from the commercial fisheries local study area by UK registered vessels had an annual average landings value of approximately £11.9 million across the years 2020 to 2024 (MMO, 2025), with landings values peaking in 2022 at £14.0 million and being at their lowest in 2024 at £9.5 million. Over the same period, the annual average weight of landings from the commercial fisheries local study area was 8,000 tonnes, peaking at approximately 10,000 tonnes in 2022. The 2022 peak in landed value and weight is attributable to peaks in landings by vessels deploying demersal and pelagic trawl gears within the local study area.

946. Landings of shellfish species predominated the catch from the commercial fisheries local study area, accounting for 56% of the total landed value and 22% of landed weight (based on 2020-2024 data from MMO, 2025). Landings of pelagic fish species accounted for 19% of the total landed value (and 43% of the weight), and demersal species for 25% of the total landed value (and 35% of the weight). Scottish vessels were responsible for the majority (89%) of landings, with landings also being made by vessels registered in England (9%) and Northern Ireland (2%). Landings data sourced from the MMO also indicates lesser landings from the local study area by fishing vessels registered in Denmark. The main landing ports local to the Bellrock OfTDA include (but are not limited to) Peterhead, Arbroath, Fraserburgh and Montrose.

947. **Plate 10.1** and **Plate 10.2** (source: MMO, 2025) show the top 12 species landed from the commercial fisheries local study area by value and weight respectively, from 2020 to 2024 (MMO, 2025). The key species landed are haddock *Melanogrammus aeglefinus*, lobsters *Homarus Gammarus*, herring *Clupea harengus*, Nephrops *Nephrops norvegicus*, king scallops *Pecten maximus*, and brown crabs *Cancer pagurus*.

948. First sales value and weight of haddock have been variable across the 2020 to 2024 period, notably increasing from 2020 to 2023 before declining in 2024, with an annual landed value of £3.9 million in 2023 and £1.0 million in 2024. Nephrops landings have fluctuated over the 2020 to 2024 period, with a peak in annual landed value in 2022 at £2.1 million and the lowest annual landings value in 2024 of £1.0 million. Landings of Nephrops are almost exclusively from ICES rectangle 42F0, with lesser landings from 42E7 and 43F0.

949. Over the five-year period analysed, herring landings were recorded in significant quantities in 2020 and 2022 in particular. Landings of herring are primarily from ICES rectangle 43E9. The significant annual variation in landings of herring represent patterns typical for pelagic species that swim in

fast moving shoals and may not be specifically linked to areas or habitats when caught in the water column.

950. Landings of king scallop, brown crab and lobster are primarily associated with ICES rectangles 42E7, 42E8 and 43E8. Landed values and weights of these shellfish species have fluctuated across the 2020 to 2024 period, with the landed value of brown crab and lobster showing an annual increase across the period, reflecting growing market price.
951. **Plate 10.3** (source: MMO, 2025) shows the annual landed value over the same period from the commercial fisheries local study area by gear type. Demersal otter trawls are responsible for the highest value of catch landed (approx. £4.0 million per annum) with key target species of haddock and Nephrops; and pots and traps account for the second highest value (approx. £3.8 million per annum) with key target species of lobster and brown crab.
952. A handline, or 'jigging' fishery targeting mackerel *Scomber scombrus* is present in the local study area, in ICES rectangles 42E7 (annual average landed value is £9,000) and 43E8 (£34,000). Relatively higher levels of handline activity are present in the regional study area, in particular along the southern coastline of the Moray Firth.
953. Landing statistics indicate that 70% of landings by value from the commercial fisheries local study area are made by vessels over 15 m in length whilst 19% are attributed to vessels of under 10 m in length, primarily smaller potting vessels.
954. Landing trends per month will be analysed within the Bellrock OfTDA EIA Report for individual species at both an ICES rectangle level, and by port of landing to identify which fleet and fishery operate at specific times of the year.

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Plate 10.1: Top 12 Species by Value (First Sales in Great British Pound (GBP)) from 2020 to 2024 Landed from the Commercial Fisheries Local Study Area for Vessels Registered in UK Landing into UK Ports

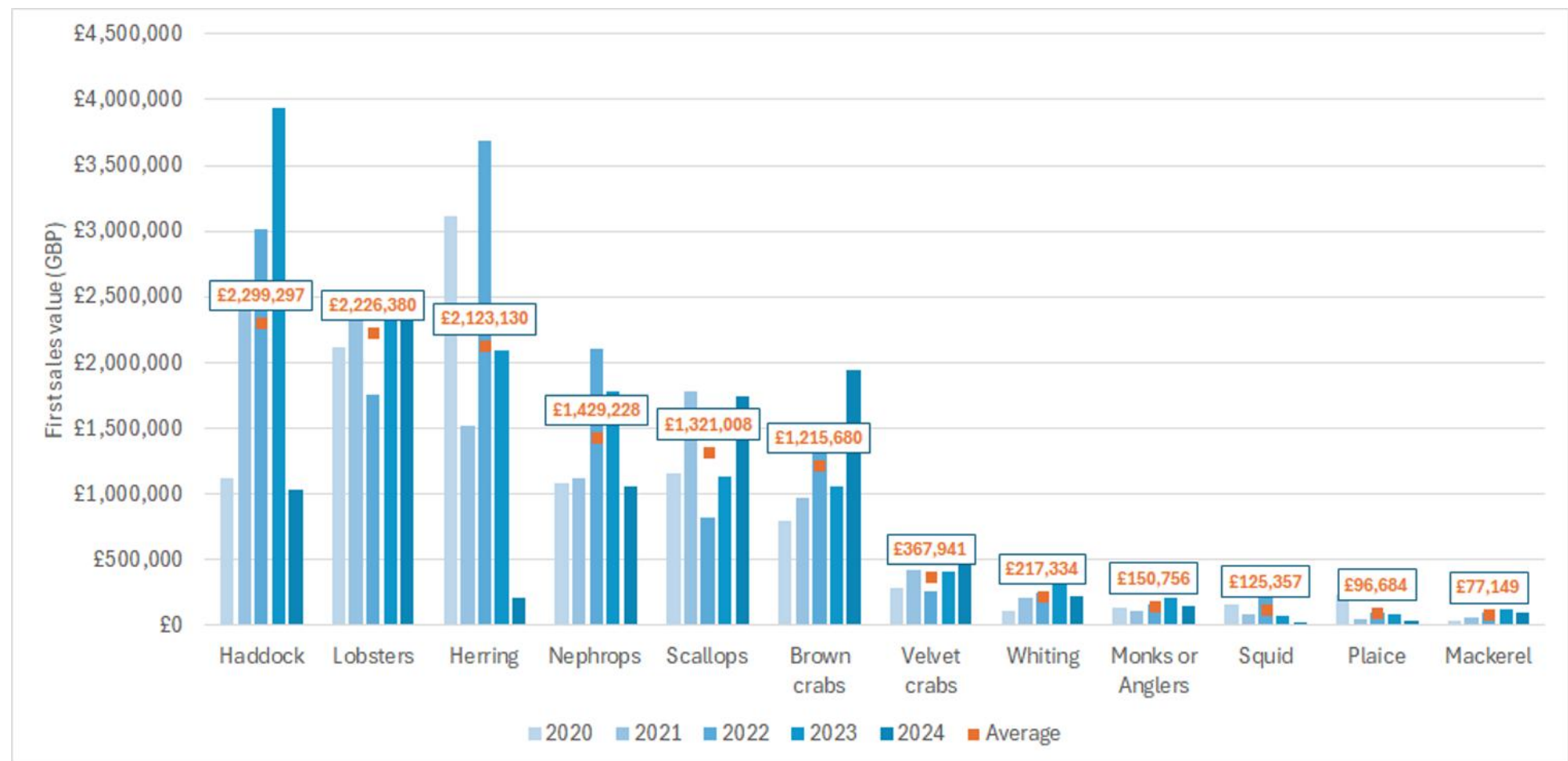


Plate 10.2: Top 12 Species by Weight (Tonnes) from 2020 to 2024 Landed from the Commercial Fisheries Local Study Area for Vessels Registered in UK, Landing into UK Ports

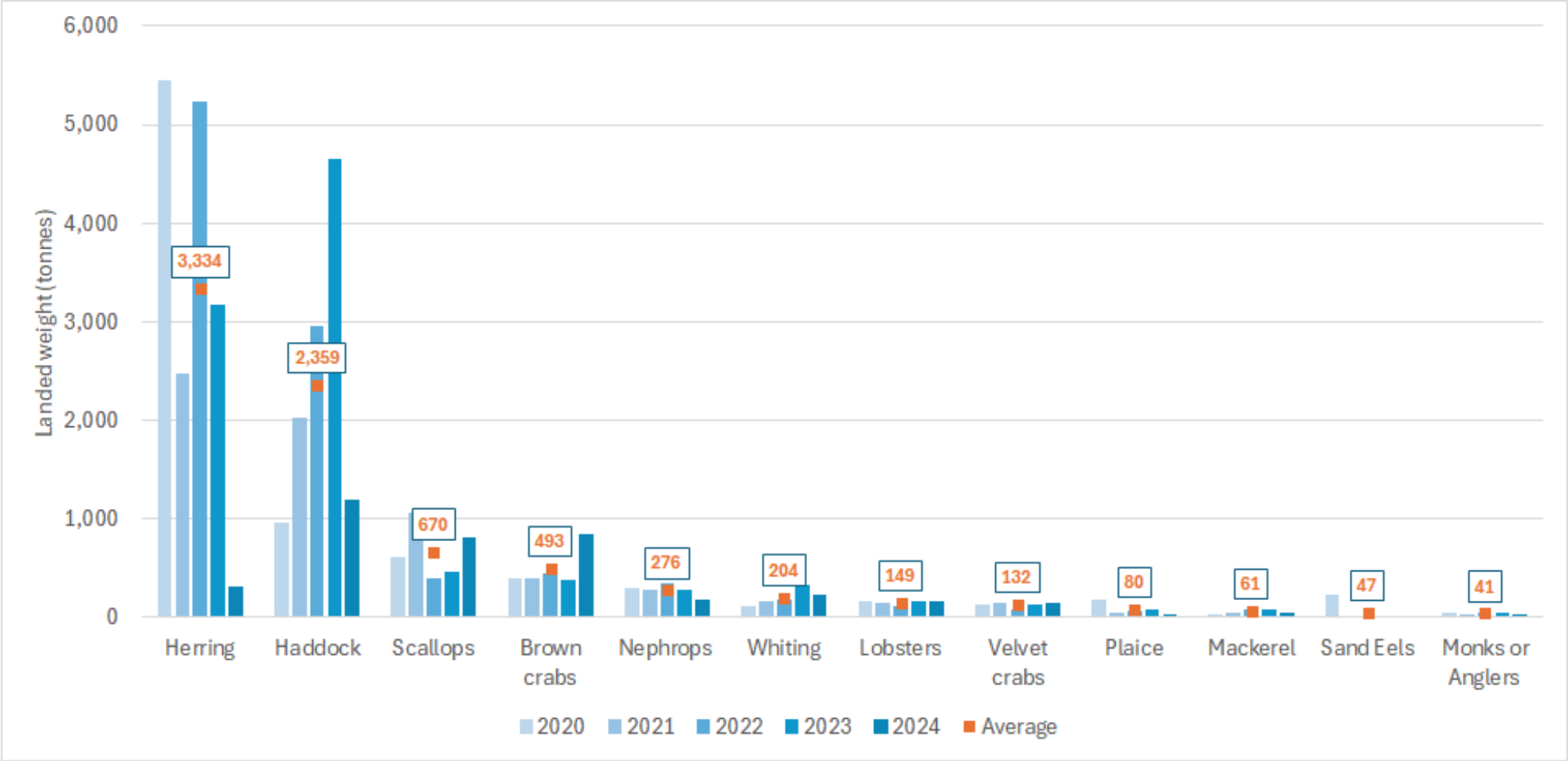
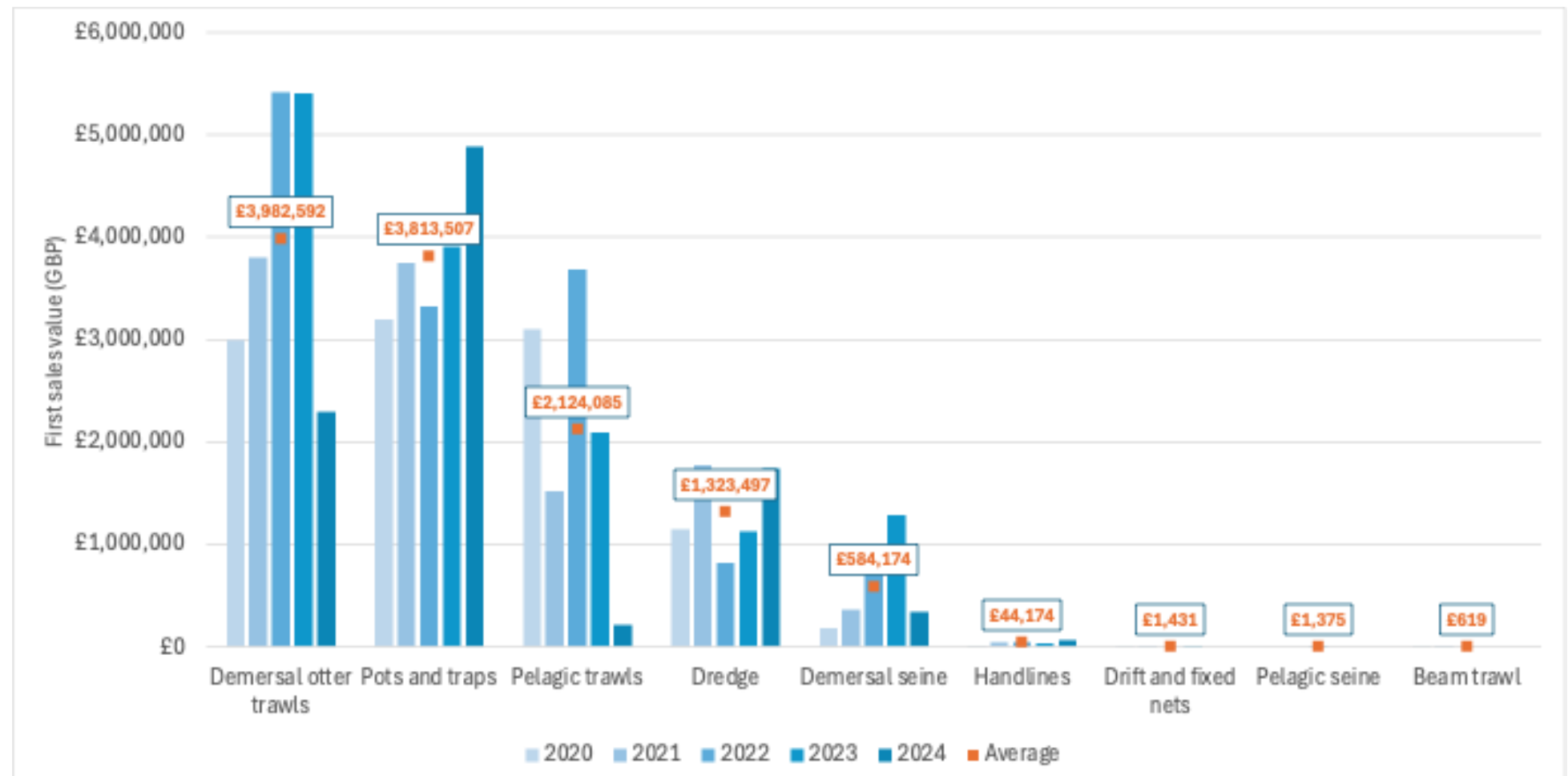


Plate 10.3: Landed Value from 2020 To 2024 (First Sales in GBP) from the Commercial Fisheries Local Study Area by Gear Type for Vessels Registered in UK, Landing into UK Ports



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### 10.4.3.2 Regional Study Area

955. **Plate 10.4** (source: MMO, 2025) shows landed value from the commercial fisheries regional study area from 2020 to 2024. The annual average landed value from the commercial fisheries regional study area over this period was £45.1 million. The highest value landings were associated with ICES rectangles 41E7 and 44E7 to 44F0.
956. **Plate 10.5** and **Plate 10.6** show the top 12 species landed from the commercial fisheries regional study area by value and weight respectively, from 2020 to 2024 (MMO, 2025). **Plate 10.7** shows the landed value over the same period from the commercial fisheries regional study area by fishing gear type. Key target species and active gear types are broadly aligned with those in the commercial fisheries local study area, with landings dominated by demersal trawls used to target Nephrops, haddock and mixed demersal fish species and landings attributed to pelagic trawl gear used to target herring. Within the commercial fisheries regional study area, landings data also indicates the presence of vessels deploying pots and traps to target lobsters and brown crabs, and dredge gear to target king scallop.
957. A razor clam *Ensis siliqua* fishery is also present in ICES rectangle 41E7. As noted in **Table 10.1**, it is illegal to fish for razor clam unless for scientific purposes or by hand in tidal waters (subject to a maximum of 30 clams per day). However, since 2018, the Marine Directorate has authorised trials for electrofishing of razor clam in set locations around Scotland (including the Firth of Forth in ICES rectangle 41E7) by 28 vessels with a catch limit (450 kg/day), effort limit (110 days at sea per year) and gear restrictions.
958. Landings data for non-UK vessels catching in the commercial fisheries regional study area and landing into UK ports indicates the potential for fishing activity by Danish, Norwegian, and to a lesser extent Dutch, vessels deploying demersal trawls to target mixed demersal species. Landings data indicates Danish pelagic trawl activity in 2018 only, associated with a landing of sandeel *Ammodytes marinus*. It is noted that the Sandeel (Prohibition of Fishing) (Scotland) Order 2024 came into force on 26 March 2024, which prohibits fishing for sandeel within Scottish seas out to 200 nautical miles (nm).

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**Plate 10.4:** Landed Value (First Sales in GBP) from 2020 to 2024 by ICES Rectangle from the Commercial Fisheries Regional Study Area (with Local Study Area Highlighted) for Vessels Registered in UK, Landing into UK Ports

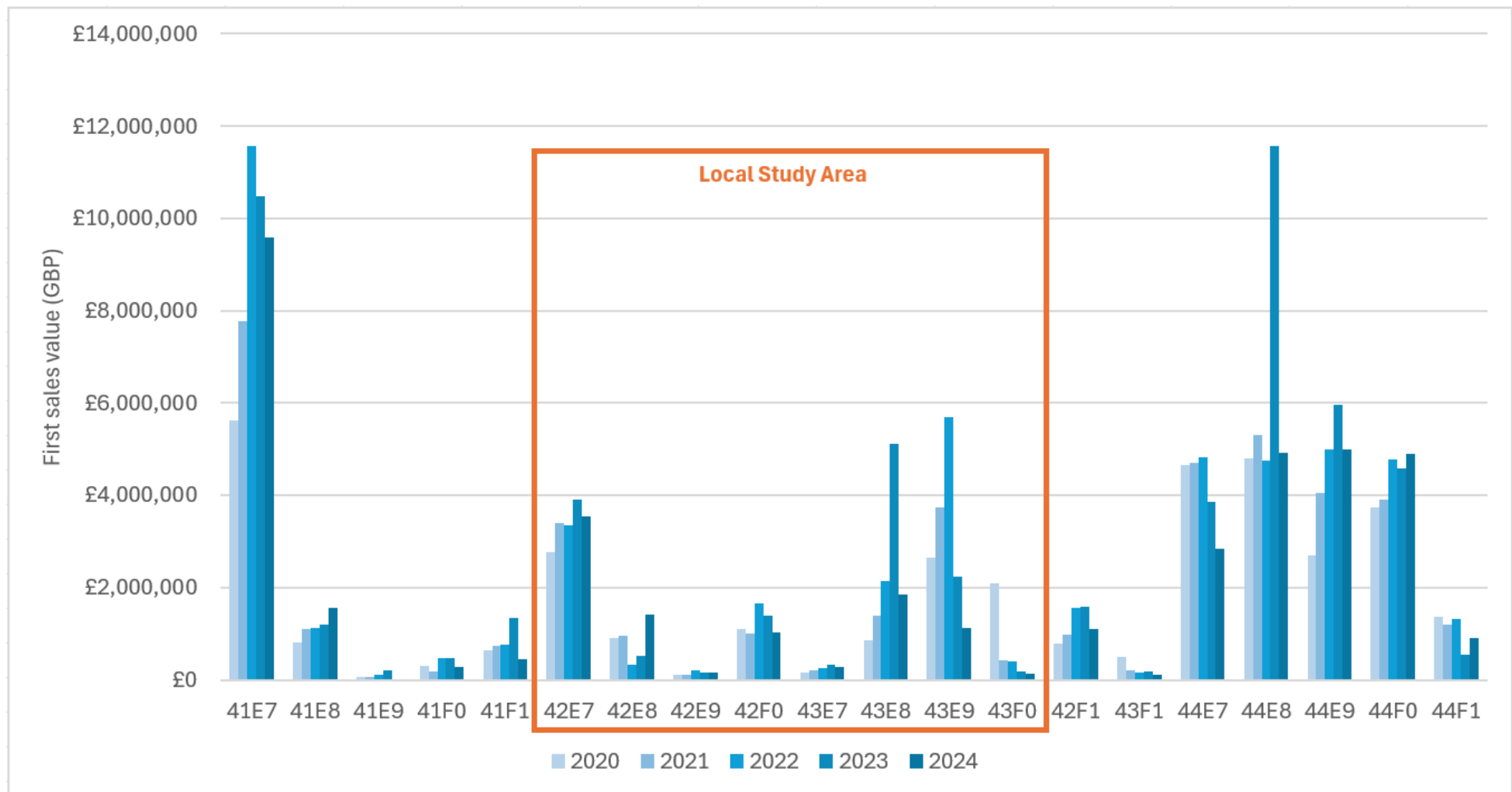


**Plate 10.5: Top 12 Species by Value (First Sales in GBP) from 2020 to 2024 Landed from the Commercial Fisheries Regional Study Area for Vessels Registered in UK, Landing into UK Ports**

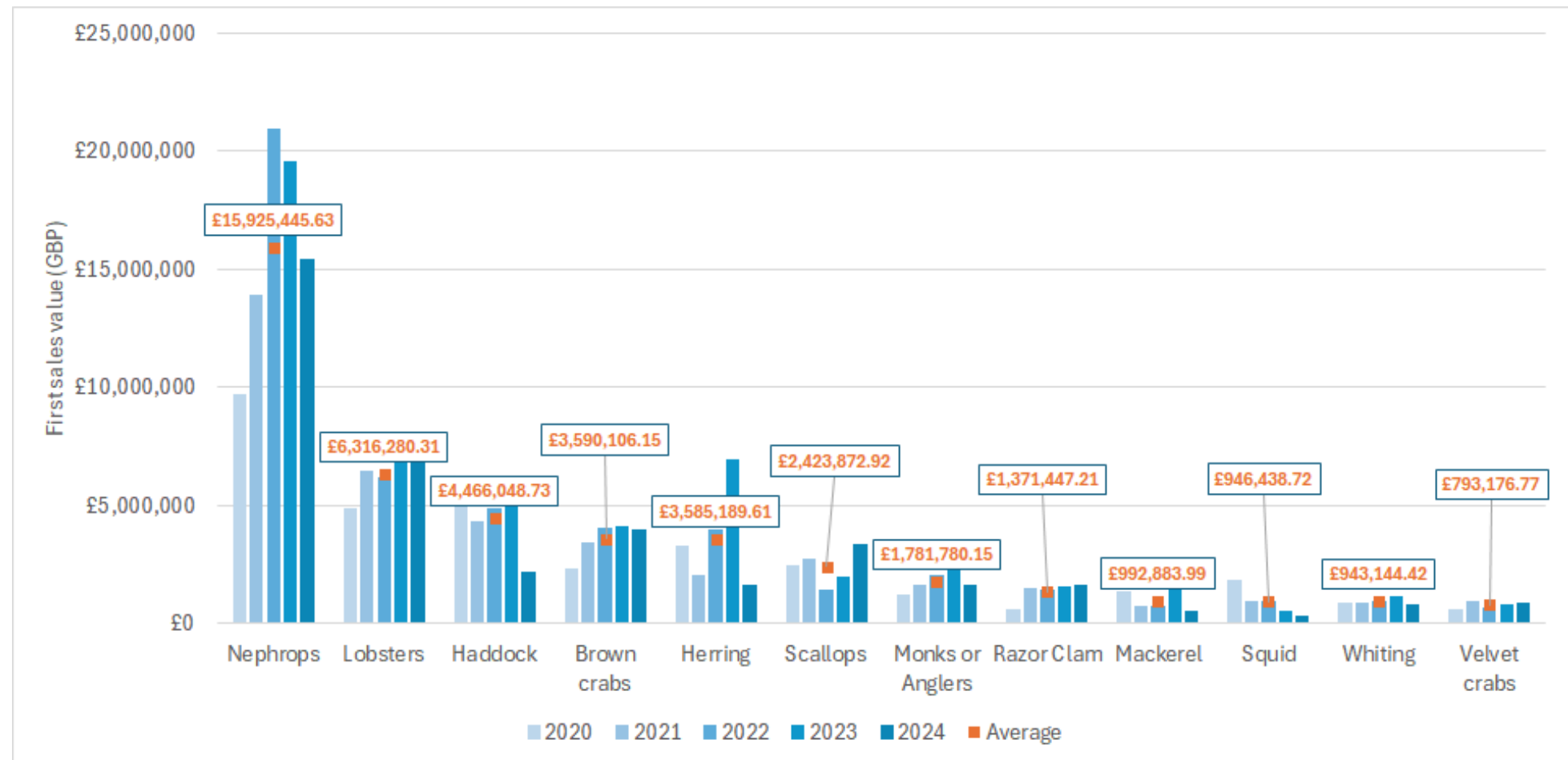




**Plate 10.6: Top 12 Species by Weight (Tonnes) from 2020 to 2024 Landed from the Commercial Fisheries Regional Study Area for Vessels Registered in UK, Landing into UK Ports**

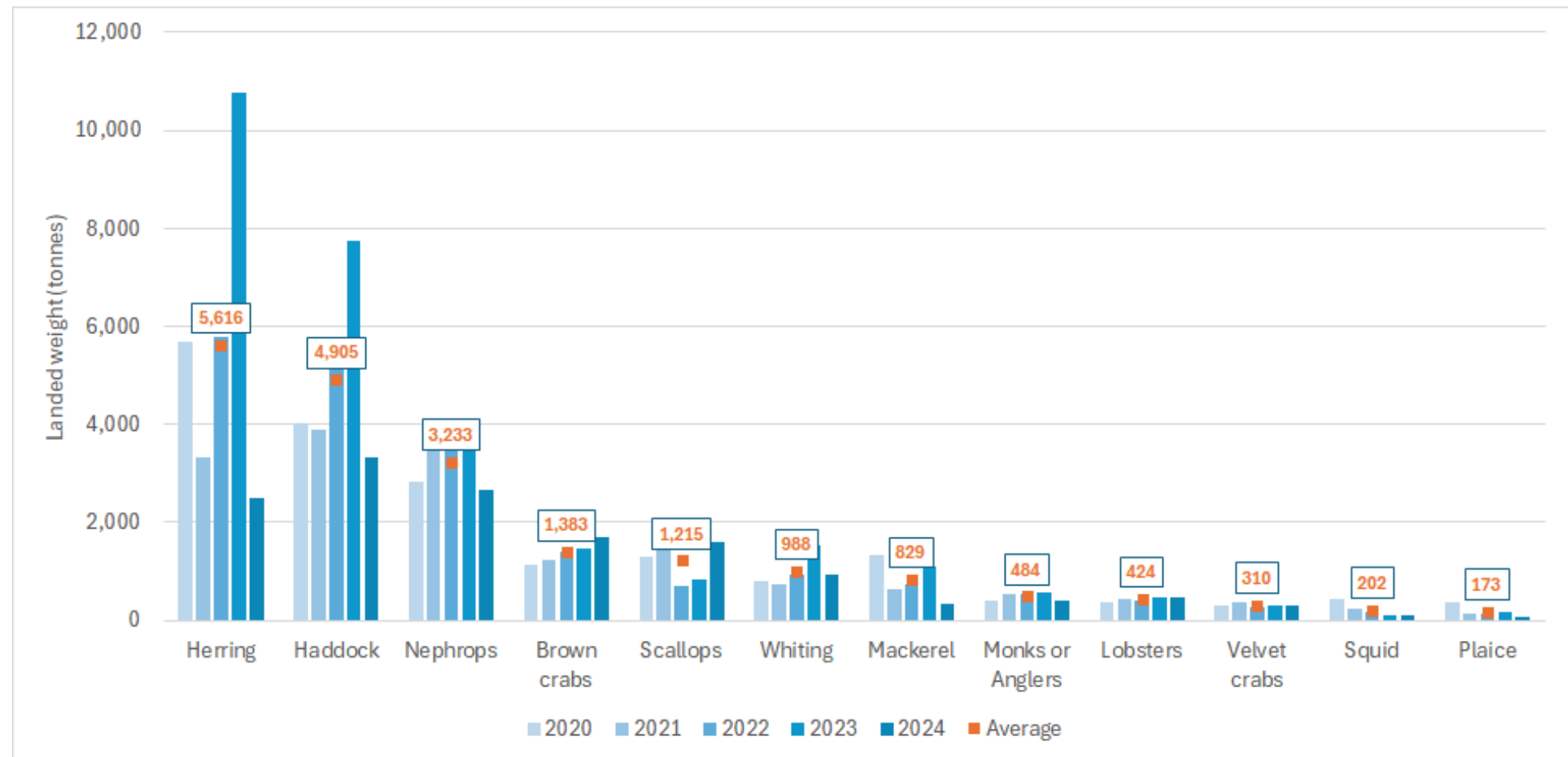
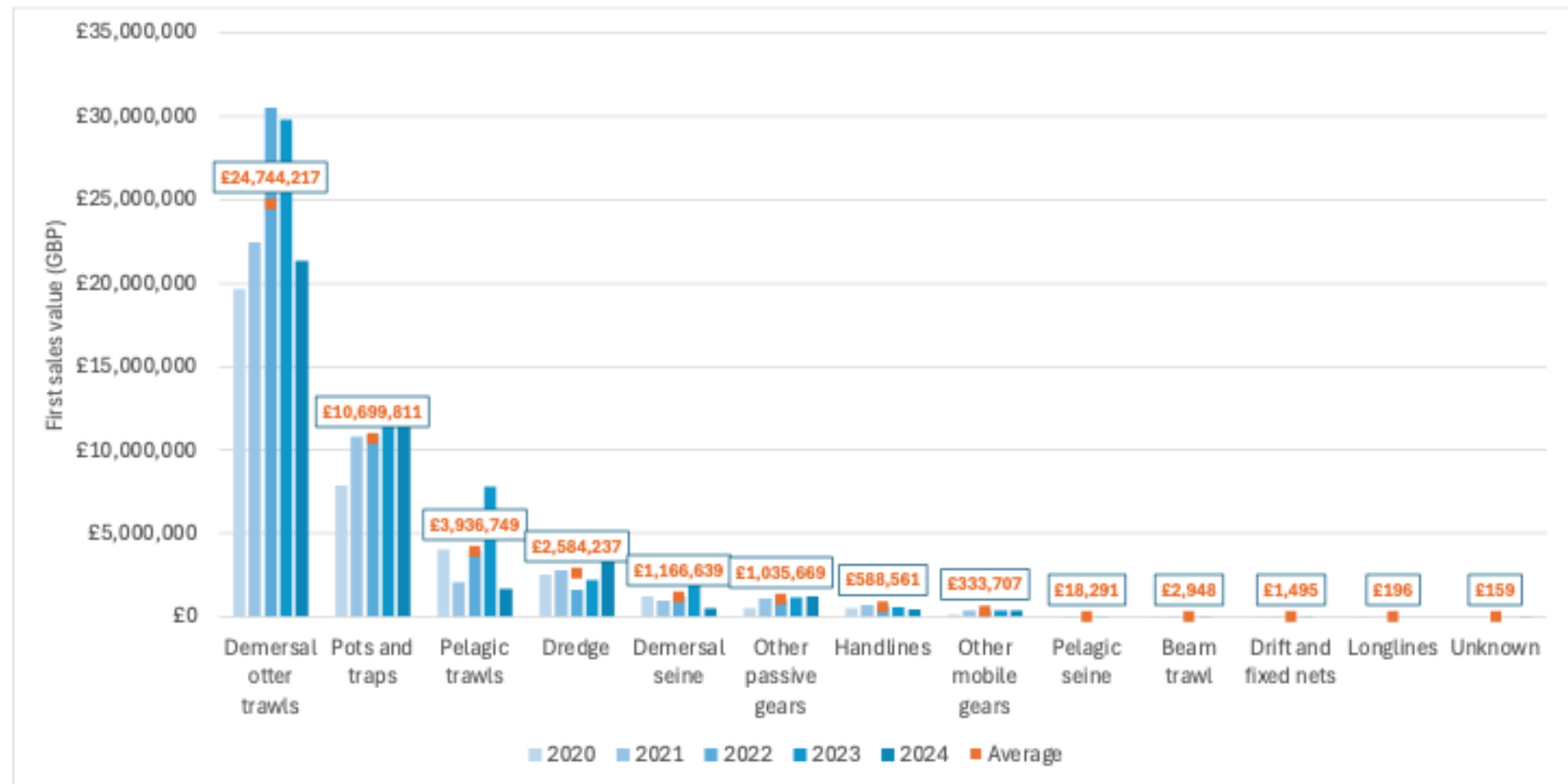


**Plate 10.7: Landed Value from 2020 To 2024 (First Sales in GBP) from the Commercial Fisheries Regional Study Area by Gear Type for Vessels Registered in UK, Landing into UK Ports**



959. In addition to landings data, spatial data describing fishing activity is available, including AIS fishing vessel route density data. AIS is required to be fitted on fishing vessels  $\geq 15$  m length. The data presented in **Figure 10.2 (Appendix A (Volume 1))** is specific to fishing vessels and indicates the route density per square kilometre during 2022. This data does not distinguish between transiting vessels and active fishing but does provide a useful source to corroborate fishing grounds. Data indicates fishing vessel presence within the commercial fisheries local and regional study areas, but relatively limited activity (transiting or active fishing) within the Bellrock OfTDA Scoping Boundary with the exception of the nearshore environment, inside of the 6 nm limit, at the northern and southern boundaries of the Scoping Boundary where it makes landfall.
960. FiSMaDiM spatial data sourced from Cefas has been used to map fishing activity for the UK and EU fleet and combines VMS data for all vessels 12 m and over in length with AIS data for all vessels 15 m and over in length. The FiSMaDiM dataset has been analysed using average annual values across the relevant reporting periods and is presented in **Appendix A (Volume 1)** for the principal gear types operating within the commercial fisheries study areas. **Figure 10.3 (Appendix A (Volume 1))** presents demersal trawl activity, indicating relatively low levels of activity across the Bellrock OfTDA Scoping Boundary, with activity focused across its easternmost extent offshore and its westernmost extent, and little to no activity across the central portion of the Bellrock OfTDA Scoping Boundary. The data also indicate that the easternmost extent of the Bellrock OfTDA Scoping Boundary is adjacent to, and slightly overlaps, the well-defined Nephrops grounds known as the Devil's Hole.
961. **Figure 10.4 (Appendix A (Volume 1))** presents demersal seine activity from the FiSMaDiM dataset. This indicates very low levels of demersal seine activity across the Bellrock OfTDA Scoping Boundary, with only low and patchy levels of effort across its eastern extent.
962. **Figure 10.5 (Appendix A (Volume 1))** presents dredge activity from the FiSMaDiM dataset. Dredge activity is shown across the western portion of the Bellrock OfTDA Scoping Boundary, both inside and outside the 12 nm limit, with hotspots of activity located both within and outside the Scoping Boundary and within ICES rectangles 42E7, 42E8 and 43E8.
963. **Figure 10.6 (Appendix A (Volume 1))** presents pelagic fishing activity from the FiSMaDiM dataset. This indicates areas of pelagic activity within the commercial fisheries local and regional study areas, with some activity also present within the central portion of the Bellrock OfTDA Scoping Boundary in ICES rectangle 43E9.
964. **Figure 10.7 (Appendix A (Volume 1))** presents potting activity from the FiSMaDiM dataset. This shows limited activity, reflecting that the majority of potting vessels are not represented within the dataset (refer to **Section 10.4.2**).
965. The mapped spatial data presented in **Appendix A (Volume 1)** is aligned with that presented in the University of the Highlands and Islands study, which mapped fisheries activity and critical habitats of key species within 12 nm of the coast in the North and East Coast RIFG area (Shelmerdine and Mouat, 2021), with which the commercial fisheries local and regional study areas overlap.

#### 10.4.4 Commercial Fisheries Receptors

966. The key commercial fisheries receptors within the commercial fisheries study areas are identified as the following fishing fleets:
- UK demersal otter trawlers<sup>39</sup> targeting Nephrops, haddock and mixed demersal fish species;
  - UK demersal seine targeting haddock, whiting and mixed demersal fish species;
  - UK pelagic trawlers targeting herring and mackerel;
  - UK potters targeting lobster and brown crab;
  - UK scallop dredge targeting king scallop;
  - UK handlining vessels targeting mackerel;
  - Non-UK (Norwegian and Danish) demersal trawlers targeting mixed demersal fish species; and
  - Non-UK pelagic trawlers and purse seine targeting mackerel and herring.
967. A razor clam fishery is also present in ICES rectangle 41E7, which is spatially limited and does not overlap the Bellrock OfTDA Scoping Boundary. On this basis and in the absence of any impact pathway, it is not proposed that this fishery is taken forward as a receptor for EIA purposes.

### 10.5 Potential Impacts

968. The following potential impacts on commercial fisheries are considered in this scoping exercise:
- Reduction in access to, or exclusion from established fishing grounds within the Bellrock OfTDA during construction, O&M, and decommissioning;
  - Displacement leading to gear conflict and increased fishing pressure on adjacent grounds during construction, O&M, and decommissioning;
  - Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity during construction, O&M, and decommissioning;
  - Increased vessel traffic associated with the Bellrock OfTDA within fishing grounds leading to interference with fishing activity during construction, O&M, and decommissioning;
  - Additional steaming to alternative fishing grounds for vessels that would otherwise transit through the Bellrock OfTDA during construction, O&M, and decommissioning; and
  - Physical presence of infrastructure and potential exposure of that infrastructure leading to gear snagging during the O&M phase.

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<sup>39</sup> Where appropriate, the UK demersal otter trawl (TR) fleet may be further separated into the following specific receptors: TR1: Whitefish - UK demersal otter trawl targeting whitefish and using gear type TR1 (i.e. codend mesh size range of 100 mm and above, and TR2: Nephrops - UK demersal otter trawl targeting Nephrops and using gear type TR2 (i.e. codend mesh size of 70 - 99 mm).

969. **Chapter 7: Fish and Shellfish Ecology** considers impacts on the ecology of fish and shellfish, including species of commercial interest.
970. **Chapter 11: Shipping and Navigation** considers impacts on the navigational safety aspects of fishing activity.
971. Safety concerns around fishing gear snagging are noted in **Chapter 19: Major Accidents and Disasters** and will be considered in the major accidents and disasters chapter of the Bellrock OfTDA EIA Report.

### 10.5.1 Embedded Mitigation Measures

972. Embedded mitigation has been identified, as presented in **Table 10.4** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
973. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 10.4: Embedded Mitigation Measures Relevant to Commercial Fisheries**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Relevance to Assessment                                                                                                                                                                                                                                                                                                                   | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                           |                 |
| ✓                          | X   | X               | Where seabed preparation is required (e.g. sand wave levelling), methods and equipment that have been designed to minimise the potential for sediment suspension and dispersal will be adopted as far as is reasonably practicable.                                                                                                                                                                                                                                                                                                        | Use of seabed preparation methods and equipment that minimise sediment suspension and dispersal will reduce the extent and duration of sediment plumes and associated sediment deposition. This will minimise potential effects on commercially important fish and shellfish species that support fishing activities.                     | Primary         |
| X                          | ✓   | X               | Offshore export cables and interconnector cable(s) will be installed with a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to avoid the need for external cable protection. Cable protection will only be used where adequate burial cannot be achieved and will be minimised so far as reasonably practicable. The requirement for, and extent of, any cable protection will be determined through a post-consent Cable Burial Risk Assessment (CBRA) (see row below relating to the CBRA). | Maximising cable burial and minimising the use of external cable protection will reduce the extent of external cable protection that could interact with fishing gear. This will minimise potential gear snagging risks and reduce constraints on commercial fishing activity.                                                            | Primary         |
| X                          | ✓   | X               | Scour protection (e.g. concrete mattresses, rock placement, grout bags, artificial frond mats), will prevent scour during the operational life of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                       | Implementation of scour protection will maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the potential for ongoing seabed disturbance during O&M. This will help reduce risks to fishing activity associated with exposure or deterioration of the Bellrock Offshore Transmission Infrastructure. | Primary         |
| X                          | ✓   | X               | Where an alternating current design is used, armoured 3-phase single core (trefoil arrangement) high voltage submarine cables will be used, to minimise both electric and magnetic fields. Offshore export cables and interconnector cable(s) will be buried or protected, with                                                                                                                                                                                                                                                            | Use of cable designs that minimise electromagnetic fields and thermal emissions, together with maximised cable burial, will reduce the extent of seabed disturbance. This will minimise potential effects on commercially                                                                                                                 | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                   | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                              | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                      |                 |
|                            |     |                 | a target burial depth of 1 to 3.5 m (if burial is required and where ground conditions allow), to reduce the impact of electromagnetic fields and thermal emissions, and to minimise disturbance. Cable trench width may also vary to accommodate greater burial depths (subject to the conclusions of a CBRA), further minimising disturbance to habitats and species.       | important fish and shellfish species and support the sustainability of fisheries resources.                                                                                                                                                                                                                                                                          |                 |
| ✓                          | ✓   | X               | A detailed CBRA will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed.        | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will minimise cable exposure and reduce potential interactions between the Bellrock Offshore Transmission Infrastructure and fishing gear.                      | Primary         |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                                                         | Periodic geophysical surveys and remedial works, where required, will help maintain cable burial and minimise the occurrence of exposed offshore export cables and interconnector cable(s) on the seabed. This will reduce potential snagging risks for fishing gear and minimise disruption to commercial fishing activities.                                       | Primary         |
| ✓                          | ✓   | ✓               | <p>An application will be made post-consent for Safety Zones including:</p> <ul style="list-style-type: none"> <li>An application for Safety Zones for up to 500 m around each OfSS and OfRCS during its construction;</li> <li>An application for Safety Zones for up to 50 m around each OfSS and OfRCS when construction works have been completed but prior to</li> </ul> | The establishment of Safety Zones around the Bellrock Offshore Transmission Infrastructure during construction, major maintenance and decommissioning will provide a managed area for safe working operations. Clear definition and communication of these areas will help minimise navigational risks and support safe management of commercial fishing activities. | Primary         |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevance to Assessment                                                                                                                                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                             |                 |
|                            |     |                 | <p>commissioning, or where construction works are partially completed and a construction vessel is not present;</p> <ul style="list-style-type: none"> <li>▪ An application for Safety Zones for up to 500 m around each OfSS and OfRCS during major maintenance during operation;</li> <li>▪ An application (prior to commencement of decommissioning) for Safety Zones for up to 500 m around each OfSS and OfRCS during its decommissioning; and</li> <li>▪ Consideration will also be given to an application for up to 500 m operational Safety Zones throughout the O&amp;M phase.</li> </ul> |                                                                                                                                                                                                                                                                                                                             |                 |
| ✓                          | ✓   | X               | <p>Development of, and adherence to, a Seabed Obstruction Mitigation Plan.</p> <p>The Seabed Obstruction Mitigation Plan will set out any potential risks to legitimate sea users and identify measures to reduce these risks.</p>                                                                                                                                                                                                                                                                                                                                                                  | Implementation of a Seabed Obstruction Mitigation Plan will identify and manage potential risks to fishing vessels. This will help minimise disruption to fishing operations and reduce the likelihood of equipment interactions with the Bellrock Offshore Transmission Infrastructure.                                    | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Development of and adherence to a Cable Plan (CaP).</p> <p>The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.</p>                                                                                                                                                                                                                                                 | Implementation of the CaP will ensure cable installation, burial and protection measures are designed and managed to minimise seabed disruption and interactions with fishing activities. Post-installation monitoring will support the identification and management of any issues that could affect commercial fisheries. | Tertiary        |
| ✓                          | ✓   | X               | <p>Any damage, destruction, or decay of offshore export cables and/or interconnector cable(s) will be notified to the Maritime and Coastguard Agency (MCA), Northern</p>                                                                                                                                                                                                                                                                                                                                                                                                                            | Timely notification of any damage, destruction or decay of offshore export cables and interconnector cable(s) will ensure that relevant stakeholders are informed of potential hazards.                                                                                                                                     | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                        | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                |                 |
|                            |     |                 | Lighthouse Board (NLB), Kingfisher, and the United Kingdom Hydrographic Office.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | This will support navigational awareness and reduce risks to commercial fishing vessels and gear.                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | ✓               | <p>Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&amp;M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> | Implementation of the VMNSP will support the management of vessel movements throughout construction, O&M, and decommissioning, reducing the potential for interactions between project vessels and fishing activity. Adoption of defined transit corridors and recognised good practice, where practicable, will further minimise disruption to commercial fishing operations. | Tertiary        |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan.</p> <p>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementation of a Marine Pollution Contingency Plan will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will minimise the potential for adverse effects on                                                                                                   | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                            | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                    |                 |
|                            |     |                 | and procedures to protect personnel and to be followed in the event of a pollution incident.                                                                                                                                                                                                                                                                                                                                                                                                                                                | commercially important fish and shellfish species and the fisheries that depend upon them.                                                                                                                                                                                                                                         |                 |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                                                     | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise the potential for adverse effects on commercial fisheries and support the application of good environmental practice. | Tertiary        |
| ✓                          | ✓   | ✓               | Advance warning and accurate location details of construction, maintenance, and decommissioning activities, associated Safety Zones, and advisory passing distances will be given via notifications to mariners and Kingfisher Bulletins.                                                                                                                                                                                                                                                                                                   | Advance notification of construction, O&M, and decommissioning activities, Safety Zones and advisory passing distances will provide commercial fishers with timely information to support operational planning. This will help reduce disruption to fishing activity and improve navigational safety.                              | Tertiary        |
| ✓                          | X   | X               | A detailed Marine Mammal Mitigation Protocol (MMMP) will be prepared for unexploded ordnance (UXO) clearance. The MMMP for UXO clearance will ensure there are adequate mitigation measures to minimise the risk of any physical or permanent auditory injury to marine mammals as a result of UXO clearance.<br><br>The most suitable mitigation measures, based upon best available information and methodologies at that time, will be utilised. The MMMP for UXO clearance will be prepared in consultation with MD-LOT and NatureScot. | Implementation of the MMMP for UXO clearance will ensure that appropriate mitigation measures are applied during UXO clearance, helping to reduce the scale of underwater noise effects. This will minimise potential impacts on commercially important fish species and associated fishing interests.                             | Tertiary        |
| ✓                          | X   | X               | Development of a UXO Threat and Risk Assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and                                                                                                                                                                                                                                          | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Relevance to Assessment                                                                                                                                                                                                                                                                                                                   | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                           |                 |
|                            |     |                 | All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).                                                                                                                                                                                                                                                                                                    | application of appropriate clearance methods and mitigation measures, helping to minimise the number and scale of UXO detonations where practicable. This will reduce the potential for impacts on commercially important fish and shellfish species and associated fisheries.                                                            |                 |
| ✓                          | ✓   | X               | Development and implementation of a Fisheries Mitigation, Monitoring and Communication Plan. The Fisheries Mitigation, Monitoring and Communication Plan will describe the mitigation, monitoring, and communication measures to be implemented during the construction and O&M of the Bellrock Offshore Transmission Infrastructure to avoid or minimise adverse effects on commercial fisheries.                                                                                                                                                                       | Implementation of the Fisheries Mitigation, Monitoring and Communication Plan will provide a structured framework for communication, monitoring and mitigation throughout construction and O&M. This will help minimise disruption to commercial fishing operations and support the effective management of fisheries-related issues.     | Tertiary        |
| ✓                          | ✓   | X               | Participation in a Regional Commercial Fisheries Working Group (subject to a Commercial Fisheries Working Group being established and operating effectively) to assist with liaison between the Applicant and the fishing community.                                                                                                                                                                                                                                                                                                                                     | Participation in a Regional Commercial Fisheries Working Group will facilitate ongoing engagement between the Applicant and the fishing industry. This will support the identification and resolution of fisheries issues and help minimise disruption to commercial fishing activity.                                                    | Tertiary        |
| ✓                          | ✓   | ✓               | Adherence to best practice guidance with regards to fisheries liaison and procedures in the event of interactions between the Bellrock Offshore Transmission Infrastructure and fishing activities (e.g. Guidance on Claim for Compensation for Damage or Loss of Fishing Gear, Loss of Fishing Time, or Damage to Vessel by Suspected Offshore Renewable Activity (Scottish Government, 2021) and Best Practice Guidance for Fisheries Liaison with Offshore Renewables Developments <sup>1</sup> , in particular Chapter 7 (Fishing Liaison with Offshore Wind and Wet | Adherence to recognised fisheries liaison and compensation guidance will provide clear procedures for managing interactions between the Bellrock Offshore Transmission Infrastructure and fishing operations. This will support effective communication, timely resolution of issues and minimisation of impacts on commercial fisheries. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                         | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                 |                 |
|                            |     |                 | Renewables (FLOWW, 2025), in particular Section 7 (Disruption Settlements, Protocols for Lost/Damaged Gear, and Fisheries Community Funds).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                 |                 |
| ✓                          | X   | X               | Where boulder and/or UXO removal is required during site preparation works or any phase of the Bellrock Offshore Transmission Infrastructure, the location of UXO and large boulders that are relocated and may pose a snagging risk for fishing gear, will be disclosed to the fishing industry in a timely manner and in an accessible format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Timely communication of the location of relocated boulders and UXO that may present snagging hazards will improve awareness among fishers and support safe fishing operations. This will reduce the risk of fishing gear interactions and associated disruption to commercial fishing activity. | Tertiary        |
| ✓                          | ✓   | X               | <p>Preparation of an Invasive Non-native Species Mitigation Plan (INNSMP) to include provisions for invasive non-native species (INNS) management.</p> <p>The INNSMP will implement biosecurity measures in line with international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially INNS from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Implementation of the INNSMP will reduce the risk of introducing and spreading INNS through project vessels and equipment. This will help protect commercially important fish and shellfish stocks and support the long-term productivity of local fisheries.                                   | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                            | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                    |                 |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>▪ MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>▪ The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>▪ Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading INNS. This will help maintain the ecological conditions that support commercially important fish and shellfish species.                          | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Ongoing liaison with commercial fishing interests will be maintained throughout construction, O&amp;M, and decommissioning of the Bellrock Offshore Transmission Infrastructure. A dedicated Fisheries Liaison Officer will be appointed during the construction phase. During O&amp;M and decommissioning, appropriate fisheries liaison arrangements will be maintained, including the appointment of a Fisheries Liaison Officer, if required.</p>                                                                                                                                                                                                                        | Ongoing liaison with commercial fishing interests throughout construction, O&M, and decommissioning will facilitate the timely exchange of information and support the identification and resolution of fisheries-related issues. This will help minimise disruption to fishing activities and promote effective coexistence with other sea users. | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Where appropriate, guard vessels (or other suitable methods) will be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk to surface navigation during construction, O&amp;M, and decommissioning phases.</p>                                                                                                                                                                                                                                                                                                                                                                  | Use of guard vessels, or other suitable measures, will support compliance with Safety Zones and advisory passing distances, reducing the risk of interactions between the Bellrock Offshore Transmission Infrastructure and fishing vessels. This will help maintain navigational safety and minimise disruption to fishing operations.            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevance to Assessment                                                                                                                                                                                                                                                                   | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                           |                 |
| ✓                          | ✓   | ✓               | Development and implementation of a Development Specification and Layout Plan (DSLPL). A DSLPL will be prepared post-consent to finalise the layout of the Bellrock Offshore Transmission Infrastructure, including the OfSS(s) and OfRCS(s), in accordance with Marine Licence conditions. The DSLPL will be developed in consultation with the MCA and the NLB to ensure the final layout is compatible with navigational safety requirements, including potential search and rescue (SAR) activities.                                                                                                                                                            | Implementation of the DSLPL will ensure the final layout of the Bellrock Offshore Transmission Infrastructure takes account of navigational safety considerations and relevant stakeholder requirements. This will help minimise constraints on fishing activity.                         | Tertiary        |
| X                          | ✓   | X               | Sufficient information on the location and characteristics of the Bellrock Offshore Transmission Infrastructure will be provided to the United Kingdom Hydrographic Office to enable the Offshore Transmission Infrastructure to be accurately charted on physical and electronic nautical charts and associated publications.                                                                                                                                                                                                                                                                                                                                      | Marking all relevant Bellrock Offshore Transmission Infrastructure on physical and electronic nautical charts will improve awareness among commercial fishers. This will support route planning, reduce navigational risks and minimise the potential for interactions with fishing gear. | Tertiary        |
| ✓                          | ✓   | ✓               | Development of, and adherence to, an Lighting and Marking Plan (LMP).<br><br>The LMP will set out the lighting and marking requirements for the Bellrock Offshore Transmission Infrastructure during the construction, O&M, and decommissioning phases, including compliance with all relevant navigation and aviation legislative requirements. The LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst maintaining compliance with these requirements. Procedures will also be established for the reporting and timely rectification of lighting and marking failures, with interim hazard warnings implemented where required. | Implementation of the LMP will ensure the Bellrock Offshore Transmission Infrastructure is appropriately marked and illuminated in accordance with relevant requirements. This will improve visibility and support safe navigation for commercial fishing vessels.                        | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                            |                 |
| ✓                          | ✓   | ✓               | Any dropped objects during works associated with the Bellrock OFTDA will be reported in line with MD-LOT's guidance on the 'accidental deposit of an object at sea' (Marine Directorate, 2024) and objects will be recovered where they pose a hazard to other marine users and where recovery is practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Reporting and, where practicable, recovering dropped objects will minimise the potential for seabed obstructions that could pose a hazard to fishing vessels and gear. This will reduce the risk of fishing gear snagging and associated disruption to fishing activities. | Tertiary        |
| ✓                          | ✓   | X               | Compliance with Marine Guidance Note 654 and development and implementation of an Emergency Response Cooperation Plan (ERCoP). The Applicant will ensure compliance with Marine Guidance Note 654 and its annexes, where applicable, including consultation with the MCA, completion of a SAR checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support SAR and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities. | Implementation of the ERCoP and compliance with Marine Guidance Note 654 will ensure appropriate emergency response procedures and responsibilities are established. This will support marine safety and help minimise risks to commercial fishing vessels.                | Tertiary        |
| ✓                          | ✓   | X               | Marine coordination will be implemented to manage project vessels throughout construction, O&M, and decommissioning periods, including in liaison with relevant ports and harbours.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Marine coordination will support the safe and efficient management of project vessel movements. This will help reduce potential conflicts with fishing vessels and minimise disruption to commercial fishing operations.                                                   | Tertiary        |
| ✓                          | ✓   | ✓               | Project vessels will ensure compliance with international marine regulations as adopted by the Flag State, including the Convention on the International Regulations for Preventing Collisions at Sea and the International Convention for the Safety of Life at Sea,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Compliance with international maritime safety regulations will reduce the risk of navigational incidents involving project vessels. This will support the safety of commercial fishing vessels                                                                             | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                              | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                      |                 |
|                            |     |                 | thereby reducing the risk of navigational incidents, including vessel collisions, and associated risks to other sea users and the marine environment.                                                                                                                                                                           | and minimise the potential for disruption to fishing activity.                                                                                                                                                                                                                                                                                                       |                 |
| ✓                          | ✓   | ✓               | A Navigational Risk Assessment will be developed for the Bellrock Offshore Transmission Infrastructure, which will include consideration of the OfSS(s) and OfRCS(s).                                                                                                                                                           | The Navigational Risk Assessment will identify and evaluate navigational risks associated with the Bellrock Offshore Transmission Infrastructure and inform the development of appropriate risk management measures. This will support the safe operation of commercial fishing vessels.                                                                             | Tertiary        |
| X                          | X   | ✓               | Development of, and adherence to, a Decommissioning Programme.<br><br>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection. | Implementation of a Decommissioning Programme will ensure that decommissioning is planned and undertaken in a safe, orderly and environmentally responsible manner. This will minimise disruption to commercial fishing activity and support the safe management or removal of the Bellrock Offshore Transmission Infrastructure at the end of its operational life. | Tertiary        |
| ✓                          | ✓   | ✓               | Lights, marks, sounds, signals, and other aids to navigation will be exhibited as required by NLB, MCA, and the Civil Aviation Authority including the buoyed construction/decommissioning areas.                                                                                                                               | Provision of lights, marks, sounds, signals and other navigation aids, as required by the relevant authorities, will improve the visibility and awareness of the Bellrock Offshore Transmission Infrastructure. This will support safe navigation and reduce potential risks to commercial fishing vessels.                                                          | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.<br><br>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce                                        | Implementation of a Construction Method Statement will ensure that construction works are undertaken in a controlled and coordinated manner, with measures in place to minimise interactions with other sea users. This will help reduce disruption to commercial fishing                                                                                            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |
|                            |     |                 | adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.                                                                                                                                                                                                                                          | operations and support navigational safety during construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |
| X                          | ✓   | X               | Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.<br><br>These will be included in the Operation and Maintenance Plan. | Regular inspection and maintenance, including surveys and removal of debris, where required, will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the need for more extensive corrective works. This will reduce the potential for hazards to fishing vessels and gear associated with damaged, deteriorated or debris-entangled Offshore Transmission Infrastructure and support the continued safe operation of commercial fishing activity in the vicinity of the Bellrock OfTDA. | Tertiary        |

**Notes:**

<sup>1</sup> It is noted that SFF and related Associations have withdrawn from the FLOWW process. In the absence of alternative guidance supported by SFF, the Applicant will continue to adopt the FLOWW guidance and review its position should alternative guidance supported by SFF and related Associations be published.

## 10.6 Scoping of Potential Impacts

974. The sections below set out an initial assessment of the potential impacts on commercial fisheries due to the Bellrock OfTDA activities for the scoping stage of the EIA process. The assessment is based on a combination of the following:

- The definition of the Bellrock Offshore Transmission Infrastructure at the scoping stage;
- Embedded mitigation (as set out in **Section 10.5.1**) the level of understanding of the baseline at the scoping stage;
- The existing evidence base for commercial fisheries impacts due to Bellrock OfTDA activities;
- Relevant policy; and
- The professional judgement of qualified commercial fisheries specialists.

### 10.6.1 Construction, O&M and Decommissioning Phases

975. **Table 10.5** sets out those impacts on commercial fisheries that are proposed to be scoped in to, and scoped out of, the Bellrock OfTDA EIA Report, accompanied by a justification for this.

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**Table 10.5: Impacts Scoped In to, and Scoped Out of, the Commercial Fisheries Chapter in the Bellrock OfTDA EIA Report**

| Potential Impact                                                                                                                                                 | Description of Potential Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Scoping Outcome<br>(Scoped In/<br>Scoped Out) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Construction (and Decommissioning)</b>                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                               |
| Reduction in access to, or exclusion from established fishing grounds within the Bellrock OfTDA.                                                                 | Installation and decommissioning activities have potential to result in loss of fishing opportunities. This effect is expected to be localised and short term; furthermore, the operational range of relevant fleets will not typically be limited to the Bellrock OfTDA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b><u>Scoped in</u></b>                       |
| Displacement of fishing activity leading to gear conflict and increased fishing pressure on adjacent grounds.                                                    | Any reduced access to fishing grounds creates the potential for displacement of fishing activity. This effect is expected to be short term, and the operational range of relevant fleets will not typically be limited to the Bellrock OfTDA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b><u>Scoped in</u></b>                       |
| Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity.                                    | Installation and decommissioning activities may lead to disturbance of commercially important fish and shellfish resources, which in turn may result in displacement or disruption of fishing activity. The assessment will be informed by the outcomes of the fish and shellfish ecology impact assessment, and it will be assumed that commercial fisheries will be affected because of any loss of resources.                                                                                                                                                                                                                                                                                                                                       | <b><u>Scoped in</u></b>                       |
| Increased vessel traffic associated with the Bellrock Offshore Transmission Infrastructure within fishing grounds leading to interference with fishing activity. | Movement of vessels associated with the Bellrock Offshore Transmission Infrastructure adding to the existing volume of marine traffic in the area, may lead to interference to fishing activity. Assessment will be informed by the outcomes of the shipping and navigation impact assessment and the Navigational Risk Assessment.                                                                                                                                                                                                                                                                                                                                                                                                                    | <b><u>Scoped in</u></b>                       |
| Physical presence of infrastructure and potential exposure of that infrastructure leading to gear snagging.                                                      | The presence of partially constructed infrastructure may pose a snagging risk to fishing vessels, which could result in loss or damage to fishing gear.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b><u>Scoped in</u></b>                       |
| Additional steaming to alternative fishing grounds for vessels that would otherwise transit through the Bellrock OfTDA.                                          | This effect will be highly localised to Safety Zones (see <b>Section 3.5.5</b> in <b>Chapter 3: Project Description</b> ) and therefore very limited deviations to steaming routes are expected, particularly given the relatively limited scale of the Offshore Transmission Infrastructure consisting of subsea cabling and up to six OfSS(s) and up to two OfRCS(s). Given adequate notification, fishing vessels, which typically have an operational range beyond that of the Bellrock OfTDA (as indicated by VMS data presented above), will be in a position to avoid temporary construction/decommissioning areas with no or minimal impact on their steaming times. As such, the impact has been scoped out of the Bellrock OfTDA EIA Report. | <b><u>Scoped out</u></b>                      |

| Potential Impact                                                                                                                                                 | Description of Potential Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Scoping Outcome<br>(Scoped In/<br>Scoped Out) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>O&amp;M</b>                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                               |
| Reduction in access to, or exclusion from established fishing grounds within the Bellrock OFTDA.                                                                 | The presence of the Offshore Transmission Infrastructure may result in a long-term reduction in access to, or exclusion from, established fishing grounds during the O&M phase.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b><u>Scoped in</u></b>                       |
| Displacement leading to gear conflict and increased fishing pressure on adjacent grounds.                                                                        | Any reduced access to fishing grounds creates the potential for displacement of fishing activity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b><u>Scoped in</u></b>                       |
| Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity.                                    | O&M activities associated with the Offshore Transmission Infrastructure may lead to disturbance of commercially important fish and shellfish resources, including electromagnetic fields from cables, and changes to habitat, which may result in displacement or disruption of fishing activity. Assessment will be informed by the outcomes of the fish and shellfish ecology impact assessment, and it will be assumed that commercial fisheries will be affected because of any loss of resources.                                                                                                                                                          | <b><u>Scoped in</u></b>                       |
| Increased vessel traffic associated with the Bellrock Offshore Transmission Infrastructure within fishing grounds leading to interference with fishing activity. | Movement of vessels associated with the O&M of the Offshore Transmission Infrastructure adding to the existing volume of marine traffic in the area, may lead to interference of fishing activity. Assessment will be informed by the outcomes of the shipping and navigation impact assessment and the Navigational Risk Assessment.                                                                                                                                                                                                                                                                                                                           | <b><u>Scoped in</u></b>                       |
| Physical presence of infrastructure and potential exposure of that infrastructure leading to gear snagging.                                                      | The presence of Offshore Transmission Infrastructure may pose a snagging risk to fishing vessels, which could result in loss or damage to fishing gear. Standard industry practice and protocol (e.g. seabed infrastructure will be buried where possible and/or marked on nautical charts) will minimise the risk of gear snagging, but it remains likely to be an area of industry concern. Safety aspects associated with this impact, including damage to property and vessel stability, will be considered within the shipping and navigation impact assessment.<br><br>Safety impacts are addressed in <b>Chapter 19: Major Accidents and Disasters</b> . | <b><u>Scoped in</u></b>                       |

| Potential Impact                                                                                                        | Description of Potential Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Scoping Outcome<br>(Scoped In/<br>Scoped Out) |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Additional steaming to alternative fishing grounds for vessels that would otherwise transit through the Bellrock OfTDA. | This effect will be highly localised to Safety Zones (see <b>Section 3.5.5</b> in <b>Chapter 3: Project Description</b> ) associated with temporary maintenance works on, and advisory safe passing distances from, the Offshore Transmission Infrastructure and therefore very limited deviations to steaming routes are expected. Given adequate notification, fishing vessels, which typically have an operational range beyond that of the Bellrock OfTDA (as indicated by VMS data presented above), will be in a position to avoid temporary maintenance areas with no or minimal impact on their steaming times. As such, the impact has been scoped out of the Bellrock OfTDA EIA Report. | <b><u>Scoped out</u></b>                      |

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## 10.6.2 Bellrock OfTDA Whole Project Assessment

976. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects identified for commercial fisheries receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
977. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock Onshore Transmission Development Area for commercial fisheries. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

## 10.6.3 Potential Cumulative Effects

978. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
979. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 10.6.2**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on commercial fisheries receptors. A study area incorporating sections of the northern North Sea (ICES division 4a) and central North Sea (division 4b) is proposed for the commercial fisheries CEA.
980. Other offshore wind projects and other activities, such as subsea cables and pipelines, relevant to the assessment of cumulative impacts on commercial fisheries will be identified through a screening exercise. The potential impacts considered in the cumulative assessment as part of the Bellrock OfTDA EIA Report will be in line with those described for the Bellrock OfTDA-alone assessment, though it is possible that some will be screened out on the basis that the impacts are highly localised (i.e. they occur only within the Bellrock OfTDA boundaries) or where management measures in place for the Bellrock OfTDA and other projects will reduce the risk of impacts occurring. Key potential cumulative impacts are expected to result from a loss of or restricted access to established fishing grounds and displacement of fishing activity.
981. Several offshore wind farm projects will be included within the CEA as appropriate, alongside the Bellrock Project. The latest information available for each of the projects scoped into the CEA will be reviewed, including scoping reports, to understand the potential impact of these projects cumulatively with the Bellrock Project.

## 10.6.4 Potential Transboundary Effects

982. Transboundary impacts are 'scoped in' to the assessment and will be considered based on any potential displacement of fishing activity into the Norwegian exclusive economic zone, which is expected to be highly unlikely based on data reviewed within this **Bellrock OfTDA Scoping Report**.

## 10.6.5 Summary of Potential Impacts

983. **Table 10.6** outlines the commercial fisheries impacts which are proposed to be scoped in and scoped out from the Bellrock OfTDA EIA Report.

**Table 10.6: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Commercial Fisheries**

| Potential Impacts                                                                                                                | Receptors     | Scoped In or Scoped Out (✓ or X) |     |                 |
|----------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------|-----|-----------------|
|                                                                                                                                  |               | Construction                     | O&M | Decommissioning |
| Reduction in access to, or exclusion from established fishing grounds within the Bellrock OfTDA                                  | All receptors | ✓                                | ✓   | ✓               |
| Displacement of fishing activity leading to gear conflict and increased fishing pressure on adjacent grounds                     | All receptors | ✓                                | ✓   | ✓               |
| Disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity     | All receptors | ✓                                | ✓   | ✓               |
| Increased vessel traffic associated with the Bellrock OfTDA within fishing grounds leading to interference with fishing activity | All receptors | ✓                                | ✓   | ✓               |
| Physical presence of infrastructure and potential exposure of that infrastructure leading to gear snagging                       | All receptors | ✓                                | ✓   | ✓               |
| Additional steaming to alternative fishing grounds for vessels that would otherwise transit through the Bellrock OfTDA           | All receptors | X                                | X   | X               |
| Bellrock OfTDA Whole Project Assessment                                                                                          | All receptors | ✓                                | ✓   | ✓               |

| Potential Impacts     | Receptors     | Scoped In or Scoped Out (✓ or X) |     |                 |
|-----------------------|---------------|----------------------------------|-----|-----------------|
|                       |               | Construction                     | O&M | Decommissioning |
| Cumulative effects    | All receptors | ✓                                | ✓   | ✓               |
| Transboundary effects | All receptors | ✓                                | ✓   | ✓               |

## 10.7 Proposed Approach to Impact Assessment

### 10.7.1 Guidance

984. In addition to the general approach and guidance outlined in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**, the assessment of potential impacts on commercial fisheries receptors will also comply with the guidance documents presented in **Table 10.1**.

### 10.7.2 Data Sources

985. Detailed analysis of baseline datasets will be undertaken within the Bellrock OfTDA EIA Report to characterise long-term (i.e. over several years) patterns in commercial fisheries activity across the commercial fisheries study areas and predict potential impacts upon future commercial fishing activities. Data sources include those set out in **Section 10.4.2**.

986. Consultation with the commercial fishing industry will be undertaken in order to ground-truth available baseline data and gain further understanding of commercial fisheries activity by smaller vessels across the inshore portion of the commercial fisheries study areas. Consultation will continue to be undertaken with a number of relevant stakeholders, including the following:

- SFF;
- SWFPA;
- Scottish Pelagic Fishermen's Association;
- North and East Coast RIFG;
- Other local fishermen's associations and existing commercial fisheries working groups;
- Individual fishers as identified by the Fisheries Liaison Officer/other means; and
- Any Norwegian and EU Member State representative organisations as identified during baseline data analysis.

987. Analysis of data and the results of consultation will provide an extended baseline characterisation of the commercial fisheries study areas, which will underpin and inform the impact assessment.

988. No site-specific surveys are proposed to inform the commercial fisheries Bellrock OfTDA EIA Report chapter.

### 10.7.3 Assessment Methodology

989. The EIA will follow the general approach outlined in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** of this **Bellrock OfTDA Scoping Report**. Definitions specific to commercial fisheries in relation to assessing the sensitivity of the receptor and magnitude of an impact will be provided to frame the assessment.
990. Where relevant, the impact assessment will be informed by the outcomes of the fish and shellfish ecology and shipping and navigation assessments.
991. Impacts will be assessed for each relevant fleet/fishery scoped into the Bellrock OfTDA EIA Report.

## 10.8 Scoping Questions to Consultees

992. The following questions are posed to consultees to help them frame and focus their response to the commercial fisheries scoping exercise, which will in turn inform the EIA:
- Do you agree that all the relevant data sources have been identified in **Section 10.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 10.2**?
  - Do you agree with the proposed study areas as presented in **Section 10.4.1**?
  - Do you agree that the data sources will be sufficient to describe the Bellrock OfTDA EIA baseline for commercial fisheries?
  - Do you agree with the proposed time series for baseline characterisation (noting this time series will capture pre- and post- Brexit and pre- and post- Covid pandemic periods)?
  - Do you agree that the embedded mitigation measures (**Section 10.5.1**) described present an appropriate basis for managing potential effects on commercial fisheries receptors and informing the commercial fisheries assessment?
  - Do you agree with the scoping in and scoping out of impact pathways in relation to commercial fisheries (**Section 10.6**)?
  - Do you agree with the proposed assessment methodology for commercial fisheries?
  - Do you have any other matters or information sources that you wish to present?

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# 11 Shipping and Navigation

## 11.1 Introduction

993. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on shipping and navigation.
994. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
995. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
996. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

997. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026a). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
998. As discussed with the Maritime and Coastguard Agency (MCA) and the Northern Lighthouse Board (NLB) at the Bellrock WFDA Hazard Risk Workshop, and acknowledged without objection within their respective WFDA representations, the OfSS(s) (which form part of the Bellrock Offshore Transmission Infrastructure) have been considered in the Bellrock WFDA EIA in relation to hazards associated with allision risk and emergency response access on the basis that for these hazards the Bellrock WFDA layout encapsulates the floating offshore units and OfSS(s), as described in Section 1.1 of the **Bellrock WFDA NRA** (Bellrock Offshore Wind Farm Limited, 2026b). This is due to the OfSS(s) being surface-piercing structures forming part of the array layout alongside the floating offshore units. Therefore, impacts which rely upon the array layout (allision risk and emergency response access) have already been fully assessed in the **Bellrock WFDA EIA Report** and are not proposed to be re-assessed in isolation as part of the Bellrock OfTDA EIA. Other relevant impacts associated with the OfSS(s) (vessel displacement and increased third-party collision risk, third-party to project collision risk, and interference with navigation, communications and position-fixing equipment) will be assessed in isolation as part of the Bellrock OfTDA EIA, although such assessment will utilise the findings of the Bellrock WFDA EIA as appropriate. For example, the displacement of vessel traffic due to the presence of the OfSS(s) will take account of the quantification and modelling undertaken in the Bellrock WFDA EIA. Further details on the approach to assessment of the OfSS(s) is provided in **Section 11.6**.
999. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on shipping and navigation receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Anatec Limited.
1000. This Chapter should be read in conjunction with the following chapters of this **Bellrock OfTDA Scoping Report**:
- **Chapter 10: Commercial Fisheries;**
  - **Chapter 13: Marine Infrastructure and Other Users;** and
  - **Chapter 19: Major Accidents and Disasters.**
1001. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.
1002. The output of the scoping process will feed into a Navigational Risk Assessment (NRA) which will be produced in support of the Shipping and Navigation Chapter in the Bellrock OfTDA EIA Report.

## 11.2 Legislation, Policy and Guidance

1003. **Table 11.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching policy and legislation relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 11.1: Summary of Relevant Legislation, Policy and Guidance for Shipping and Navigation**

| Relevant Legislation, Policy and Guidance                                                                        | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Submarine Telegraph Act (United Kingdom (UK) Government, 1885)                                                   | <p>Prohibits the damaging of submarine cables, either wilfully or by culpable negligence, except in an emergency situation.</p> <p>This UK legal protection inclusive of maritime regulations for undersea communication cables will be considered in full throughout the Bellrock OfTDA impact assessment with particular regard to the protection of the Offshore Transmission Infrastructure from damage and prevention of maritime incidents.</p>                                                                                                                                                                                                                        |
| United Nations Convention on the Law of the Sea (United Nations (UN), 1982)                                      | <p>The United Nations Convention on the Law of the Sea defines the rights and responsibilities of all parties with respect to their use of the sea throughout the world, sets out the legal framework for the seas and oceans, and regulates the use of marine resources.</p> <p>Internationally recognised sea lanes and other identified routes will be considered in the shipping and navigation baseline (see <b>Section 11.4</b>) and will be considered wherever “<i>interference may be caused</i>” including through vessel displacement, port access, collision risk and allision risk in Bellrock OfTDA impact assessment.</p>                                     |
| International Convention for the Safety of Life at Sea (SOLAS) (International Maritime Organization (IMO), 1974) | <p>SOLAS is an international agreement that specifies the basic minimum requirements for the construction, equipment and operation of vessels, compatible with their safety.</p> <p>SOLAS will be considered in full throughout the Bellrock OfTDA impact assessment with particular regard in the context of the Offshore Transmission Infrastructure to rendering assistance to persons in distress (Regulation 33) and passage planning (Regulation 34) when considering allision risk, anchor interaction with subsea cables and emergency response. Project vessel compliance with SOLAS is included as an embedded mitigation measure (see <b>Section 11.5.1</b>).</p> |
| Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (IMO, 1972/77)            | <p>The COLREGs define the rules which must be adhered to by all vessels navigating internationally and governs the conduct of vessels to minimise the risk of collisions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Relevant Legislation, Policy and Guidance                                                                                                                                     | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                               | The COLREGs will be considered in full throughout the Bellrock OFTDA impact assessment with particular regard in the context of the Offshore Transmission Infrastructure to collision avoidance and conduct of vessels in restricted visibility when considering collision risk in the impact assessment. Project vessel compliance with COLREGs is included as an embedded mitigation measure (see <b>Section 11.5.1</b> ).                                                                                                                                                                                |
| <b>Policy</b>                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Scotland's National Marine Plan (Scottish Government, 2015)                                                                                                                   | Sets out how navigational safety in relevant areas used by shipping now and in the future should be protected. All marine planning policies for shipping, ports, harbours and ferries have been considered fully throughout the shipping and navigation assessment. Regard will be given to the displacement of main commercial routes and other marine activities such as anchoring activity in the Bellrock OFTDA impact assessment.                                                                                                                                                                      |
| UK Marine Policy Statement (His Majesty's Government (Her/his Majesty's Government), 2011)                                                                                    | <p>The UK Marine Policy Statement provides a framework for preparing Marine Plans and taking decisions affecting the marine environment.</p> <p>The UK Marine Plan sets out how marine plan authorities and decision makers should consider and seek to minimise any negative impacts on shipping activity, freedom of navigation and navigational safety and ensure that their decisions are in compliance with international maritime law.</p> <p>Displacement of existing routes and activity and subsequent increases in collision risk will be considered in the Bellrock OFTDA impact assessment.</p> |
| <b>Guidance</b>                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| International Association of Lighthouse Authorities (IALA) G1185 Enhancing the safety and efficiency of navigation around offshore renewable energy installation (IALA, 2024) | Offers guidance, based on current best practice and knowledge, when considering navigational safety issues in and around Offshore Renewable Energy Installation (OREI) and assists maritime authorities, OREI developers and other stakeholders when planning the establishment of OREI.                                                                                                                                                                                                                                                                                                                    |
| Marine Guidance Note (MGN) 372 Amendment 1 (Merchant and Fishing) OREI: Guidance to Mariners Operating in the Vicinity of UK OREIs (MCA, 2022)                                | Highlights the issues to be considered when planning and undertaking voyages in the vicinity of OREIs in UK waters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| IALA Recommendation R139 (2021), Guidance G1162 on the Marking of Man-Made Offshore Structures (IALA, 2022)                                                                   | Provides guidance for the marking of man-made offshore structures including general considerations and specific information associated with offshore wind farms.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| MGN 654 OREI: Guidance on UK Navigational Practice, Safety and Emergency Response (MCA, 2021a)                                                                                | Highlights issues that shall be considered when assessing the potential effect on navigational safety and emergency response (search and rescue (SAR), salvage and towing, and counter                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Relevant Legislation, Policy and Guidance                                                                                           | Relevance to the Assessment                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                     | <p>pollution) from offshore renewable energy developments proposed in UK internal waters, territorial sea or Renewable Energy Zones.</p> <p>Compliance with MGN 654 and its annexes is included as an embedded mitigation measure (see <b>Section 11.5.1</b>) and will be considered throughout the Bellrock OfTDA impact assessment.</p> |
| MGN 661 Navigation: Safe and Responsible Anchoring and Fishing Practices (MCA, 2021b)                                               | Highlights the importance of full awareness of the submarine pipelines and cables on the seabed, prior and during anchoring operations, and during fishing activities.                                                                                                                                                                    |
| IALA Recommendation O-139 on The Marking of Man-Made Offshore Structures (IALA, 2021)                                               | Gives recommendations on the marking requirement for man-made structures in the marine environment. This includes subsea, surface-piercing, floating, and fixed structures to ensure the safety of vessel traffic.                                                                                                                        |
| The Royal Yachting Association's (RYA) Position on Offshore Renewable Energy Developments: Paper 1 (of 4) – Wind Energy (RYA, 2019) | Sets out recreational boating concerns in relation to offshore renewable wind energy for consideration when developing their NRAs.                                                                                                                                                                                                        |
| Revised Guidelines for Formal Safety Assessment (FSA) for Use in the IMO Rule-Making Process (IMO, 2018)                            | A rational and systematic process for assessing the risks associated with shipping activity and for evaluating the costs and benefits of IMO's options for reducing these risks.                                                                                                                                                          |

## 11.3 Consultation

1004. A Scoping Information Package was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to shipping and navigation for the Bellrock OfTDA EIA. No feedback on shipping and navigation was received. The Applicant will continue ongoing consultation for the Bellrock OfTDA EIA Report, with dedicated meetings anticipated with key shipping and navigation stakeholders throughout the assessment process. An initial list of organisations considered relevant to shipping and navigation consultation is provided in **Section 11.7**.
1005. In addition, the MCA was consulted in September 2025, and the MCA and NLB were consulted in May 2026 for initial discussions regarding the site selection and vessel traffic datasets for the OfRCS(s), noting that the location of the OfRCS(s) will be a key consideration throughout the NRA process. The MCA noted that the OfRCS(s) should be situated in areas of lighter vessel traffic, with future routeing due to cumulative developments taken into account – particularly to ensure that safe alternative routeing remains viable. Using cumulative developments as a means of 'shielding' the OfRCS(s) from vessel traffic was highlighted as a possible option. On vessel traffic datasets, in this instance with an MGN 654-compliant vessel traffic survey for summer and a 12-month long-

term Automatic Identification System (AIS) dataset, a winter survey for the OfRCS(s) would not be required.

1006. The representations from shipping and navigation stakeholders in relation to the Bellrock WFDA are also acknowledged. Although, not directly associated with the Bellrock OfTDA, these will be considered where relevant in the NRA process, including those from MCA, NLB and RYA Scotland.
1007. Additional consultation will be undertaken throughout the NRA process, such as dedicated meetings with key stakeholders to identify and discuss potential shipping and navigation hazards. The approach to additional consultation, including the need for a Hazard Workshop, will be discussed with the MCA. Feedback received from consultation undertaken as part of the Bellrock WFDA EIA will also be considered where appropriate.

## 11.4 Existing Environment

1008. This section establishes the baseline environment in terms of key navigational features, vessel traffic, and marine incidents, for the purpose of identifying potential impacts which should be scoped into the Bellrock OfTDA EIA Report.

### 11.4.1 Study Area

1009. The baseline information presented within this Chapter has been compiled with reference to a study area defined as a 5 nm buffer around the Bellrock OfTDA Scoping Boundary as presented in **Figure 11.1 (Appendix A (Volume 1))** (hereafter referred to as the 'shipping and navigation study area'). This is an industry standard buffer used for shipping and navigation assessments as it captures relevant routeing, whilst remaining site-specific to the OfSS(s), OfRCS(s), interconnector cable(s), offshore export cables and associated cable/scour protection associated with the Bellrock OfTDA. The shipping and navigation study area will be refined during the EIA process to reflect a 2 nm buffer around the Bellrock OfTDA EIA Boundary, although this may be extended as necessary at the Bellrock WFDA to ensure the OfSS(s) are adequately captured.
1010. During the EIA process an additional study area will be defined to capture baseline data in proximity to the OfRCS(s), encompassing a 10 nm buffer of its corresponding Area of Search.
1011. Where appropriate, features outside of the shipping and navigation study areas such as navigational features, other offshore developments, and international ports will be considered in the NRA.
1012. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to define the Bellrock OfTDA. The shipping and navigation study area will be updated for the Bellrock OfTDA EIA and NRA to reflect this refinement.

### 11.4.2 Data and Information Sources

1013. The data sources that have been used to inform this Chapter of the **Bellrock OfTDA Scoping Report** are presented in **Table 11.2**.



**Table 11.2: Summary of Key Data and Information Sources for Shipping and Navigation**

| Dataset                                                                                                   | Year(s)   | Description                                                                            |
|-----------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------|
| AIS data within the shipping and navigation study area for the period 15 July 2025 – 28 July 2025         | 2025      | Characterising vessel traffic movements within and in proximity to the Bellrock OfTDA. |
| AIS data within the shipping and navigation study area for the period 15 December 2025 – 28 December 2025 | 2025      |                                                                                        |
| United Kingdom Hydrographic Office (UKHO) Admiralty Charts 273, 278, 1407, and 1409                       | 2026      | Characterising other navigational features in proximity to the Bellrock OfTDA.         |
| Admiralty Sailing Directions North Sea (West) Pilot NP54, 12 <sup>th</sup> Edition                        | 2021      |                                                                                        |
| Marine Accident Investigation Branch (MAIB) incident data within the shipping and navigation study area   | 2015-2024 | Review of marine incidents within and in proximity to the Bellrock OfTDA.              |
| Royal National Lifeboat Institution (RNLI) incident data within the shipping and navigation study area    | 2015-2024 |                                                                                        |

1014. It is noted that AIS carriage and broadcast is not compulsory for fishing vessels less than 15 metres (m) in length, or vessels of less than 300 gross tonnage. Therefore, such traffic may be underrepresented within the characterisation of the baseline. However, it is noted that smaller vessels are increasingly observed to utilise AIS voluntarily, given the associated safety benefits. On this basis and noting the distance offshore, the available data are considered fit for the purposes of providing the baseline assessment presented in this **Bellrock OfTDA Scoping Report**.
1015. The NRA will include a baseline study summarising the available background navigation data. In addition, a dedicated 14-day vessel traffic summer survey will be undertaken for inclusion in the NRA. This will ensure that any non-AIS vessels will be sufficiently characterised in the baseline study with this approach being agreed with the MCA via correspondence noted above in **Section 11.3**.

### 11.4.3 Key Navigational Features

1016. Navigational charts and Sailing Directions pertinent to the Bellrock OfTDA were studied to define charted features or key navigational practices. The key navigational features charted in proximity to the Bellrock OfTDA are presented in **Figure 11.2 (Appendix A (Volume 1))**.
1017. The main port/harbour within the shipping and navigation study area is the Port of Aberdeen, approximately 3.5 nm northwest of the Bellrock OfTDA, where a significant proportion of traffic (particularly oil and gas vessels) within the shipping and navigation study area transits to/from (see **Section 11.4.4**). The port has a designated anchorage area to the north of its port limits, located approximately 1.4 nm north of the pilot boarding station. A Vessel Traffic Service (VTS) area surrounds the Port of Aberdeen – the UKHO Admiralty Sailing Directions (UKHO, 2021) state that “*when 3 miles from Fairway Light Buoy, vessels must request permission to enter the VTS area*”; this aligns with the charted VTS area. Other ports and harbours of note are Stonehaven Harbour (located south of the corridor landfall at Cowie) and Montrose Port (whose pilot boarding station is

located approximately 16 nm southwest of the Bellrock OfTDA Scoping Boundary). A reported anchorage location is charted within Stonehaven Bay.

1018. A number of baseline offshore wind farms are noted in proximity to the Bellrock OfTDA Scoping Boundary (see **Figure 13.3 (Appendix A (Volume 1))**). Kincardine is a floating offshore wind farm consisting of five turbines, surrounded by the Bellrock OfTDA Scoping Boundary (noting a 1 nm buffer of Kincardine has been excluded from the Bellrock OfTDA Scoping Boundary to allow for this), with the offshore export cables for Kincardine crossing the Bellrock OfTDA Scoping Boundary making landfall south of Aberdeen. In addition to Kincardine, Seagreen (approximately 8 nm south of the Bellrock OfTDA Scoping Boundary) and Hywind (approximately 17 nm north of the Bellrock OfTDA Scoping Area) are two other operational wind farms in proximity.
1019. There are a total of 66 charted wrecks and obstructions<sup>40</sup> within the shipping and navigation study area, with the majority being located within the western half closer to shore. There are 28 charted wrecks and obstructions located within the Bellrock OfTDA Scoping Boundary itself, with the shallowest of these being at a depth of 18 m below Chart Datum, located near the coast at Stonehaven.
1020. Approximately 10.4 nm to the east of the Bellrock OfTDA Scoping Boundary lies an oil and gas development area. Included in this oil and gas development area is a floating production storage and offloading unit, operational in relation to the Catcher oil field.

#### 11.4.4 Vessel Traffic

1021. A total of 28 days of AIS vessel traffic data was collected from terrestrial and offshore receivers from 15 July to 28 July 2025 (the 'summer period'), and from 15 December to 28 December 2025 (the 'winter period').
1022. The vessel traffic data collected within the shipping and navigation study area is colour-coded by vessel type and presented in **Figure 11.3 (Appendix A (Volume 1))**. Vessels deemed as constituting temporary traffic (e.g. vessels involved in surveys or guard work) have been removed on the basis that these are not representative of the baseline environment. Tracks of vessels at berth within ports and harbours in the area have been included in **Figure 11.3 (Appendix A (Volume 1))**, but as these are not actively transiting they have been removed from further analysis.
1023. There was an average of 83 vessels recorded within the shipping and navigation study area per day during the summer period (with 45 per day within the Bellrock OfTDA Scoping Boundary itself). In contrast, an average of 53 vessels per day were recorded within the shipping and navigation study area during the winter period (with 26 per day within the Bellrock OfTDA Scoping Boundary itself). The main difference between the two periods in terms of vessel type was observed in recreational vessel numbers, with an average of ten recreational vessels per day recorded within the shipping and navigation study area during the summer period, and none recorded during the winter period. Other vessel types notably more common during the summer period included

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<sup>40</sup> Wrecks identified are based on charted wrecks from the relevant UKHO Admiralty Charts which are of relevance to navigation. Other wrecks may be present which are not considered relevant to the shipping and navigation baseline.



passenger vessels (ten per day in summer compared to one per day in winter), oil and gas vessels (33 per day in summer compared to 26 per day in winter), and wind farm vessels (three per day in summer compared to one per day in winter). There were four to five fishing vessels per day recorded in winter compared to three to four per day in summer.

1024. During the 28-day period as a whole, the most common vessel type was oil and gas, accounting for 44% of vessel tracks. This was followed by cargo vessels (14%), passenger vessels (9%), and tankers (8%). A similar vessel type distribution was noted within the Bellrock OfTDA Scoping Boundary itself.
1025. Oil and gas vessels were predominantly recorded routeing to/from Aberdeen (UK) in an east-west or northeast-southwest direction (involving transits to/from oil and gas infrastructure in the North Sea), and as such were primarily observed within the northern half of the shipping and navigation study area.
1026. Cargo vessels were mainly seen undertaking north-south routeing primarily in the centre of the shipping and navigation study area. Notable destinations included UK ports, Icelandic ports, and Dutch ports. Three regular Roll-on/Roll-off cargo (RoRo) routes were identified within the vessel traffic data. These included:
- A Smyril Lines operated vessel routeing northwest-southeast between Rotterdam (Netherlands) and Tórshavn (Faroe Islands), recorded approximately twice per week in both the summer and winter periods;
  - A Sea Cargo operated vessel routeing approximately twice per week, primarily between Aberdeen and Tananger (Norway) in the summer period and between Aberdeen and Risavika (Norway) in the winter period, with all transits east-west to the north of the Bellrock OfTDA Scoping Boundary; and
  - Two Northlink Ferries operated vessels, each with four transits per week in summer and two per week in winter, with one routeing between Aberdeen and Kirkwall (UK) and the other routeing between Aberdeen and Lerwick (UK). These vessels were recorded at the northern extremity of the shipping and navigation study area only.
1027. Tankers were also mainly recorded undertaking north-south routeing, with this primarily within the western portion of the shipping and navigation study area. Destinations for these vessels were mainly UK ports such as Aberdeen and Immingham.
1028. Passenger vessels were commonly noted transiting north-south to/from Aberdeen, with these transits including Roll-on/Roll-off Passenger (RoPax) vessels operated by NorthLink Ferries between Aberdeen and Kirkwall/Lerwick – these vessels were recorded routeing approximately once per day within both the summer and winter survey periods and remained outside of the Bellrock OfTDA Scoping Boundary. Two passenger vessel corridors passing through the Bellrock OfTDA Scoping Boundary were also observed, with one such route on an east-west bearing between Aberdeen and Norwegian ports largely including vessels participating in the Tall Ships Races, and a second including north-south routeing between UK ports such as Invergordon and South Queensferry and comprising primarily cruise liners.

1029. Based on average speeds and track behaviour, likely active fishing behaviour was observed within the Bellrock OfTDA Scoping Boundary during both 14-day periods. This was primarily observed from two vessels within the central portion of the Bellrock OfTDA Scoping Boundary. Fishing vessels were also observed in transit (as opposed to actively fishing), with a common passage being a north-south route passing offshore of Seagreen.
1030. Recreational vessels generally remained close to shore, with transits primarily following the coast on a northeast-southwest bearing. Recreational vessels routeing to/from Aberdeen on an east-west bearing offshore were also noted.
1031. Vessels which travelled at a speed of less than 1 kt for more than 30 minutes are assumed to be at anchor. Such cases have, therefore, been identified and checked for likely anchoring activity alongside a review of broadcast navigational status. From this, vessels which are likely to have been at anchor were observed within the shipping and navigation study area, primarily in the approaches to the Port of Aberdeen. The designated anchorage area (see **Section 11.4.3**) was commonly used, with oil and gas vessels frequently seen here. The majority of identified anchored vessels were recorded outside of the Bellrock OfTDA Scoping Boundary itself, either within this designated anchorage area or in close proximity – out of the six total incidences of vessels likely being at anchor within the Bellrock OfTDA Scoping Boundary, four were within the anchorage.

### 11.4.5 Marine Incidents

1032. Marine incidents recorded from MAIB and RNLI within the shipping and navigation study area over the ten-year period between 2015 and 2024 have been assessed within this section. As with the vessel traffic data (**Section 11.4.4**), incidents occurring within ports and harbours in the area have been excluded from further analysis on the basis that they are not representative of the baseline environment around the Bellrock OfTDA.

#### 11.4.5.1 Marine Accident Investigation Branch

1033. Excluding those incidents reported within ports/harbours (unless location clearly indicates otherwise), a total of 46 incidents involving 50 casualties were documented by the MAIB as occurring within the shipping and navigation study area during the 10-year period between 2015 and 2024, corresponding to an average of four to five incidents per year. The most common incident type within the shipping and navigation study area was “machinery failure”, which accounted for 30% of incidents. This was followed by “accident to person” (28%), “damage/loss of equipment”, and “grounding/stranding” (9%). The most common casualty types were fishing vessels and “other” (which included offshore supply vessels and SAR craft), accounting for 30% each. The next most common casualty type was cargo vessels (22%) followed by recreational vessels (11%). Within the Bellrock OfTDA Scoping Boundary itself, there was a total of 18 incidents involving 20 casualties.
1034. Overall, incidents recorded by MAIB within the shipping and navigation study area have increased from the previous ten years recorded, with a total of 36 incidents involving 41 casualties recorded between 2005 and 2014.

#### 11.4.5.2 Royal National Lifeboat Institution

1035. Excluding those incidents which occurred within ports/harbours, a total of 259 lifeboat responses to 258 unique incidents were documented by the RNLI within the shipping and navigation study

area during the 10-year period between 2015 and 2024, corresponding to an average of 26 incidents per year. This is excluding hoaxes and false alarms, of which there was a total of 56 within the shipping and navigation study area over the 10-year period. Excluding incidents of unknown type (which accounted for 26%), the most common incident type was “person in danger” which accounted for 63% of incidents. This was followed by “other” (17%) and “machinery failure” (10%). Excluding casualties of unknown type (which accounted for 22%), the most common casualty type was “person in danger” which accounted for 54% of casualties. This was followed by fishing vessels (9%) and “personal craft” (9%). Within the Bellrock OfTDA Scoping Boundary itself, there was a total of 55 lifeboat responses to 55 incidents.

#### 11.4.6 Future Baseline

1036. The baseline environment is not static and will exhibit some degree of change over time, with or without the Bellrock OfTDA in place. Therefore, when undertaking impact assessments, it will be necessary to place any potential impacts in the context of the envelope of change that might occur naturally over the lifetime of the Bellrock OfTDA. This future baseline will be defined for the purposes of the EIA.

### 11.5 Potential Impacts

1037. Potential impacts during all phases of the Bellrock Offshore Transmission Infrastructure may arise from presence of vessels and infrastructure. These include:

- Site preparation works<sup>41</sup> (including surveys, seabed preparation, unexploded ordnance survey and/or clearance, debris clearance, and out of service cable/pipeline removal);
- Installation of marine exist ducts for the trenchless technique for offshore export cables at landfall;
- Installation of OfSS(s) and OfRCS(s);
- Installation of offshore export cables and interconnector cable(s); and
- The use of vessels for any associated activities.

1038. These activities may result in the following potential impact pathways:

- Increased vessel displacement and vessel to vessel collision risk;
  - Third party to third party;
  - Third party to project vessel;
- Creation of vessel to structure allision risk;
- Reduction in under-keel clearance;

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<sup>41</sup> For the purposes of EIA, site preparation is assessed under construction works.

- Anchor interaction with subsea cables;
- Interference with navigation, communications, and position-fixing equipment; and
- Reduction in SAR capability.

1039. Potential impacts arising from the Bellrock Offshore Transmission Infrastructure during the construction, O&M, and decommissioning phases are outlined in **Section 11.6** and summarised in **Table 11.4**.

1040. In addition, the potential for cumulative (**Section 11.6.2**) and transboundary (**Section 11.6.4**) impacts, as well as inter-relationships and interactions between impacts for the Bellrock Offshore Transmission Infrastructure, will also be determined and assessed.

### 11.5.1 Embedded Mitigation Measures

1041. Embedded mitigation has been identified, as presented in **Table 11.3** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.

1042. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

Table 11.3: Embedded Mitigation Measures Relevant to Shipping and Navigation

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Relevance to Assessment                                                                                                                                                                                                                                                                                                                           | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                   |                 |
| ✓                          | ✓   | X               | A detailed Cable Burial Risk Assessment (CBRA) will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will minimise cable exposure and reduce potential risks to navigation associated with the Bellrock Offshore Transmission Infrastructure.     | Primary         |
| ✓                          | ✓   | ✓               | <p>An application will be made post-consent for Safety Zones including:</p> <ul style="list-style-type: none"> <li>▪ An application for Safety Zones for up to 500 m around each OfSS and OfRCS during its construction;</li> <li>▪ An application for Safety Zones for up to 50 m around each OfSS and OfRCS when construction works have been completed but prior to commissioning, or where construction works are partially completed and a construction vessel is not present;</li> <li>▪ An application for Safety Zones for up to 500 m around each OfSS and OfRCS during major maintenance during operation;</li> <li>▪ An application (prior to commencement of decommissioning) for Safety Zones for up to 500 m around each OfSS and OfRCS during its decommissioning; and</li> <li>▪ Consideration will also be given to an application for up to 500 m operational Safety Zones throughout the O&amp;M phase.</li> </ul> | The establishment of Safety Zones around the Bellrock Offshore Transmission Infrastructure during construction, major maintenance and decommissioning will provide a managed area for safe working operations. This will reduce the likelihood of vessel interactions with the Bellrock Offshore Transmission Infrastructure and project vessels. | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relevance to Assessment                                                                                                                                                                                                                                                                                               | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                       |                 |
| ✓                          | ✓   | X               | <p>Development of, and adherence to, a Seabed Obstruction Mitigation Plan.</p> <p>The Seabed Obstruction Mitigation Plan will set out any potential risks to legitimate sea users and identify measures to reduce these risks.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Implementation of a Seabed Obstruction Mitigation Plan will identify and manage potential hazards associated with seabed features and the Bellrock Offshore Transmission Infrastructure. This will reduce risks to navigation and support the safe passage of vessels operating within and around the Bellrock OfTDA. | Tertiary        |
| ✓                          | ✓   | X               | Any damage, destruction, or decay of offshore export cables and/or interconnector cable(s) will be notified to the MCA, NLB, Kingfisher, and the UKHO.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Timely notification of any damage, destruction or decay of offshore export cables and interconnector cable(s) will ensure relevant authorities and sea users are informed of potential navigational hazards. This will support navigational awareness and the implementation of appropriate risk management measures. | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&amp;M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with</p> | Implementation of the VMNSP will support the safe and efficient management of project vessel movements. Adoption of defined transit corridors, navigational controls and recognised good practice, where practicable, will reduce the potential for vessel-to-vessel interactions and other navigational risks.       | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works. |                                                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | X               | Development of and adherence to a Marine Pollution Contingency Plan.<br><br>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.                                                                                 | Implementation of a Marine Pollution Contingency Plan will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will reduce risks to vessel operations.                                                                                            | Tertiary        |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                              | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise risks to other marine users.                                                                                                                    | Tertiary        |
| ✓                          | ✓   | ✓               | Advance warning and accurate location details of construction, maintenance, and decommissioning activities, associated Safety Zones, and advisory passing distances will be given via notifications to mariners and Kingfisher Bulletins.                                                                                                                            | Advance notification of construction, O&M, and decommissioning activities, Safety Zones and advisory passing distances will provide mariners with timely information to support voyage planning and navigational decision-making. This will reduce the potential for conflicts between the Bellrock Offshore Transmission Infrastructure and vessel traffic. | Tertiary        |
| ✓                          | ✓   | ✓               | Ongoing liaison with commercial fishing interests will be maintained throughout construction, O&M, and decommissioning of the Bellrock Offshore Transmission                                                                                                                                                                                                         | Ongoing liaison with commercial fishing interests will facilitate communication between the Applicant and fishing vessel operators. This                                                                                                                                                                                                                     | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                       | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                               |                 |
|                            |     |                 | Infrastructure. A dedicated Fisheries Liaison Officer will be appointed during the construction phase. During O&M and decommissioning, appropriate fisheries liaison arrangements will be maintained, including the appointment of a Fisheries Liaison Officer, if required.                                                                                                                                                                                                         | will support awareness of the Bellrock Offshore Transmission Infrastructure and help reduce the potential for navigational conflicts between fishing and project vessels.                                                                                                                                                                     |                 |
| ✓                          | ✓   | ✓               | Where appropriate, guard vessels (or other suitable methods) will be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk to surface navigation during construction, O&M, and decommissioning phases.                                                                                                                                                                                  | Use of guard vessels, or other suitable measures, will support compliance with Safety Zones and advisory passing distances. This will improve awareness and reduce navigational risks to vessels operating in the vicinity of the Bellrock OFTDA.                                                                                             | Tertiary        |
| ✓                          | ✓   | ✓               | Development and implementation of a Development Specification and Layout Plan (DSLPL). A DSLPL will be prepared post-consent to finalise the layout of the Bellrock Offshore Transmission Infrastructure, including the OfSS(s) and OfRCS(s), in accordance with Marine Licence conditions. The DSLPL will be developed in consultation with the MCA and the NLB to ensure the final layout is compatible with navigational safety requirements, including potential SAR activities. | Implementation of the DSLPL will ensure the final layout of the Bellrock Offshore Transmission Infrastructure takes account of navigational safety requirements and stakeholder input. This will support the safe movement of vessels through and around the Bellrock OFTDA.                                                                  | Tertiary        |
| X                          | ✓   | X               | Sufficient information on the location and characteristics of the Bellrock Offshore Transmission Infrastructure will be provided to the UKHO to enable the Offshore Transmission Infrastructure to be accurately charted on physical and electronic nautical charts and associated publications.                                                                                                                                                                                     | Marking all relevant Bellrock Offshore Transmission Infrastructure on physical and electronic nautical charts will improve awareness of the Bellrock Offshore Transmission Infrastructure among mariners. This will support route planning and reduce the risk of vessel interactions with the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | X               | Compliance with MGN 654 and development and implementation of an Emergency Response Cooperation Plan (ERCoP). The Applicant will ensure                                                                                                                                                                                                                                                                                                                                              | Implementation of the ERCoP and compliance with MGN 654 will ensure appropriate arrangements are in place to support                                                                                                                                                                                                                          | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Relevance to Assessment                                                                                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |                 |
|                            |     |                 | compliance with MGN 654 and its annexes, where applicable, including consultation with the MCA, completion of a SAR checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support SAR and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities. | emergency response and SAR. This will help maintain navigational safety and facilitate effective coordination during emergency situations.                                                                                                                                  |                 |
| ✓                          | ✓   | X               | Marine coordination will be implemented to manage project vessels throughout construction, O&M, and decommissioning periods, including in liaison with relevant ports and harbours.                                                                                                                                                                                                                                                                                                                                                                                                                                      | Marine coordination will support the safe management of project vessel movements throughout construction, O&M and decommissioning. This will reduce the potential for vessel conflicts and support efficient use of the surrounding marine area.                            | Tertiary        |
| ✓                          | ✓   | ✓               | Project vessels will ensure compliance with international marine regulations as adopted by the Flag State, including COLREGs and SOLAS, thereby reducing the risk of navigational incidents, including vessel collisions, and associated risks to other sea users and the marine environment.                                                                                                                                                                                                                                                                                                                            | Compliance with international marine safety regulations will reduce the risk of navigational incidents involving project vessels. This will support the safety of other maritime users and reduce the likelihood of vessel collisions and near misses.                      | Tertiary        |
| ✓                          | ✓   | ✓               | An NRA will be developed for the Bellrock Offshore Transmission Infrastructure, which will include consideration of the OfSS(s) and OfRCS(s).                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The NRA will identify and evaluate navigational risks associated with the Bellrock Offshore Transmission Infrastructure and inform the development of appropriate risk control measures. This will support the safe operation of vessels in the vicinity of Bellrock OfTDA. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                          |                 |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme.</p> <p>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                      | Implementation of a Decommissioning Programme will ensure decommissioning is planned and undertaken in a safe, orderly and coordinated manner. This will minimise navigational risks associated with the removal/management of the Bellrock Offshore Transmission Infrastructure.                                        | Tertiary        |
| ✓                          | ✓   | ✓               | Lights, marks, sounds, signals, and other aids to navigation will be exhibited as required by NLB, MCA, and the Civil Aviation Authority including the buoyed construction/decommissioning areas.                                                                                                                                                                                                                                                                                                                           | Provision of lights, marks, sounds, signals and other aids to navigation will improve the visibility and awareness of the Bellrock Offshore Transmission Infrastructure. This will support safe navigation and reduce the risk of vessel interactions with the Bellrock Offshore Transmission Infrastructure.            | Tertiary        |
| ✓                          | X   | X               | Cable installation vessels and support vessels will display appropriate lights and marks at all times, and where possible, broadcast their status on AIS.                                                                                                                                                                                                                                                                                                                                                                   | Display of appropriate lights and marks, together with the use of AIS where practicable, will improve the visibility and identification of project vessels. This will support situational awareness and reduce the potential for vessel collisions.                                                                      | Tertiary        |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement.</p> <p>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.</p> | Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with measures in place to minimise risks to other sea users. This will support navigational safety throughout construction of the Bellrock Offshore Transmission Infrastructure. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                         | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                 |                 |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | Regular inspection and maintenance, including subsea surveys and removal of debris, where required, will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure and minimise the development of navigational hazards. This will support the continued safe operation of vessels within and around the Bellrock OFTDA. | Tertiary        |

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## 11.6 Scoping of Potential Impacts

### 11.6.1 Construction, Operation and Maintenance, and Decommissioning Phases

1043. The impacts that have been scoped into the assessment at this stage are provided below and summarised in **Table 11.4**. In line with MGN 654, no impacts are fully scoped out of the assessment at this stage, with the following exceptions:

- Where an impact is already assessed as part of the **Bellrock WFDA EIA Report** – this submission included an NRA which considered the OfSS(s) with respect to allision risk and emergency response capability. This approach was taken due to the need for these impacts to be considered for the Bellrock WFDA layout as a whole, i.e. inclusive of the Wind Farm Infrastructure and Offshore Transmission Infrastructure located within the WFDA. This is also outlined in **Section 11.1**; and
- Where an impact is not considered relevant for a particular phase given the embedded mitigation measures which are expected to be in place.

#### 11.6.1.1 Increased Vessel Displacement and Vessel to Vessel Collision Risk (Third Party to Third Party)

1044. The presence of the Bellrock Offshore Transmission Infrastructure and associated activities could increase the third party to third party vessel to vessel collision risk. Vessels may be displaced due to the presence of the Bellrock Offshore Transmission Infrastructure or buoyed construction/decommissioning area (i.e. the OfSS(s) and OfRCS(s)) and, as such, collision risk between third-party vessels may increase. This impact is therefore **scoped in** for all phases of the Bellrock Offshore Transmission Infrastructure. It is anticipated that decommissioning impacts would be similar in nature to those of construction.

#### 11.6.1.2 Increased Vessel Displacement and Vessel to Vessel Collision Risk (Third Party to Project Vessel)

1045. The presence of the Bellrock Offshore Transmission Infrastructure and associated activities could increase the third party to project vessel to vessel collision risk. Vessels may be displaced due to the presence of the Bellrock Offshore Transmission Infrastructure or buoyed construction/decommissioning area (i.e. the OfSS(s) and OfRCS(s)) and, as such, collision risk between third-party and project vessels may increase. This impact is therefore **scoped in** for all phases of the Bellrock Offshore Transmission Infrastructure. It is anticipated that decommissioning impacts would be similar in nature to those of construction.

#### 11.6.1.3 Creation of Vessel to Structure Allision Risk

1046. During O&M, the presence of permanent surface structures could create new allision risk for powered vessels, drifting vessels and any vessels navigating in proximity to the OfRCS(s). In addition, the presence of the OfRCS(s) may impact upon emergency response capability. This

impact is therefore **scoped in** for the O&M phase of the Bellrock Offshore Transmission Infrastructure.

#### 11.6.1.4 Reduction in Under-Keel Clearance

1047. The presence of subsea infrastructure including offshore export cables, interconnector cable(s), and associated cable/scour protection, if required, may increase under-keel interaction risk. This impact is therefore **scoped in** for the O&M phase of the Bellrock Offshore Transmission Infrastructure.

#### 11.6.1.5 Anchor Interaction with Subsea Cables

1048. The presence of subsea infrastructure including offshore export cables, interconnector cable(s), and associated cable/scour protection, if required, may create a risk of anchor interaction. This impact is therefore **scoped in** for the O&M phase of the Bellrock Offshore Transmission Infrastructure.

#### 11.6.1.6 Interference with Navigation, Communications, and Position-fixing Equipment

1049. The Bellrock Offshore Transmission Infrastructure (e.g. OfSS(s), OfRCS(s), offshore export cables or interconnector cable(s)) may impact equipment onboard vessels, including potential effects of electromagnetic interference from subsea cables. This impact is therefore **scoped in** for the O&M phase of the Bellrock Offshore Transmission Infrastructure.

#### 11.6.1.7 Reduction in SAR capability

1050. The presence of the OfRCS(s) may impact upon emergency response capability. This impact is therefore **scoped in** for the O&M phase of the Bellrock Offshore Transmission Infrastructure.

### 11.6.2 Bellrock OfTDA Whole Project Assessment

1051. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on shipping and navigation receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.

1052. As there will be no interaction with the Onshore Transmission Infrastructure for shipping and navigation, the Bellrock Onshore Transmission Development Area will not be relevant to the Bellrock OfTDA Whole Project Assessment for shipping and navigation receptors.

### 11.6.3 Potential Cumulative Effects

1053. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**, although with application of the IMO FSA approach as outlined in

**Section 11.7.** An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.

1054. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 11.6.2**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on marine geology, oceanography, and physical processes receptors.
1055. All impacts identified on an in-isolation basis will be considered within the NRA for the potential for cumulative effects. Plans and projects to be included in the CEA will be assessed based on the most recent publicly available information at the time with a screening exercise undertaken to determine which plans and projects should be considered and to what degree (through use of a tiering system). Factors which will be considered in the screening exercise include:
- Distance from the Bellrock OfTDA;
  - Development status;
  - Level of interaction with main commercial routes passing in proximity to the Bellrock OfTDA;
  - Consultation feedback; and
  - Data confidence level.
1056. This method will take international vessel operators and ports into consideration. To sufficiently capture effects, both base-case and future-case scenarios will be applied in terms of deviations for main commercial routes on a cumulative level.

#### 11.6.4 Potential Transboundary Effects

1057. Given the international nature of shipping, the in-isolation impact assessment and the cumulative effects assessment will consider vessel routing to and from international ports by international operators. Therefore, impacts listed in **Section 11.5** may be relevant at a transboundary level.

#### 11.6.5 Summary of Potential Impacts

1058. **Table 11.4** summarises the outcomes of the scoping assessment presented in **Section 11.6.1** to **Section 11.6.4**, identifying the relevant impacts for shipping and navigation and confirming whether these have been scoped in or scoped out of further assessment in the Bellrock OfTDA EIA.

**Table 11.4: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Shipping and Navigation**

| Potential Impact                                                                               | Users                | Scoped In or Scoped Out (✓ or X) |     |                 |
|------------------------------------------------------------------------------------------------|----------------------|----------------------------------|-----|-----------------|
|                                                                                                |                      | Construction                     | O&M | Decommissioning |
| Increased vessel displacement and vessel to vessel collision risk (third party to third party) | All vessels          | ✓                                | ✓   | ✓               |
| Increased vessel to vessel collision risk (third party to project vessel)                      | All vessels          | ✓                                | ✓   | ✓               |
| Creation of vessel to structure allision risk                                                  | All vessels          | X                                | ✓   | X               |
| Reduction in under-keel clearance                                                              | All vessels          | X                                | ✓   | X               |
| Anchor interaction with subsea cables                                                          | All vessels          | X                                | ✓   | X               |
| Interference with navigation, communications, and position-fixing equipment                    | All vessels          | X                                | ✓   | X               |
| Reduction in SAR capability                                                                    | Emergency responders | X                                | ✓   | X               |
| Bellrock OfTDA Whole Project Assessment                                                        | All receptors        | ✓                                | ✓   | ✓               |
| Cumulative effects                                                                             | All receptors        | ✓                                | ✓   | ✓               |
| Transboundary effects                                                                          | All receptors        | ✓                                | ✓   | ✓               |

## 11.7 Proposed Approach to Impact Assessment

1059. As required under the MCA methodology (Annex 1 to MGN 654) (MCA, 2021a) and in line with international marine risk assessment standards, the IMO FSA (IMO, 2018) approach will be applied to the assessment of effects.
1060. The FSA methodology is centred on risk control. The method assesses each hazard (impact) in terms of its frequency of occurrence and the severity of its consequence, to determine its significance as either 'broadly acceptable', 'tolerable' or 'unacceptable.' The FSA methodology risk matrix is shown in **Table 11.5**. Any impact assessed as 'unacceptable' will require additional mitigation measures implemented beyond those considered designed-in to reduce the impact to within 'tolerable with mitigation' or 'broadly acceptable' parameters.



**Table 11.5: IMO FSA Risk Matrix for Shipping and Navigation**

| Severity of Consequence | Frequency of Occurrence   |                           |                           |                           |                           |
|-------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|                         | Negligible                | Extremely Unlikely        | Remote                    | Reasonably Probable       | Frequent                  |
| <b>Major</b>            | Tolerable with Mitigation | Tolerable with Mitigation | Unacceptable              | Unacceptable              | Unacceptable              |
| <b>Serious</b>          | Broadly Acceptable        | Tolerable with Mitigation | Tolerable with Mitigation | Unacceptable              | Unacceptable              |
| <b>Moderate</b>         | Broadly Acceptable        | Broadly Acceptable        | Tolerable with Mitigation | Tolerable with Mitigation | Unacceptable              |
| <b>Minor</b>            | Broadly Acceptable        | Broadly Acceptable        | Broadly Acceptable        | Tolerable with Mitigation | Tolerable with Mitigation |
| <b>Negligible</b>       | Broadly Acceptable        | Broadly Acceptable        | Broadly Acceptable        | Broadly Acceptable        | Tolerable with Mitigation |

1061. The frequency and consequence rankings per hazard will be determined using a number of inputs, notably:

- Quantitative modelling (Anatec's COLLRISK software applied to the OfRCS(s));
- Outputs of the characterisation of the baseline;
- Consideration of proposed mitigation measures;
- Lessons learned from other offshore wind farm and subsea cable developments;
- Level of stakeholder concern;
- Consultation output; and
- Expert opinion.

1062. The following statutory and non-statutory organisations deemed relevant to shipping and navigation will be included in consultation, noting that additional organisations may be included if identified during the NRA process:

- MCA;
- NLB;
- UK Chamber of Shipping;
- RYA Scotland;
- Cruising Association;
- Scottish Fishermen's Federation; and
- Regular commercial operators (identified from the vessel traffic data).

## 11.8 Scoping Questions to Consultees

1063. The following questions are posed to consultees to help them frame and focus their response to the shipping and navigation scoping exercise, which will in turn inform the EIA:

- Do you agree that all relevant data sources have been identified in **Section 11.4.2**?
- Do you agree that the legislation, policy and guidance proposed for consideration as part of the Bellrock OfTDA EIA Report (including the NRA) is suitable and sufficient?
- Do you agree with the proposed study areas as presented in **Section 11.4.1**?
- Do you agree that the data sources will be sufficient to inform the NRA and the Bellrock OfTDA EIA baseline for shipping and navigation?
- Do you agree that the methodology outlined for undertaking the risk assessment is suitable for the Bellrock Offshore Transmission Infrastructure alone and cumulatively with other plans and projects?
- Do you agree that all potential hazards (impacts) from the Bellrock Offshore Transmission Infrastructure and associated activities have been identified for shipping and navigation users?
- Do you agree that the mitigation measures (**Section 11.5.1**) described are suitable and sufficient for managing and mitigating risk associated with the potential hazards?
- Do you agree layout related impacts (allision, emergency response) associated with the Bellrock OfSS(s) have already been addressed in the **Bellrock WFDA EIA Report** and will not be repeated in the Bellrock OfTDA EIA, but will be considered within the Bellrock OfTDA Whole Project Assessment and CEA as appropriate?
- Do you have any other matters or information sources that you wish to present?

## 11.9 References

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UKHO (2026). Admiralty Charts 273, 278, 1407, and 1409. Taunton: UKHO.

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# 12 Aviation and Radar

## 12.1 Introduction

1064. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on aviation and radar.
1065. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence application.
1066. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1067. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1068. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1069. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on aviation and radar receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Cyrrus Limited.
1070. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 13: Marine Infrastructure and Other Users**; and
  - **Chapter 19: Major Accidents and Disasters**.
1071. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 12.2 Legislation, Policy and Guidance

1072. **Table 12.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching policy and legislation relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 12.1: Summary of Relevant Legislation, Policy and Guidance for Aviation and Radar**

| Relevant Legislation, Policy and Guidance                                   | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Air Navigation Order 2016, SI2016/765 Civil Aviation Authority (CAA) (2022) | <p>The Air Navigation Order implements the United Kingdom's (UK) obligations under the Chicago Convention on International Civil Aviation and regulates aspects of aviation safety. It provides regulatory and enforcement powers for the CAA needed in respect of retained safety legislation.</p> <p>Aerodromes and Lighting, articles 222 and 223 contain information on the lighting of en route obstacles and offshore wind turbines in UK territorial waters.</p> |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                         | Relevance to the Assessment                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Policy</b>                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                            |
| CAA Policy and Guidelines on Wind Turbines. Civil Aviation Publication (CAP) 764, CAA (2025a)                                                                                                                     | Details CAA policy and guidelines associated with wind turbine generators (WTGs <sup>1</sup> ) and associated structures (i.e. OfSS(s) and OfRCS(s)) impacts on aviation that aviation stakeholders and wind energy developers need to consider when assessing a development's viability.  |
| <b>Guidance</b>                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                            |
| The convention of International Civil Aviation: Aerodrome Design and Operations, Annex 14, International Civil Aviation Organisation (2022)                                                                       | Includes recommendations for the marking and lighting of WTGs and tall structures, e.g. OfSS(s).                                                                                                                                                                                           |
| Safety of Navigation: Offshore Renewable Energy Installations – Guidance on UK Navigational Practice, Safety, and Emergency Response. Marine Guidance Note (MGN) 654, Maritime and Coastguard Agency (MCA) (2021) | MGN 654 highlights issues to consider when assessing navigational safety and emergency response, caused by Offshore Renewable Energy Installations.                                                                                                                                        |
| Aeronautical Information Publication (AIP). CAP 032, UK CAA (2026a)                                                                                                                                               | Contains information on facilities, services, rules, regulations and restrictions in UK airspace.                                                                                                                                                                                          |
| UK Military AIP, Ministry of Defence (MOD) (2026)                                                                                                                                                                 | Contains information on facilities, services, rules, regulations and restrictions in regard to military airspace.                                                                                                                                                                          |
| Safeguarding of Aerodromes. CAP 738, CAA (2020)                                                                                                                                                                   | Document offers guidance to those responsible for the safe operation of an aerodrome or a technical site, to help them assess what impact a proposed development or construction might have on that operation.                                                                             |
| Air Traffic Services Safety Requirements. CAP 670, CAA (2019)                                                                                                                                                     | Highlights the requirements to be met by providers of civil Air Traffic Services (ATS) and other services in the UK in order to ensure that those services are safe for use by aircraft.                                                                                                   |
| Licensing of Aerodromes. CAP 168, CAA (2025b)                                                                                                                                                                     | Sets out the standards required at UK licenced aerodromes relating to management systems, operational procedures, physical characteristics assessment and treatment of obstacles and visual aids.                                                                                          |
| Standards for Offshore Helicopter Landing Areas. CAP 437, CAA (2026b)                                                                                                                                             | CAP 437 provides the criteria applied by the CAA in assessing offshore helicopter landing areas for worldwide use by helicopters registered in the UK and includes winning area 'best practice' design criteria for WTGs and associated structures.                                        |
| UK Flight Information Services. CAP 774, CAA (2021)                                                                                                                                                               | Details the suite of ATS which (excluding aerodrome services) are the only services provided in class G airspace within the UK Flight Information Region (FIR) and where notified, elements of which are also provided to Visual Flight Rules (VFR) flights operating in class E airspace. |

| Relevant Legislation, Policy and Guidance                                                                                                                                                | Relevance to the Assessment                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| CAA (2025c) Airspace Change Process. CAP 1616                                                                                                                                            | Explains the CAAs regulatory process for changes to airspace. |
| <p>Notes:</p> <p><sup>1</sup> Potential impact of WTGs has been assessed in the <b>Bellrock WFDA EIA Report</b>, Volume II, Chapter 13: Aviation and Radar. Submitted in April 2026.</p> |                                                               |

## 12.3 Consultation

1073. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package set out the proposed approach to aviation and radar for the Bellrock OfTDA EIA. No feedback on aviation and radar was received. No other consultation relevant to aviation and radar has taken place to date specifically for the Bellrock Offshore Transmission Infrastructure, although relevant consultation from the Bellrock WFDA application will be considered where appropriate and additional consultation will be undertaken as part of the Bellrock OfTDA EIA, following receipt of the Scoping Opinion from the Marine Directorate Licensing Operations Team.
1074. Aviation stakeholders potentially affected include the CAA, the MOD, NATS, Aberdeen International Airport, and offshore helicopter operators such as Bristow Group, who currently deliver the UK Search and Rescue (SAR) contract on behalf of His Majesty's Coastguard.

## 12.4 Existing Environment

### 12.4.1 Study Area

#### 12.4.1.1 Overview

1075. The aviation and radar study area is shown in **Figure 12.1 (Appendix A (Volume 1))** and includes the Bellrock OfTDA Scoping Boundary and airspace associated with airports and radars in the vicinity of the Bellrock OfTDA.
1076. The following criteria have been used to identify receptors within the aviation and radar study area (and are discussed further below):
- Civil aerodromes;
  - MOD;
  - Civil, military and meteorological radars; and
  - Other aviation activities.



1077. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The aviation and radar study area will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4** of **Chapter 1: Introduction**). No additional buffer is considered necessary for aviation and radar receptors.

#### 12.4.1.2 Civil Aerodromes

1078. CAP 764 Policy and Guidelines on Wind Turbines (CAA, 2025a) provides guidance on the potential impacts of wind farm developments on aviation receptors. CAP 764 states the distances from various aerodromes where consultation is necessary when developing a wind farm. Whilst these distances primarily focus on WTGs potential to impact aerodromes, they serve as a useful indication for surface-piercing Offshore Transmission Infrastructure (i.e. OfSS(s) and OfRCS(s)). These distances include:
- Non-radar equipped licenced aerodromes with a runway of more than 1,100 m, within 17 km of the OfTDA;
  - Airspace associated with Instrument Flight Procedures (IFPs) to take account of the aerodrome's requirements;
  - Unlicenced aerodromes with runways of more than 800 m, within 4 km of the OfTDA;
  - Unlicenced aerodromes with runways of less than 800 m, within 3 km; of the OfTDA
  - Gliding sites, within 10 km of the OfTDA; and
  - Other aviation activities such as parachute sites and microlite sites, within 3 km of the OfTDA.
1079. CAP 764 states that these distances are for guidance purposes only and do not represent ranges beyond which all wind farm developments will be approved or within which they will be objected to.
1080. It is also necessary to consider the physical safeguarding of air traffic control (ATC) operations using the criteria laid down in CAP 168 Licensing of Aerodromes (CAA, 2025b) to determine whether the Bellrock Offshore Transmission Infrastructure will breach obstacle clearance criteria.

#### 12.4.1.3 Ministry of Defence

1081. It is necessary to consider aviation and other activities of the MOD. This includes:
- MOD airfields; and
  - MOD Practice and Exercise Areas (PEXAs) for both aviation and non-aviation activities.

#### 12.4.1.4 Civil, Military and Meteorological Radars

1082. All surface-piercing structures (i.e. the OfSS(s) and OfRCS(s)) associated with the Bellrock OfTDA will be stationary (fixed and not rotating like WTGs). The OfSS(s) will be contained within the section of Bellrock OfTDA which overlaps with the Bellrock WFDA, located 120 km east from Stonehaven (**Figure 12.1 (Appendix A (Volume 1))**). The OfRCS(s) will be located a minimum of 39 km (21.1 nm) from the coastline (MHWS) (as shown on **Figure 12.1 (Appendix A (Volume 1))**) and therefore are outside any technical safeguarding zone in which a static obstacle could have a

detrimental impact on a Primary Surveillance Radar (PSR)/Secondary Surveillance Radar (SSR) system. Therefore, there is no need to identify any civil, military and meteorological radar systems and radar is scoped out of the EIA.

#### 12.4.1.5 Other Aviation Activities

1083. Other aviation activities of relevance could include:

- General military low flying operations;
- Military and civilian 'off-route' fixed-wing and helicopter operations including SAR missions and offshore helicopter operations in support of the oil and gas and wind industries; and
- Other aviation activity.

### 12.4.2 Data and Information Sources

1084. For the purposes of this **Bellrock OfTDA Scoping Report**, a desk-based review of existing and known activities was undertaken using relevant spatial and scientific data sources.

1085. The data sources that have been used to inform this Chapter are presented in **Table 12.2**. The primary sources of aviation data are UK civil and military AIPs. The AIPs contain details on airspace and enroute procedures as well as charts and other air navigation information. These identified data sources will be taken forward and used to inform the subsequent EIA.

**Table 12.2: Summary of Key Data and Information Sources for Aviation and Radar**

| Dataset                                                      | Year(s) | Description                                                                                                                                                                                                                                  |
|--------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wind farm self-assessment maps, NATS                         | 2012    | Maps provided by NATS to ascertain potential impacts of WTGs on their enroute electronic infrastructure. Contains the locations of their infrastructure including PSR and SSRs. Provides full coverage of the aviation and radar study area. |
| Offshore infrastructure data, North Sea Transition Authority | 2025    | Regularly updated North Sea Transition Authority offshore oil and gas platform shapefiles. Provides full coverage of the aviation and radar study area.                                                                                      |
| CAP 032 UK AIP (CAA, 2026a)                                  | 2026    | Contains information on facilities, services, rules, regulations, and restrictions in UK airspace. Provides full coverage of the aviation and radar study area.                                                                              |
| UK Military AIP, MOD                                         | 2026    | The main resource for information on flight procedures at all military aerodromes. Provides full coverage of the aviation and radar study area.                                                                                              |

### 12.4.3 Civil Aviation

1086. The airspace above the Bellrock OfTDA Scoping Boundary is used by both civil and military aircraft and lies within the Scottish FIR for ATC. This airspace is regulated by the UK CAA. The Scottish FIR is adjacent to the Polaris FIR, regulated by CAA Norway. The boundary of the Polaris FIR is around 221 km northeast of the Bellrock OfTDA Scoping Boundary at its closest point (see **Figure 12.6 (Appendix A (Volume 1))**).
1087. Airspace is classified as either controlled or uncontrolled and is divided into a number of classes depending on what kind of ATS is provided and under what conditions. In the UK there are five classes of airspace: specifically; A, C, D, E and G. The first four are controlled airspace while class G is uncontrolled. Within controlled airspace, aircraft are monitored and instructed by ATC. Aircraft within uncontrolled airspace, are not subject to ATC instruction but rather operate according to a simple set of regulations. ATC may still provide information, if requested, to ensure flight safety.
1088. Aircraft operate under one of two flight rules: VFR or Instrument Flight Rules. VFR is conducted with visual reference to the natural horizon whereas Instrument Flight Rules flight requires reference solely to aircraft instrumentation.
1089. From sea level to Flight Level (FL) 195 (approximately 19,500 ft above Mean Sea Level (MSL)<sup>42</sup>, the airspace above most of the Bellrock OfTDA is Class G uncontrolled airspace. The airspace within this area is predominately used by low level flight operations and generally by aircraft flying under VFR. Under VFR the pilot is responsible for maintaining a safe distance from terrain, obstacles and other aircraft.
1090. Above the western section of the Bellrock OfTDA Scoping Boundary is controlled airspace, the Tay Control Area (CTA) which is divided into CTAs 1 to 13. Of these elements, the Bellrock OfTDA Scoping Boundary overlaps Tay CTA 10, 11, and 12, all of which are class D airspace. The Bellrock OfTDA also overlaps the Moray CTA 1, Aberdeen Control Zone (CTR), Aberdeen CTA 2, and Aberdeen CTA 3. All civil airspace within the vicinity of the Bellrock OfTDA Scoping Boundary is presented in **Figure 12.2 (Appendix A (Volume 1))**. Lower and upper limits of airspace overlapping the Bellrock OfTDA Scoping Boundary are listed in **Table 12.3**.

**Table 12.3: Civil Airspace Limits Above the Bellrock OfTDA**

| Airspace       | Lower Limit                               | Upper Limit                               |
|----------------|-------------------------------------------|-------------------------------------------|
| Tay CTA 10     | FL115 (approximately 11,500 ft above MSL) | FL195 (approximately 19,500 ft above MSL) |
| Tay CTA 11     | 4,500 ft above MSL                        | FL115                                     |
| Tay CTA 12     | FL75 (approximately 7,500 ft above MSL)   | FL115                                     |
| Aberdeen CTA 2 | 1,500 ft above MSL                        | FL115                                     |

<sup>42</sup> In aviation, altitudes are approximate to sea-level. Unless stated otherwise, the height of Offshore Transmission Infrastructure is quoted as above MSL.

| Airspace       | Lower Limit        | Upper Limit |
|----------------|--------------------|-------------|
| Aberdeen CTA 3 | 3,000 ft above MSL | FL115       |
| Aberdeen CTR   | Surface Level      | FL115       |
| Moray CTA 1    | 4,500 ft above MSL | FL195       |

1091. Potential towage routes for OfSS(s) or OfRCS(s) between their assembly or marshalling port. The nearest civil airspace between the Bellrock OfTDA and Scottish coast that towage operations may impact is Aberdeen CTR, located approximately 45 km to the west of the Bellrock OfTDA at its closest extent. This airspace is class D controlled airspace, from surface level to FL115 (approximately 11,500 ft above MSL). These separation distances will increase if the OfTDA EIA boundary is reduced from the OfTDA Scoping Boundary.
1092. There are two Transponder Mandatory Zones (TMZs) within the vicinity of the Bellrock OfTDA. Located approximately 3.7 km and 43.3 km to the southwest of the Bellrock OfTDA, are the Seagreen (Phase One) TMZ and Nearth Na Gaoithe (NNG) TMZ respectively as shown in **Figure 12.2 (Appendix A (Volume 1))**. Within a TMZ the carriage and operation of aircraft transponder equipment is mandatory. This enables such aircraft to be detected and tracked by SSR systems. The Seagreen (Phase One) TMZ surrounds the Seagreen Offshore Wind Farm and NNG TMZ surrounds both NNG and Inch Cape Offshore Wind Farms. These TMZs are used to mitigate the impact the associated WTGs have on PSR. Both of these TMZs are active from sea level to FL100 (approximately 10,000 ft above MSL).
1093. Above the Bellrock OfTDA Scoping Boundary from FL195 to FL245 (approximately 19,500 to 24,500 ft above MSL respectively), is the Temporary Reserved Area (TRA) 007A and TRA 007B both of which are class C airspace. This airspace is available for both military and civil aircraft, though its main use is to accommodate VFR military flying activity. Above TRA 007A and TRA 007B, the upper limit of class C airspace is FL660 (approximately 66,000 ft above MSL).
1094. The nearest UK civil airport to the Bellrock OfTDA is Aberdeen International Airport, situated approximately 15.8 km to the northwest of the Bellrock OfTDA Scoping Boundary as shown in **Figure 12.1 (Appendix A (Volume 1))**. Aberdeen International Airport is Scotland's third busiest airport, the 16<sup>th</sup> busiest in the UK, and is the main heliport for the offshore North Sea oil and gas industry.
1095. Aberdeen International Airport IFPs could be impacted by the OfRCS(s) and OfSS(s) and/or OfRCS(s) if any part of the towage route or infrastructure is located within approximately 40 nm (74 km) of the airport. Other civil airports may be impacted if the towing route is coincidental with published IFPs. The towing of OfSS(s) and/or OfRCS(s) will consider the consultation ranges as highlighted in **Section 12.4.1.2**.

#### 12.4.4 Military Aviation

1096. The Bellrock OfTDA Scoping Boundary is situated within the Central Managed Danger Area, one of four Managed Danger Area complexes within UK airspace that, when activated, provide segregated airspace for military flying training. The Bellrock OfTDA is positioned below EG D613A, EG D613B and EG D613C, all of which have lower and upper airspace limits of FL100 and FL660 respectively (approximately 10,000 to 66,000 ft above MSL). Ordnance, munitions and explosives and high energy manoeuvre activities take place within these danger areas.
1097. The Bellrock OfTDA Scoping Boundary is within the vicinity of air-to-air refuelling areas (AARAs) 03, 04, and 05. AARA 03 is located approximately 77 km to the northeast of the western section of the Bellrock OfTDA Scoping Boundary, which overlaps with the Bellrock WFDA and will contain the OfSS(s). AARA 03 has vertical limits of FL100 to FL290 (approximately 10,000 to 29,000 ft above MSL respectively). AARA Area 04 is situated approximately 46 km to the northwest of the Bellrock OfTDA Scoping Boundary and AARA 05 is located approximately 80 km to the south and both occupy a vertical limit of FL70 to FL240 (approximately 7,000 to 24,000 ft above MSL respectively). All three mentioned AARAs are permanently available to military air traffic.
1098. Dependant on the towing route of the OfSS(s) and/or OfRCS(s), the MOD will be consulted on the time and location of the towing operations if the route is to penetrate low-altitude military PEXAs. The nearest low-altitude PEXA to the Bellrock OfTDA is Moray Firth (south), EG D809S, located approximately 102 km to the northwest of the Bellrock OfTDA. This airspace is active from sea level to 55,000 ft above MSL, with activities within this airspace including ordnance, munitions and explosives/unmanned aircraft system and high energy manoeuvres.
1099. All military airspace mentioned above is depicted in **Figure 12.3 (Appendix A (Volume 1))**. There are no known further PEXAs within the aviation and radar study area, including PEXAs associated with non-aviation activities.

#### 12.4.5 Helicopter Main Routing Indicators

1100. Helicopter Main Routing Indicators (HMRIs) are a network of offshore routes used by civilian helicopters to navigate over the North Sea in support of offshore oil and gas facilities and wind farm projects. The north section of the OfRCS Area of Search and western section of the Bellrock OfTDA Scoping Boundary, which overlaps the Bellrock WFDA and contain the OfSS(s) is overlapped by the centrelines of HMRIs 110, 113 and 116. These HMRI routes may be used to access oil and gas platforms such as BW Catcher, AUK Alpha and Clyde.
1101. Helicopters flying these routes may be required to fly extended routes around surface-piercing infrastructure within the OfTDA. All HMRIs within the vicinity of the Bellrock OfTDA Scoping Boundary are depicted in **Figure 12.4 (Appendix A (Volume 1))**.

#### 12.4.6 Helidecks

1102. There are a number of offshore helidecks within the vicinity of the Bellrock OfTDA Scoping Boundary. To achieve a safe operating environment under low visibility, a consultation zone with a 9 nm radius is present around each offshore oil and gas platform helideck. This means obstacles such as OfSS(s) and OfRCS(s) within this radius must be consulted on with the helideck operators to maintain safe offshore helicopter operations.

1103. The nearest active oil and gas helideck, located 12.6 nm (23.4 km) to the east of the Bellrock OfTDA Scoping Boundary, is BW Catcher. The Bellrock OfTDA above sea-level infrastructure is therefore located outside of the consultation zone for the nearest offshore helideck at BW Catcher. Offshore oil and gas helidecks and their consultation zones are presented in **Figure 12.5 (Appendix A (Volume 1))**.

### 12.4.7 Search and Rescue

1104. Bristow Group currently operate SAR operations in the vicinity of the Bellrock OfTDA. For SAR operations to be carried out safely and efficiently, they require developers to fulfil wind farm spacing, marking and lighting requirements set out by the MCA and Northern Lighthouse Board. The nearest SAR helicopter facility to the Bellrock OfTDA Scoping Boundary is Inverness Airport, located 128 km to the northwest of the Bellrock WFDA as shown in **Figure 12.1 (Appendix A (Volume 1))**.

## 12.5 Potential Impacts

1105. Up to six OfSS(s) (located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA) and up to two OfRCS(s) within the OfRCS Area of Search, with a maximum height of 90 m and 70 m above MSL<sup>43</sup> respectively, have the potential to impact aviation receptors by their physical obstruction, and are therefore considered in this **Bellrock OfTDA Scoping Report**.
1106. The OfSS(s) and OfRCS(s) will use fixed-bottom substructures. Jack-up vessels with tall cranes involved in the construction, O&M, and decommissioning phases of these structures are also considered in this **Bellrock OfTDA Scoping Report**.
1107. A range of potential impacts on aviation have been identified which may occur during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, specifically related to the OfSS(s) and OfRCS(s).
1108. OfSS(s) and OfRCS(s) have the potential to affect aviation (fixed-wing and helicopters), either through their physical dimensions limiting access and affecting safe passage.
1109. Aberdeen International Airport IFPs could be impacted by the OfRCS(s) if located within approximately 40 nm (74.08 km) of the airport.
1110. The creation of a new obstacle environment increases the risk of collision for military low flying aircraft, helicopters in support of the oil and gas industry and SAR operations.
1111. Helicopter activities (if any) in support of the Bellrock Offshore Transmission Infrastructure may raise the overall level of traffic in the area and increase the likelihood of aircraft-to-aircraft collision.

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<sup>43</sup> In aviation, altitudes are approximate to sea-level. Unless stated otherwise, the height of infrastructure is Above MSL.

1112. There are no predicted impacts to aviation and radar from the offshore export cable or interconnector cable infrastructure as this will be located below sea level.

### 12.5.1 Embedded Mitigation Measures

1113. Embedded mitigation has been identified, as presented in **Table 12.4** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (i.e. inherent design measures) and tertiary (i.e. standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
1114. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 12.4: Embedded Mitigation Measures Relevant to Aviation and Radar**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                         |                 |
| ✓                          | ✓   | ✓               | <p>Development of, and adherence to, a Lighting and Marking Plan (LMP).</p> <p>The LMP will set out the lighting and marking requirements for the Bellrock Offshore Transmission Infrastructure during the construction, O&amp;M, and decommissioning phases, including compliance with all relevant navigation and aviation legislative requirements. The LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst maintaining compliance with these requirements. Procedures will also be established for the reporting and timely rectification of lighting and marking failures, with interim hazard warnings implemented where required.</p>                                                                                               | Implementation of the LMP will ensure that the Bellrock Offshore Transmission Infrastructure is appropriately lit and marked in accordance with relevant aviation requirements. This will support aviation safety by improving the visibility of structures to aircraft and ensuring that any failures are identified and rectified in a timely manner. | Tertiary        |
| ✓                          | ✓   | X               | <p>Compliance with MGN 654 and development and implementation of an Emergency Response Cooperation Plan (ERCoP). The Applicant will ensure compliance with MGN 654 and its annexes, where applicable, including consultation with the MCA, completion of a SAR checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&amp;M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support SAR and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities.</p> | Implementation of the ERCoP and compliance with MGN 654 will ensure appropriate arrangements are in place to support SAR and other emergency responses. This will help maintain aviation safety and facilitate effective coordination during emergency situations.                                                                                      | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                          |                 |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme.</p> <p>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                              | Implementation of a Decommissioning Programme will ensure that decommissioning is planned and undertaken in a safe, orderly and coordinated manner. This will minimise aviation safety risks associated with temporary structures, vessels and decommissioning.                                                                                                          | Tertiary        |
| ✓                          | ✓   | X               | Appropriate marking of the Bellrock OfTDA on aeronautical charts. This will include provision of the positions and heights of structures to CAA, MOD, and Defence Geographics Centre.                                                                                                                                                                                                                                                               | Provision of accurate Bellrock Offshore Transmission Infrastructure positions and heights for inclusion on aeronautical charts will improve awareness of the Bellrock Offshore Transmission Infrastructure among airspace users. This will support flight planning and help reduce the risk of aircraft interactions with Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | ✓               | Lights, marks, sounds, signals, and other aids to navigation will be exhibited as required by the Northern Lighthouse Board, MCA, and the CAA including the buoyed construction/decommissioning areas.                                                                                                                                                                                                                                              | Provision of lights, marks and other aids as required by the relevant authorities will enhance the visibility and awareness of the Bellrock Offshore Transmission Infrastructure. This will support aviation safety through improved identification of the Bellrock Offshore Transmission Infrastructure and activity areas.                                             | Tertiary        |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement.</p> <p>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and</p> | Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with appropriate procedures in place to manage safety risks. This will help minimise potential impacts on aviation operations during the construction phase.                                                                     | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                         |                 |
|                            |     |                 | responsibilities and reference to relevant Health and Safety protocols.                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                         |                 |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | Regular inspection and maintenance will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure throughout its operational life. This will ensure that aviation safety measures, including lighting and marking, remain effective and that any defects are addressed promptly. | Tertiary        |

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## 12.6 Scoping of Potential Impacts

### 12.6.1 All Phases

#### 12.6.1.1 Creation of an Aviation Obstacle Environment

1115. The creation of an obstacle environment is an impact that is **scoped in** for the construction, O&M, and decommissioning phases of the Bellrock OfTDA. All phases of the Bellrock OfTDA may involve vessels, notably the use of tall 'crane vessels' (with a height exceeding 60 m above MSL) for the OfSS(s) and OfRCS(s), which may create a physical obstruction above the sea level and are scoped in to the EIA. All vessels below 60 m would not create an obstacle to civil and military low flying aircraft and are therefore **scoped out** of the EIA. The presence of the OfSS(s) and OfRCS(s) themselves could also pose a physical obstruction to civil and military low flying aircraft (including SAR operations and helicopters involved in offshore oil and gas activities), aircraft traversing using HMRI 110, 113, and 116, increasing the risk of collision or requiring aircraft to fly extended routes to avoid obstructions.

#### 12.6.1.2 Increased Air Traffic in the Area Related to the OfSS(s) and OfRCS(s)

1116. Increased air traffic associated with the OfSS(s) and OfRCS(s) is an impact **scoped in** for the construction, O&M, and decommissioning phases. Helicopters operations during this stage of the Bellrock Offshore Transmission Infrastructure may interact with existing air traffic in the area, thereby increasing the risk of aircraft-to-aircraft collisions. Potentially impacted air traffic includes helicopters supporting offshore oil and gas activities, and SAR operations.

#### 12.6.1.3 Impacts on Civil, Military and Meteorological PSR/SSR Systems

1117. The impact to any PSR and SSR system has been **scoped out** as the Offshore Transmission Infrastructure is stationary (i.e. fixed, not rotating like WTGs). The nearest above sea level Offshore Transmission Infrastructure to a PSR and SSR is the OfRCS(s). The OfRCS Area of Search is located at least 46 km to the east southeast of the NATS Perwinnes, beyond the range at which a stationary object may impact a PSR or SSR system.
1118. There are no predicted impacts to aviation and radar from the offshore cable infrastructure as all offshore cable infrastructure will be located below sea level.

### 12.6.2 Bellrock OfTDA Whole Project Assessment

1119. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects identified for aviation and radar receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.

### 12.6.3 Potential Cumulative Effects

1120. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the general methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
1121. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 12.6.2**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on aviation and radar receptors.
1122. The CEA will consider the potential impacts in combination with other existing and future offshore wind farms and associated projects and plans, including increased collision risk. The wind farms and other projects and plans relevant to the CEA will be identified through a screening exercise. Consultation with other offshore wind farm project developers and other users of the aviation and radar study area will be undertaken to understand what mitigations exist or are planned and how these may impact or harmonise with potential mitigations for the Bellrock Offshore Transmission Infrastructure.
1123. The aviation and radar CEA for the Bellrock Offshore Transmission Infrastructure will consider the maximum Project Design Envelope for each adjacent project and any associated activities in line with the methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

### 12.6.4 Potential Transboundary Effects

1124. The potential impacts of the OfSS(s) and OfRCS(s) on aviation are localised and the Bellrock OfTDA is completely within UK airspace, with the nearest Norwegian operated airspace, Polaris FIR located approximately 224 km to the northeast of the Bellrock OfTDA Scoping Boundary.
1125. Due to the localised nature of any potential impacts, transboundary impacts are unlikely to occur and therefore it is proposed that transboundary impacts are **scoped out** from further consideration within the Bellrock OfTDA EIA.

### 12.6.5 Summary of Potential Impacts

1126. Taking account of the embedded mitigation measures detailed in **Section 12.5.1**, the impacts that have been scoped in and scoped out of the EIA are outlined in **Table 12.5**, which also presents a summary of potential impacts described in this section.

**Table 12.5: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Aviation and Radar**

| Potential Impact                                              | Receptor(s)                                                                                                                                                                                                                                                               | Scoped In or Scoped Out? (✓ or X) |     |                 |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----|-----------------|
|                                                               |                                                                                                                                                                                                                                                                           | Construction                      | O&M | Decommissioning |
| Creation of an aviation obstacle environment                  | <ul style="list-style-type: none"> <li>Low flying aircraft</li> <li>SAR operations (Bristow Group, HM Coastguard and MCA)</li> <li>Offshore oil and gas industry (HMRIs)</li> <li>Military and civil aerodromes</li> <li>Low lying military and civil airspace</li> </ul> | ✓                                 | ✓   | ✓               |
| Increased air traffic in the area of the OfSS(s) and OfRCS(s) | <ul style="list-style-type: none"> <li>SAR operations (Bristow Group, HM Coastguard and MCA)</li> <li>Offshore oil and gas industry (HMRIs)</li> <li>Low flying aircraft</li> </ul>                                                                                       | ✓                                 | ✓   | ✓               |
| Impacts on civil, military and meteorological PSR/SSR systems | No receptors identified within the study area                                                                                                                                                                                                                             | X                                 | X   | X               |
| Bellrock OfTDA Whole Project Assessment                       | Relevant receptors as listed above for each impact                                                                                                                                                                                                                        | ✓                                 | ✓   | ✓               |
| Cumulative effects                                            | Relevant receptors as listed above for each impact                                                                                                                                                                                                                        | ✓                                 | ✓   | ✓               |
| Transboundary effects                                         | Relevant receptors as listed above for each impact                                                                                                                                                                                                                        | X                                 | X   | X               |

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## 12.7 Proposed Approach to Impact Assessment

1127. A thorough, desk-based collation and review of the relevant data will be undertaken to inform the subsequent Bellrock OFTDA EIA. Studies will be undertaken in parallel with consultation with relevant stakeholders to provide a detailed understanding of potential impacts. It is expected that the consultation stage will be an iterative process, allowing for any concerns to be addressed during the pre-application phase and in finalising the Bellrock OFTDA EIA Report. The aviation and radar assessment will comply with the guidance laid out in documents listed in **Section 12.2**.

## 12.8 Scoping Questions to Consultees

1128. The following questions are posed to consultees to help them frame and focus their response to the aviation and radar scoping exercise, which will in turn inform the EIA:
- Do you agree that all relevant data sources have been identified in **Section 12.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 12.2**?
  - Do you agree with the proposed aviation and radar study area as presented in **Section 12.4.1**?
  - Do you agree that the data sources will be sufficient to inform the Bellrock OFTDA EIA baseline for aviation and radar?
  - Do you agree the embedded mitigation measures listed in **Table 12.4** are suitable?
  - Do you agree that all receptors related to aviation and radar have been identified?
  - Do you agree with the scoping in and scoping out of the impact pathways in relation to aviation and radar?
  - Do you agree with the assessment of transboundary effects in relation to aviation and radar?
  - Do you agree with the assessment of cumulative effects in relation to aviation and radar?
  - Do you have any other matters or information sources that you wish to present?

## 12.9 References

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# 13 Marine Infrastructure and Other Users

## 13.1 Introduction

1129. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on marine infrastructure and other users.
1130. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1131. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1132. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1133. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1134. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on marine infrastructure and other user receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
1135. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 11 Shipping and Navigation;**
  - **Chapter 12 Aviation and Radar;**
  - **Chapter 16 Socioeconomics and Tourism; and**
  - **Chapter 19 Major Accidents and Disasters.**
1136. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 13.2 Legislation, Policy and Guidance

1137. **Table 13.1** sets out the legislation, policy and guidance which have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching legislation and policy relevant to the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 13.1: Summary of Legislation, Policy and Guidance Relevant to Marine Infrastructure and Other Users**

| Relevant Legislation, Policy and Guidance | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Energy Act 2004                           | <p>The Energy Act 2004, specifically Sections 95 to 101, provides for the establishment of Safety Zones around offshore renewable energy installations during construction, O&amp;M, and decommissioning.</p> <p>These Safety Zones have the potential to impact marine infrastructure and other users and as such have been considered in this Chapter (<b>Section 13.5</b>). Impacts on shipping and navigational safety are considered in <b>Chapter 11 Shipping and Navigation</b>.</p> |

| Relevant Legislation, Policy and Guidance                                      | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009              | Marine (Scotland) Act 2010 and Marine and Coastal Access Act 2009 Part 3 (Marine Planning) and Part 4 (Marine Licensing) provide legislative framework for marine planning and marine licensing within Scottish inshore waters (0 to 12 nautical miles (nm)) and offshore waters (12 to 200 nm), respectively. The Acts are relevant to the assessment of potential impacts on marine infrastructure and other users. Compliance with relevant marine planning policies and marine licensing requirements is considered throughout this Chapter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Policy</b>                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| United Kingdom (UK) Marine Policy Statement (UK Government, 2011)              | <p>The UK Marine Policy Statement is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It informs the standard approach to planning and decision making regarding Marine Plans. Many sections are of note to infrastructure and marine users, including:</p> <p><i>“The evidence base will be developed from a wide range of sources including existing plans, the plan area community, science advisors, statutory and other advisors, industry and other marine users.”</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Scotland's National Marine Plan (SNMP) (2015) (Scottish Government, 2015)      | <p>SNMP sets out strategic policies for the sustainable development of Scotland's marine resources out to 200 nm. The Plan highlights Marine planning policies applicable to infrastructure and other marine users, including interactions with other users and includes:</p> <ul style="list-style-type: none"> <li>▪ Development: Energy developments can displace fishing. The cabling arrays associated with energy and telecoms developments, and other physical infrastructure associated with development, have the potential for short-term displacement of fishing activity during the installation phase.</li> <li>▪ Gen 4 Co-existence: Proposals which enable coexistence with other development sectors and activities within the Scottish marine area are encouraged in planning and decision making processes, when consistent with policies and objectives of this Plan.</li> <li>▪ Fisheries 2: The following key factors should be taken into account when deciding on uses of the marine environment and the potential impact on fishing:</li> </ul> <p><i>“The potential effect of displacement on: fish stocks; the wider environment; use of fuel; socio-economic costs to fishers and their communities and other marine users.”</i></p> |
| Sectoral Marine Plan (SMP) – Offshore Wind Energy (Scottish Government, 2020a) | <p>The SMP has been developed in accordance with SNMP (Scottish Government, 2015) to address interactions between renewable development and other marine users.</p> <p>The SMP highlights the need to ensure compatibility with other projects and marine users in Scotland, but also for this strategy to minimise the potential adverse effect on other marine users, economic sectors, and the environment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Scotland's Offshore Wind Policy Statement (Scottish Government, 2020b)         | The Offshore Wind Policy Statement highlights the importance of offshore wind development in meeting Scotland's net zero targets and provides the strategic context for associated marine infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Relevant Legislation, Policy and Guidance                                                                 | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| National Planning Framework 4 (Scottish Government, 2023)                                                 | <p>National Planning Framework 4 2023 policies of relevance to marine infrastructure and other users are:</p> <ul style="list-style-type: none"> <li>Part 2 – National Planning Policy, Policy 11 (Energy) - Mentions the development of offshore wind farms and other technologies;</li> <li>Part 3 - Annex B, Policy 3 - Strategic Renewable Electricity Generation and Transmission Infrastructure;</li> <li>Part 3 – Annex B, Policy 15 - Industrial Green Transition Zones – Comments on other technologies such as Carbon Storage and hydrogen developments; and</li> <li>Annex C – Spatial Planning Priorities.</li> </ul>                                                                                                                                                                                                                                                         |
| SNMP 2 - Planning Position Statement (Scottish Government, 2024)                                          | <p>The Planning Position Statement summarises the Scottish Governments progress on the development of SNMP 2 and summarises key themes emerging from the feedback provided during stakeholder engagement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025))                  | <p>The purpose of the Draft Plan is to enable the sustainable development of offshore wind energy in Scottish waters; balancing economic, social, and environmental objectives.</p> <p>The Draft Plan brings together:</p> <ul style="list-style-type: none"> <li>The ScotWind Option Areas that were awarded as lease options;</li> <li>The Innovation and Targeted Oil and Gas (INTOG) Option and Exclusivity Agreement Areas that were awarded exclusivity agreements; and</li> <li>The potential development of up to 1 gigawatt of export capacity from offshore wind test and demonstration projects.</li> </ul> <p>Adoption of the Plan is expected to take place in autumn 2026.</p>                                                                                                                                                                                              |
| Offshore Wind Policy Statement 2020 update: Scotland's Offshore Wind Ambition (Scottish Government, 2026) | <p>The Scottish Government is resetting its offshore wind policy ambition to up to 40 gigawatts of new offshore wind capacity by 2040, in addition to the already operational or consented capacity (as of August 2025 when the consultation ended) this updated ambition:</p> <ul style="list-style-type: none"> <li>Reaffirms our commitment to supporting the delivery of the existing project pipeline, including ScotWind and INTOG projects;</li> <li>Clarifies that no further offshore wind leasing rounds are planned in the near term; and</li> <li>Establishes a clear and realistic timescale – 2040 – rather than 2035-2040.</li> </ul> <p>This is directly relevant to marine infrastructure and other users because it promotes new offshore wind developments and therefore the requirement for consideration of coexistence between users of the marine environment.</p> |
| <b>Guidance</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| European Subsea Cable Association Guidelines (European Subsea Cable Association (2023)                    | <p>European Subsea Cable Association guideline no.6 <i>"The Proximity of Offshore Renewable Energy Installations &amp; Submarine Cable Infrastructure in UK Waters"</i> provides a framework for collaborative working between the offshore wind farms and subsea cable developments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## 13.3 Consultation

1138. Consultation undertaken to date for the Bellrock OfTDA relevant to marine infrastructure and other users has been in line with the general process described in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.
1139. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to commercial fisheries for the Bellrock OfTDA EIA. No comments were received of relevance to this Chapter.
1140. The Applicant is an active member of the Stonehaven Future Group forum, and, as part of EIA works for the Bellrock WFDA, is already undertaking ongoing consultation with key marine users in the vicinity of the Bellrock Project, including with Ossian Offshore Wind Farm, Bowdun Offshore Wind Farm, Aspen Offshore Wind Farm, North Sea Natural Resources, Orcadian Energy and Scottish and Southern Electricity Networks Transmission, to provide details of the Bellrock WFDA and wider Bellrock Project, and discuss management of any potential interactions with the Bellrock Project. Further stakeholders with assets which may interact with the Bellrock OfTDA will also be consulted on through the development of the Bellrock OfTDA following Scoping phase.

## 13.4 Existing Environment

### 13.4.1 Study Area

1141. The marine infrastructure and other users study area is shown in **Figure 13.1 (Appendix A (Volume 1))** and is defined by the Bellrock OfTDA Scoping Boundary plus a 2 nm buffer to align with the shipping and navigation study area presented in **Chapter 11 Shipping and Navigation**. The same study area is used to capture relevant routeing of vessels associated with other projects/infrastructure in the area that may be affected around the Bellrock OfTDA Scoping Boundary.
1142. The Bellrock OfTDA Scoping Boundary fully overlaps with the Bellrock WFDA and then extends from the Bellrock WFDA to the Aberdeenshire coast. Site selection works are ongoing to determine the Bellrock offshore export cable corridor, but it is estimated that the length of the offshore export cable corridor will be between 130 and 200 km and the width will be between 2 and 2.5 km.
1143. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The marine infrastructure and other users study area will be updated for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4 of Chapter 1: Introduction**).



## 13.4.2 Data and Information Sources

1144. **Table 13.2** sets out the information and data sources which have been considered in the preparation of this Chapter, and will be considered within the Bellrock OFTDA EIA Report where relevant matters are scoped in.

**Table 13.2: Summary of Key Data and Information Sources for Marine Infrastructure and Other Users**

| Dataset                                                                                        | Year updated | Description                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Historic aggregate site data (The Crown Estate, 2018)                                          | 2013         | Spatial data on the historic locations of aggregate sites and sand gravel resources in Scotland's marine area.                                                                                                                                                                                                                                                                                                                          |
| Marine Recreation and Tourism Survey (Marine Directorate, 2015)                                | 2015         | Spatial data sets that provide information on, for example: <ul style="list-style-type: none"> <li>General marine and coastal recreation;</li> <li>Coastal climbing, bouldering and coasteering;</li> <li>SCUBA diving;</li> <li>Surfing, surf kayaking and paddleboarding;</li> <li>Canoeing or kayaking in the sea;</li> <li>Yacht racing at sea;</li> <li>Dinghy racing at sea; and</li> <li>Sailing and cruising at sea.</li> </ul> |
| Ministry of Defence (MOD) - Military exercise areas and danger areas (PEXAs) (OceanWise, 2019) | 2019         | Spatial data on MOD training, test and evaluation, surveillance and monitoring activities in Scotland's marine area.                                                                                                                                                                                                                                                                                                                    |
| Disposal site location data, (Marine Directorate, 2022)                                        | 2022         | Spatial information on both open and closed disposal site locations in Scotland's marine area.                                                                                                                                                                                                                                                                                                                                          |
| INTOG application areas (Crown Estate Scotland (CES), 2023a)                                   | 2023         | Application areas for Scotland's INTOG offshore wind leasing round.                                                                                                                                                                                                                                                                                                                                                                     |
| Ports and harbours around Scotland (Marine Directorate, 2023)                                  | 2023         | Spatial data of all the ports and harbours located around Scotland's coastline.                                                                                                                                                                                                                                                                                                                                                         |
| Carbon capture, utilisation and storage (CES, 2023b)                                           | 2023         | Spatial data of carbon capture, utilisation and storage leases in Scotland's marine area.                                                                                                                                                                                                                                                                                                                                               |
| Offshore wind lease areas (Crown Estate Scotland (CES), 2024a)                                 | 2024         | Current offshore wind farm sites in pre-planning, planning, construction, and operational phases in Scottish waters.                                                                                                                                                                                                                                                                                                                    |
| Wave lease sites and suitable areas for development (CES, 2024b)                               | 2024         | Spatial information on wave lease sites granted by CES and areas identified as suitable for development under the SMP.                                                                                                                                                                                                                                                                                                                  |
| Tidal lease sites and suitable areas for development (CES, 2024c)                              | 2024         | Spatial information on tidal lease sites granted by CES and areas identified as suitable for development under the SMP.                                                                                                                                                                                                                                                                                                                 |



| Dataset                                                                                             | Year updated | Description                                                                                                            |
|-----------------------------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------|
| Offshore O&G activity data (North Sea Transition Authority (NSTA) 2024)                             | 2024         | Spatial information on O&G infrastructure (O&G wells, fields, pipelines, and licence blocks).                          |
| Subsea cables (Kingfisher Information Service – Offshore Renewable & Cable Awareness project, 2023) | 2024         | Spatial data of marine subsea cables in Scotland's marine area.                                                        |
| Active marine aquaculture sites in Scotland (Marine Directorate, 2026)                              | 2026         | Spatial information on the location of finfish, shellfish and seaweed aquaculture sites across Scotland's marine area. |

1145. No site-specific surveys have been undertaken to inform this Chapter. The marine infrastructure and other users baseline characterisation in the Bellrock OFTDA EIA Report will be informed by publicly available data with no further studies or surveys required.

### 13.4.3 Oil and Gas

1146. O&G operations within UK territorial waters are managed through the awarding of licence blocks that enable licences to explore areas of seabed, predominantly in the North Sea. These licences are distributed through the Petroleum Act 1998, which is overseen by the NSTA. Potential O&G licences have the opportunity to bid in licensing rounds which are managed by the NSTA.
1147. The marine infrastructure and other users study area overlaps with 39 licence blocks. Twelve of these are licenced (as presented in **Figure 13.2 (Appendix A (Volume 1))**), and are licenced to the following companies:
- North Sea Natural Resources: 20/28, 20/29, 20/30a, 21/26a, 27/3a, 27/4a, 27/5a, 27/9a, 27/10a, 28/1a, 28/6a (all blocks); and
  - Orcadian Energy: 28/2a.
1148. The remaining 27 licence blocks within the marine infrastructure and other users study area currently have an unlicensed status.
1149. There are no O&G fields located within the marine infrastructure and other users study area. There are four decommissioned (Abandoned Phase 3) appraisal wells within the marine infrastructure and other users study area, of which two are located within the Bellrock OFTDA Scoping Boundary: one located at the western end of the Bellrock OFTDA (Well Registration Number 27/05-1, North Sea Natural Resources Limited) and the second located towards the centre of the Bellrock OFTDA (Well Registration Number 27/03-1, Amoco U.K. Petroleum Limited). There is no overlap with any other existing or decommissioned O&G infrastructure.
1150. The Catcher development (operated by Harbour Energy) area lies approximately 19 km to the east of the Bellrock OFTDA Scoping Boundary outside the marine infrastructure and other users study

area, and includes three producing fields known as Varadero, Burgman and the Catcher (located approximately 21 km, 19 km and 24 km east respectively of the Bellrock OfTDA Scoping Boundary, with the Laverda field located 19 km east of the Bellrock OfTDA Scoping Boundary see **Figure 13.2 (Appendix A (Volume 1))**).

1151. The following services are also associated with the O&G industry:
- Helicopters: O&G industries rely on helicopters for personnel transfer and emergency evacuation. Helicopter and associated aviation considerations are addressed separately in **Chapter 12: Aviation and Radar**; and
  - Vessels: O&G industries require a supply of support vessels for its operations. Vessels and associated navigational considerations are addressed separately in **Chapter 11: Shipping and Navigation**.
1152. No O&G pipelines are recorded within the marine infrastructure and other users study area. The nearest pipeline is part of the Catcher development and is 22 km east of the Bellrock OfTDA Scoping Boundary and the closest Notice to Mariners notice to the Bellrock OfTDA Scoping Boundary is the Bergesen Worldwide Catcher Floating Production, Storage and Offloading situated to the east at 23 km. Ample sea space exists surrounding the Bellrock OfTDA Scoping Boundary that can be utilised by associated vessels with early course alterations and passage planning. It is expected that they will be able to plan and re-route with minimal interference to access and limited disruption to activities/operations and therefore oil and gas pipelines are not considered further.
1153. Two drill rig anchorages are located within the Bellrock OfTDA Scoping Boundary – one located in the north, and one within Stonehaven Bay.

#### 13.4.4 Offshore Wind Farm Developments

1154. The northeast and east of Scotland are key areas for offshore wind development, defined by the SMP. The SMP identifies sustainable areas for the development of commercial-scale offshore wind energy projects to minimise potential adverse effects and maximise opportunities for economic development (Scottish Government, 2020a). Existing and proposed offshore wind farms in proximity of the marine infrastructure and other users study area are shown in **Figure 13.3 (Appendix A (Volume 1))**.
1155. Approximately 17 km to the northeast of the Landfall Area of Search at Cowie, is the Kincardine Offshore Wind Farm, which has been in operation since 2021. Although the Kincardine Offshore Wind Farm is located within the marine infrastructure and other users study area, the site, plus a 1 nm buffer, is excluded from the Bellrock OfTDA. The cable route for the Kincardine Offshore Wind Farm runs northwest from the Kincardine array to the coastline just south of Aberdeen, passing through the Bellrock OfTDA.
1156. Through the ScotWind leasing round managed by CES, the Applicant was successfully awarded exclusivity of an area of seabed (within the E1 Option Area) in the North Sea off Scotland, as discussed in **Chapter 1: Introduction**. Two other offshore wind farms were also awarded exclusivity in the E1 Option Area under the ScotWind process, both of which are adjacent to the southern boundary of the Bellrock OfTDA Scoping Boundary:

- Morven Offshore Wind Farm, split into Morven North and Morven South projects (consent applications for both projects submitted in May 2026); and
- Ossian Offshore Wind Farm (consent application for array submitted 2024).

1157. It is expected that the proposed Ossian Offshore Wind Farm will have two export cables: one making landfall in Lincolnshire, England and one connecting to the Aberdeenshire/Angus coastline in Scotland<sup>44</sup> (the final details of the Ossian Scottish landfall site and export cable corridor were not available at the time of writing this Chapter). Therefore, there is potential for the Ossian export cable corridor to be located within the Bellrock OfTDA Scoping Boundary and, potentially, cross the Bellrock export cable corridor. This is, however, dependent on the final design of the Bellrock and Ossian export cable corridors and the Applicant is engaging with Ossian to minimise adverse interactions.
1158. The Bowdun Offshore Wind Farm (application submitted in 2026), located in option area E3 (approximately 45 km east of the Landfall Area of Search), is located in the centre of the Bellrock OfTDA Scoping Boundary. Although it still lies within the marine infrastructure and other users study area, the Bowdun array plus a 1 nm buffer is excluded from the Bellrock OfTDA. The proposed cable route for the Bowdun Offshore Wind Farm runs southwest of the wind farm array area to the coastline approximately 18 km south of Stonehaven, passing through the Bellrock OfTDA.
1159. No other ScotWind projects are proposed within the marine infrastructure and other users study area.
1160. In addition to the Bowdun and Kincardine export cables, the export cable corridor for the proposed Aspen Offshore Wind Farm, located approximately 65 km north of the Bellrock OfTDA, overlaps the western end of the Bellrock OfTDA Scoping Boundary, making landfall just north of Stonehaven.

### 13.4.5 Ports and Harbours

1161. Within the marine infrastructure and other users study area there are two harbours: Stonehaven Harbour (located to the southern end of Stonehaven Bay), and Cove Bay (approximately 17 km north of Stonehaven Bay) (Marine Directorate, 2023). Stonehaven Harbour is located within the Bellrock OfTDA Scoping Boundary, towards the southern end of the coastal stretch of the Scoping Boundary.
1162. Stonehaven Harbour; the largest recreational harbour in Aberdeenshire with almost 140 regular moorings, all of which are fully occupied. The Aberdeen and Stonehaven Yacht Club is based in Stonehaven Harbour. In addition to recreational vessels, Stonehaven Harbour is used by several 50-foot fishing boats and is the base for Royal National Lifeboat Institute Stonehaven<sup>45</sup>.

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<sup>44</sup> <https://ossiantransmission.com/>

<sup>45</sup> RNLI website: <https://rnli.org/find-my-nearest/lifeboat-stations/stonehaven-lifeboat-station>

1163. Cove Bay Harbour is a small, natural harbour with a shingle beach, a concrete boat launch, and a pier. There are several shellfish fishing boats that operate from here on a part-time basis.
1164. The Aberdeen Harbour limit is located 880 m outside the north of the Bellrock OfTDA Scoping Boundary. Ports and harbours are considered in **Chapter 11: Shipping and Navigation**.

### 13.4.6 Carbon Capture Storage

1165. There are no Carbon Capture Storage (CCS) licenced areas identified within the marine infrastructure and other users study area. The closest CCS facility in the vicinity is the Acorn CCS (planning stage) licence area, which is located approximately 97 km north from the Bellrock OfTDA Scoping Boundary. Therefore, CCS is **not considered further** in this **Bellrock OfTDA Scoping Report**.

### 13.4.7 Ministry of Defence

1166. The Bellrock OfTDA Scoping Boundary overlaps with three MOD practice and exercise areas (PEXAs). The identified PEXAs are EG D613A, EG D613B, and EG D613C, and are Royal Air Force and related. There are no PEXAs related to maritime activities or other MOD maritime navigational interests (highly surveyed areas) identified in the marine infrastructure and other users study area and, therefore, these are not considered further in this **Bellrock OfTDA Scoping Report**.
1167. Information on MOD aviation activity in the vicinity of the Bellrock OfTDA Scoping Boundary is provided in **Chapter 12: Aviation and Radar**. This includes aviation activity and designated danger areas and/or PEXAs related to aviation activities (see **Figure 13.4 (Appendix A (Volume 1))**).

### 13.4.8 Other Infrastructure

#### 13.4.8.1 Dredging and Disposal Sites

1168. There are two marine disposal sites for dredged material located in the western end of the marine infrastructure and other marine users study area (FO003 Stonehaven (closed) and FO007 Stonehaven B (open)) and one open site located in the northwestern end (CR110 Aberdeen). The two Stonehaven marine disposal sites are located within the Bellrock OfTDA Scoping Boundary (see **Figure 13.5 (Appendix A (Volume 1))**).

#### 13.4.8.2 Subsea Cables and Pipelines (Utilities)

1169. The proposed Eastern Green Link (EGL) 5 high voltage offshore electricity link runs north-south through the middle of the Bellrock OfTDA Scoping Boundary, lying approximately 63 km directly east offshore from Stonehaven. As the EGL5 cable traverses the Bellrock OfTDA Scoping Boundary, it will be necessary for the Bellrock offshore export cables to cross the EGL5 cable to make landfall.
1170. The consented EGL2 and proposed EGL3 subsea cables both run through the Bellrock OfTDA Scoping Boundary. They are located approximately 56 km and 68 km directly east offshore from Stonehaven, respectively (see **Figure 13.6 (Appendix A (Volume 1))**). EGL2 is planned to be

located between Peterhead in Aberdeenshire, Scotland and Drax in North Yorkshire, England<sup>46</sup>, while EGL3 is proposed between Peterhead, and Lincolnshire, England (Scottish and Southern Electricity Networks, 2025).

1171. There are two coastal outfall pipelines located within the Bellrock OfTDA: one in the southern end of Stonehaven Bay that extends from Stonehaven harbour out into the bay for approximately 600 m (MTF\_INDUSTRIAL.9152) and one in the northern end of Stonehaven Bay that extends from the coastline adjacent to Boatie Row eastwards into Stonehaven Bay for approximately 215 m (MTF\_INDUSTRIAL.9164).

#### 13.4.8.3 Marine Aggregates and Mining

1172. There are no licences for marine aggregate extraction identified within the marine infrastructure and other users study area or within the wider east Scotland region (Marine Directorate, 2020). Therefore, marine aggregates and mining are **not considered further** in this **Bellrock OfTDA Scoping Report**.

#### 13.4.8.4 Wave and Tidal

1173. There are no wave or tidal projects identified within the marine infrastructure and other users study area. The closest wave project is the operational Mocean Energy Limited wave power energy converter demonstrator project approximately 222 km northwest (Orkney) of the Bellrock OfTDA Scoping Boundary. The closest operational tidal project is the MeyGen demonstrator project located in Pentland Firth, located approximately 217 km northwest of the Bellrock OfTDA Scoping Boundary. Therefore, wave and tidal are **not considered further** in this **Bellrock OfTDA Scoping Report**.

#### 13.4.8.5 Aquaculture

1174. There are no aquaculture sites identified within the marine infrastructure and other users study area. The northern and eastern coastlines of Scotland have been identified as areas where the development of new aquaculture sites is restricted, and where existing aquaculture sites can only be extended (Scottish Government, 2015). A commercial seaweed harvesting licencing area is located immediately north of the Bellrock OfTDA Scoping Boundary, just south of Newtonhill, Aberdeenshire (Scottish Government, 2015). Therefore, aquaculture is **not considered further** in this **Bellrock OfTDA Scoping Report**.

#### 13.4.9 Recreation

1175. The stretch of coastline at the proposed landfall site at Cowie, on the north side of Stonehaven, offers a range of recreational activities for locals and tourists. It is anticipated that there will be ongoing stakeholder engagement throughout the EIA, pre-construction, and installation phases of the Bellrock Offshore Transmission Infrastructure to ensure any disturbance caused by the presence of work vessels will be avoided or kept to a minimum.

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<sup>46</sup> Scottish and Southern Electricity Networks Eastern Green Link 2 website: <https://www.ssen-transmission.co.uk/projects/project-map/eastern-green-link-2/>

1176. Potential impacts from the Bellrock Onshore Transmission Infrastructure on recreation facilities and/or users will be considered in the Bellrock Onshore Transmission Development Area EIA. The following sections provide a brief overview of key attractions and activities relevant to the Bellrock Offshore Transmission Infrastructure. As the final details of the location and programme of work for the landfall site are yet to be confirmed (see **Chapter 3: Project Description**), the below potential receptors are to be considered indicative.

#### 13.4.9.1 Core Path, Beach, and Waterfront Users

1177. Stonehaven beach is a long, moon-shaped beach popular with local residents, dog walkers and tourists. The beach boardwalk stretches from the southern end of the beach to the Stonehaven Heated Open Air Swimming Pool at the western end in Cowie (see **Figure 13.7 (Appendix A (Volume 1))**). The boardwalk is lined with sculptures and provides access to several cafes and restaurants.
1178. To the north of the swimming pool is the Stonehaven Queen Elizabeth Park Club campsite, which is sited next to the beach, and further north along the coast is the Stonehaven Golf Club - a cliff top golf course with a club house and restaurant ('The View Restaurant').
1179. The coastline at Stonehaven and Cowie is part of the Stonehaven and Cowie Chapel Ramble coastal path, a 5-mile beach and cliff top path that includes attractions such as Dunnottar Castle, Stonehaven harbour, and Bervie Brae viewpoint with a view of the bay, harbour, and beach. Scotland's Great Trails - Stonehaven to Skatie Shore coastal path is present in the north and Stonehaven to Dunnottar coastal path is present in the south of the marine infrastructure and other users study area<sup>47</sup>.

#### 13.4.9.2 Water Sports

1180. Stonehaven Bay is a popular place for water sports, with sea angling, SCUBA diving, paddleboarding, kayaking and coastal climbing, bouldering and coasteering all taking place. For example, Stonehaven Paddleboarding, based in Stonehaven harbour, offers lessons and tours of the surrounding waters, as well as saunas and changing facilities<sup>48</sup>.

#### 13.4.9.3 Surfing

1181. The inshore waters at the western end of the Bellrock OfTDA Scoping Boundary, running northwards from the north end of Stonehaven Bay, has been identified as an area of medium-to-high concentration for surfing (Marine Directorate, 2015). Stonehaven Bay is a known surfing location<sup>49</sup>, although it is recommended for more experienced surfers due to strong wave and current conditions and, therefore, the number of surfers tends to be low<sup>50</sup>.

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<sup>47</sup> Alltrails website: Stonehaven and Cowie Chapel Ramble: <https://www.alltrails.com/en-gb/trail/scotland/aberdeenshire/stonehaven-and-cowie-chapel-ramble>

<sup>48</sup> Stonehaven Paddleboarding: <https://shpb.co.uk/>

<sup>49</sup> Surfline website: <https://www.surfline.com/surf-report/stonehaven/61411054b363db6fbac0374f/spot-guide>

<sup>50</sup> Surfmeteo website: Stonehaven profile: <https://www.surfmeteo.com/uk-scotland-east-coast-stonehaven>

#### 13.4.9.4 Sailing

1182. Based in Stonehaven harbour is the Aberdeen and Stonehaven Yacht Club, which offers dinghy sailing (including a racing program), family sailing, and a junior program. In the months from June to November, the club uses Stonehaven Bay for lessons, training, and racing (the club sails at the Loch of Skene from March to June and does not sail from December to February)<sup>51</sup>.

#### 13.4.9.5 Bathing Water

1183. Stonehaven is the only recognised bathing water within the Bellrock OFTDA Scoping Boundary. Bathing waters are classified by the Scottish Environment Protection Agency (SEPA) on bacterial water quality indicators, specifically *Escherichia Coli* and *Intestinal Enterococci*. Calculating compliance accounts for both the average value and the range of values in a four-year rolling dataset. Stonehaven bathing water was classified as 'Excellent' in 2025 and 'Good' in the preceding three years (SEPA, 2025). Stonehaven bathing water is subject to short term pollution following heavy rainfall and pollution risks include sewer overflows, agricultural run-off, and surface water discharges. There are two rivers (the Carron Water and Cowie Water) that drain into the Stonehaven bathing water and can impact on bathing water quality during heavy rainfall.

### 13.5 Potential Impacts

1184. Works associated with the installation/construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure have the potential to result in temporary impacts on marine infrastructure and other users.
1185. The key potential impacts include:
- Impacts on offshore O&G operations and/or disruption to associated activities;
  - Impacts on other offshore wind farms and/or disruption to associated activities;
  - Disruption of harbour and port operations;
  - Impacts on marine disposal sites and/or disruption to associated activities;
  - Impacts on subsea cables and pipelines (utilities) and/or disruption to associated activities; and
  - Disturbance and/or displacement of recreational activities.

#### 13.5.1 Embedded Mitigation Measures

1186. Embedded mitigation has been identified, as presented in **Table 13.3** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are

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<sup>51</sup> Aberdeen and Stonehaven Yacht Club: <https://asyc.org.uk/>



embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.

1187. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.



**Table 13.3: Embedded Mitigation Measures Identified in Accordance with the Mitigation Hierarchy**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                           | Relevance to Assessment                                                                                                                                                                                                                                                                                                          | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                  |                 |
| ✓                          | ✓   | X               | Development of, and adherence to, a Seabed Obstruction Mitigation Plan.<br><br>The Seabed Obstruction Mitigation Plan will set out any potential risks to legitimate sea users and identify measures to reduce these risks.                                                                                                                                                                           | Implementation of a Seabed Obstruction Mitigation Plan will identify and manage potential risks to other marine users associated with the Bellrock Offshore Transmission Infrastructure. This will reduce the likelihood of interactions with existing marine assets and support the safe use of the marine environment.         | Tertiary        |
| ✓                          | ✓   | X               | A detailed Cable Burial Risk Assessment (CBRA) will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed. | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will minimise cable exposure and reduce potential interactions with existing marine infrastructure and other users.         | Primary         |
| ✓                          | ✓   | X               | Any damage, destruction, or decay of offshore export cables and/or interconnector cable(s) will be notified to the Maritime and Coastguard Agency, Northern Lighthouse Board, Kingfisher, and the United Kingdom Hydrographic Office.                                                                                                                                                                 | Timely notification of any damage, destruction or decay of offshore export cables and interconnector cable(s) will ensure relevant authorities and stakeholders are informed of potential hazards. This will support the safe management of marine activities and existing infrastructure in the vicinity of the Bellrock OfTDA. | Tertiary        |
| ✓                          | ✓   | ✓               | Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate,                                           | Implementation of the VMNSP will support the safe and efficient management of project vessel movements. Adoption of defined transit corridors, navigational controls and recognised good practice, where practicable, will reduce the potential for interactions with marine infrastructure and other users.                     | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Relevance to Assessment                                                                                                                                                                                                                                                                                              | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                      |                 |
|                            |     |                 | <p>information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> |                                                                                                                                                                                                                                                                                                                      |                 |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan.</p> <p>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Implementation of a Marine Pollution Contingency Plan will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will minimise the potential for effects on existing marine infrastructure and other users. | Tertiary        |
| ✓                          | ✓   | X               | <p>During the construction and O&amp;M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Periodic geophysical surveys and remedial works, where required, will help maintain cable burial and minimise the occurrence of exposed offshore export cables and interconnector cable(s) on the seabed. This will reduce the potential for interactions with existing marine infrastructure and other users.       | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relevance to Assessment                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                          |                 |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                      | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will minimise potential conflicts with marine infrastructure and other users.                                             | Tertiary        |
| ✓                          | ✓   | ✓               | Advance warning and accurate location details of construction, maintenance, and decommissioning activities, associated Safety Zones, and advisory passing distances will be given via notifications to mariners and Kingfisher Bulletins.                                                                                                                                                                                                                    | Advance notification of construction, O&M, and decommissioning activities, Safety Zones and advisory passing distances will provide marine users with timely information to support operational planning. This will reduce the potential for conflicts with marine infrastructure and other users.                       | Tertiary        |
| ✓                          |     | X               | Development of an Unexploded Ordnance (UXO) Threat and Risk Assessment.<br><br>All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).                                                                                                         | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and application of appropriate clearance methods and mitigation measures. This will reduce risks to marine infrastructure and other users associated with UXO clearance.                                                           | Tertiary        |
| ✓                          | ✓   | ✓               | Adherence to the following international and national regulations and guidance, namely: <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading invasive non-native species. This will help protect the marine environment that supports a range of marine industries. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                            |                 |
|                            |     |                 | <p>control of transfer of potentially invasive species from ballast water; and</p> <ul style="list-style-type: none"> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | ✓   | ✓               | <p>An application will be made post-consent for Safety Zones including:</p> <ul style="list-style-type: none"> <li>An application for Safety Zones for up to 500 m around each OfSS and OfRCS during its construction;</li> <li>An application for Safety Zones for up to 50 m around each OfSS and OfRCS when construction works have been completed but prior to commissioning, or where construction works are partially completed and a construction vessel is not present;</li> <li>An application for Safety Zones for up to 500 m around each OfSS and OfRCS during major maintenance during operation;</li> <li>An application (prior to commencement of decommissioning) for Safety Zones for up to 500 m around each OfSS and OfRCS during its decommissioning; and</li> <li>Consideration will also be given to an application for up to 500 m operational Safety Zones throughout the O&amp;M phase.</li> </ul> | <p>The establishment of Safety Zones around the Bellrock Offshore Transmission Infrastructure during construction, major maintenance and decommissioning will provide a managed area for safe working operations. This will reduce the risk of interactions between the Bellrock Offshore Transmission Infrastructure and other users.</p> | Primary         |
| ✓                          | ✓   | ✓               | <p>Where appropriate, guard vessels (or other suitable methods) will be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>Use of guard vessels, or other suitable measures, will support compliance with Safety Zones and advisory passing distances. This will improve awareness of the Bellrock Offshore</p>                                                                                                                                                    | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                              |                 |
|                            |     |                 | to surface navigation during construction, O&M, and decommissioning phases.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Transmission Infrastructure and reduce the potential for interactions with other users.                                                                                                                                                                                                                                                                      |                 |
| X                          | ✓   | X               | Sufficient information on the location and characteristics of the Bellrock Offshore Transmission Infrastructure will be provided to the United Kingdom Hydrographic Office to enable the Offshore Transmission Infrastructure to be accurately charted on physical and electronic nautical charts and associated publications.                                                                                                                                                                                                                                                                                                                                     | Marking all relevant Bellrock Offshore Transmission Infrastructure on physical and electronic nautical charts will improve awareness of the Bellrock Offshore Transmission Infrastructure among other marine users. This will support operational planning and reduce the potential for interactions with the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | ✓               | Development of, and adherence to, a Lighting and Marking Plan (LMP).<br><br>The LMP will set out the lighting and marking requirements for the Bellrock Offshore Transmission Infrastructure during the construction, O&M, and decommissioning phases, including compliance with all relevant navigation and aviation legislative requirements. The LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst maintaining compliance with these requirements. Procedures will also be established for the reporting and timely rectification of lighting and marking failures, with interim hazard warnings implemented where required. | Implementation of the LMP will ensure the Bellrock Offshore Transmission Infrastructure is appropriately marked and illuminated in accordance with relevant requirements. This will improve visibility and support the safe operation of other marine users.                                                                                                 | Tertiary        |
| ✓                          | ✓   | ✓               | Any dropped objects during works associated with the Bellrock OFTDA will be reported in line with MD-LOT's guidance on the 'accidental deposit of an object at sea' (Marine Directorate, 2024) and objects will be recovered where they pose a hazard to other marine users and where recovery is practicable.                                                                                                                                                                                                                                                                                                                                                     | Reporting and, where practicable, recovering dropped objects will minimise the potential for seabed obstructions that could interfere with other marine users. This will reduce risks to other users of the marine environment.                                                                                                                              | Tertiary        |
| ✓                          | ✓   | X               | Compliance with Marine Guidance Note 654 and development and implementation of an Emergency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Implementation of the ERCoP and compliance with Marine Guidance Note 654 will ensure                                                                                                                                                                                                                                                                         | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Relevance to Assessment                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                             |                 |
|                            |     |                 | Response Cooperation Plan (ERCoP). The Applicant will ensure compliance with Marine Guidance Note 654 and its annexes, where applicable, including consultation with the Maritime and Coastguard Agency, completion of a search and rescue checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support search and rescue and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities. | appropriate arrangements are in place to support emergency response activities. This will facilitate effective coordination with relevant organisations and other marine users during emergency situations. |                 |
| ✓                          | ✓   | X               | Marine coordination will be implemented to manage project vessels throughout construction, O&M, and decommissioning periods, including in liaison with relevant ports and harbours.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Marine coordination will support the safe and efficient management of project vessel movements. This will reduce the potential for conflicts with other marine users.                                       | Tertiary        |
| ✓                          | ✓   | ✓               | Project vessels will ensure compliance with international marine regulations as adopted by the Flag State, including the Convention on the International Regulations for Preventing Collisions at Sea and the International Convention for the Safety of Life at Sea, thereby reducing the risk of navigational incidents, including vessel collisions, and associated risks to other sea users and the marine environment.                                                                                                                                                                                                                                                                                                                                   | Compliance with international marine safety regulations will reduce the risk of navigational incidents involving project vessels. This will support the safety of other marine users.                       | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                   | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                           |                 |
| ✓                          | ✓   | ✓               | A Navigational Risk Assessment will be developed for the Bellrock Offshore Transmission Infrastructure, which will include consideration of the OfSS(s) and OfRCS(s).                                                                                                                                                           | The Navigational Risk Assessment will identify and evaluate navigational risks associated with the Bellrock Offshore Transmission Infrastructure and inform the development of appropriate risk management measures. This will support the safe coexistence of the Bellrock Offshore Transmission Infrastructure with other marine users. | Tertiary        |
| X                          | X   | ✓               | Development of, and adherence to, a Decommissioning Programme.<br><br>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection. | Implementation of a Decommissioning Programme will ensure decommissioning is planned and undertaken in a safe, orderly and coordinated manner. This will minimise disruption to other marine users and support the safe management or removal of the Bellrock Offshore Transmission Infrastructure.                                       | Tertiary        |
| ✓                          | ✓   | ✓               | Lights, marks, sounds, signals, and other aids to navigation will be exhibited as required by the Northern Lighthouse Board, the Maritime and Coastguard Agency, and the Civil Aviation Authority including the buoyed construction/decommissioning areas.                                                                      | Provision of lights, marks, sounds, signals and other aids to navigation will improve awareness of the Bellrock Offshore Transmission Infrastructure. This will support the safe operation of vessels and other marine users within and around the Bellrock OFTDA.                                                                        | Tertiary        |
| ✓                          | X   | X               | A trenchless technique will be used at the landfall to avoid direct disturbance to the intertidal and shallow subtidal environment, thereby reducing habitat loss and seabed disturbance.                                                                                                                                       | Use of a trenchless technique at the landfall will avoid direct interaction with intertidal and nearshore areas during construction. This will reduce disruption to existing marine users and infrastructure at the landfall.                                                                                                             | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                         |                 |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement.</p> <p>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.</p> | <p>Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with measures in place to minimise interactions with other sea users. This will reduce the potential for disruption to existing marine infrastructure and other users during construction.</p>               | Tertiary        |
| ✓                          | X   | X               | <p>Surface-piercing infrastructure (i.e. OfSS(s) and OfRCS(s)) will be located at least 39 km from the coastline (MHWS), which will limit visibility from the locations of sensitive receptors along the coast. Significant effects on landscape and visual receptors from the presence of the OfSS(s) and OfRCS(s) are therefore considered unlikely.</p>                                                                                                                                                                  | <p>Locating the OfSS(s) and OfRCS(s) at least 39 km from the coastline (MHWS) will reduce their visibility from the coast and minimise the potential for interactions with predominantly coastal receptors and activities. This will limit the influence of the Bellrock Offshore Transmission Infrastructure on other coastal users and interests.</p> | Primary         |



## 13.6 Scoping of Potential Impacts

### 13.6.1 Construction Phase

#### 13.6.1.1 Impacts on Offshore Oil and Gas Operations and/or Disruption to Associated Activities

1188. Within the marine infrastructure and other users study area, there are a total of 39 licence blocks, twelve of which are licenced (see **Section 13.4.3**). The increase in vessel traffic and the implementation of Safety Zones during the construction phase of the Bellrock Offshore Transmission Infrastructure (see **Section 3.5.5**) has the potential to affect or restrict access to these licence block areas and, potentially, reduce or restrict exploration activities (such as seismic surveys). Therefore, impacts on offshore oil and gas operations and/or disruption to associated activities have been **scoped in** for further assessment in the Bellrock OfTDA EIA.

#### 13.6.1.2 Impacts on other Offshore Wind Farms and/or Disruption to Associated Activities

1189. The Applicant has applied a 1 nm exclusion buffer around other offshore wind farm arrays when defining the Bellrock OfTDA Scoping Boundary. There is currently one operational offshore wind farm (Kincardine offshore wind farm) and one proposed (Bowdun offshore wind farm) surrounded by the Bellrock OfTDA Scoping Boundary and two more proposed offshore wind farms adjacent to the south (Ossian and Morven offshore wind farms) (see **Figure 13.3 (Appendix A (Volume 1))**). During the construction phase of the Bellrock offshore export cable, the increase in vessel traffic and implementation of Safety Zones (see **Section 3.5.5**) could restrict or disrupt activities associated with the construction and/or operations and maintenance activities of these other wind farms. Therefore, impacts on other offshore wind farms has been **scoped in** for further assessment in the Bellrock OfTDA EIA.
1190. The Bellrock offshore export cable route has the potential to impact the subsea wind farm export cables of other offshore wind farms, most notably the Kincardine Offshore Wind Farm (in operation), whose export cable is located in the western end of the Bellrock OfTDA, and the proposed Bowdun, Aspen Offshore Wind Farms, whose proposed export cable routes are located within the western and northwest of the of the Bellrock OfTDA Scoping Boundary, respectively. Ossian Offshore Wind Farm is yet to define a boundary for offshore transmission assets. Due to the presence of these export cable routes (both existing and proposed) within the Bellrock OfTDA, they have been **scoped in** for further assessment within the Bellrock OfTDA EIA.
1191. There are several other offshore wind farms located within the vicinity of the Bellrock marine infrastructure and other users study area, the closest of which are:
- ChampionWind (lease handed back to CES) - approximately 12 km north;
  - Seagreen Phase 1 Wind Farm (operational) - approximately 15 km south;
  - Seagreen 1A Offshore Wind Farm (consented) - approximately 20 km south
  - Cedar Offshore Wind Farm (Pre-planning) - approximately 20 km east; and
  - Muir Mhòr Offshore Wind Farm (in planning) - approximately 30 km north.

1192. Due to the distance between these offshore wind farm sites the marine infrastructure and other users study area, and the relatively localised impact of activity associated with the Bellrock OFTDA during construction, these wind farms are proposed to be **scoped out** of the Bellrock OFTDA EIA.

#### 13.6.1.3 Disruption of Harbour and Port Operations

1193. The construction works associated with the Bellrock Offshore Transmission Infrastructure, particularly those occurring within the inshore and landfall areas, have the potential to interact with harbour and port operations. However, construction works will be temporary, short-term, and localised in nature and are not expected to result in significant disruption to harbour and port operations within the marine infrastructure and other users study area. Accordingly, impacts on harbour and port operations are proposed to be **scoped out** of the EIA. Impacts on vessel safety (including the Royal National Lifeboat Institute lifeboat operations from Stonehaven) will be considered within **Chapter 11: Shipping and Navigation**.

#### 13.6.1.4 Impacts on Marine Disposal Sites and/or Disruption to Associated Activities

1194. There are three marine disposal sites identified within the Bellrock marine infrastructure and other users study area, of which only two are active (FO003 Stonehaven and FO007 Stonehaven B) (see **Figure 13.5 (Appendix A (Volume 1))**). Both of these sites are located to the western end of the Bellrock OFTDA, southeast of Stonehaven and approximately 1.5 to 3 km offshore from the proposed landfall. During the construction phase of the Bellrock offshore export cable, there is potential to disturb these sites, although it is expected that they will be avoided through micro-siting the offshore export cable route. During the construction phase of the Bellrock Offshore Transmission Infrastructure, the increase in vessel activity and implementation of Safety Zones could restrict access to these sites. Therefore, impacts on marine disposal sites and/or disruption to associated activities are **scoped in** for further assessment in the EIA.

#### 13.6.1.5 Impacts on Subsea Cables and Pipelines (Utilities) and/or Disruption to Associated Activities

1195. The consented Eastern Green Link 2 and proposed Eastern Green Links 3 and 5 all cross the Bellrock OFTDA from north to south (see **Figure 13.6 (Appendix A (Volume 1))**). Therefore, the Bellrock offshore export cable will be required to cross over these cables. The increase in vessel activity and the implementation of Safety Zones during the construction phase of the Bellrock Offshore Transmission Infrastructure could impact the construction and/or pre-construction survey work for these developments due to restrictions on access to certain sites. Therefore, subsea cables (utilities) have been scoped in for further assessment within the Bellrock OFTDA EIA.
1196. There are two pipeline outfalls located within Stonehaven Bay: one to the north that extends 215 m out from the coastline and one to the south that extends 600 m out from Stonehaven harbour. Whilst the final design of the Bellrock Offshore Transmission Infrastructure has yet to be confirmed, the landfall works (including the anticipated use of trenchless installation techniques; see **Chapter 3: Project Description**) are expected to be in the northern part of Stonehaven Bay, with the exit points of the trenchless ducts further offshore than the existing outfalls. The southern outfall is therefore spatially separated from the proposed landfall area and associated works. In addition, the northern outfall is located outside the anticipated marine landfall works area. As such, there is limited potential for direct interaction between the proposed landfall works and the existing pipeline

infrastructure. Accordingly, impacts on pipelines are not anticipated to result in significant effects and are proposed to be **scoped out** of EIA.

#### 13.6.1.6 Impacts on Recreational Activities

1197. There are a range of recreational activities that take place at the proposed landfall site at Cowie, both along the coast and in the inshore waters of Stonehaven Bay (see **Section 13.4.9**) which may be disturbed or displaced during construction of the Bellrock Offshore Transmission Infrastructure.
1198. The proposed landfall works (including the anticipated use of a trenchless installation technique, are expected to be short-term, temporary, and localised, with intermittent presence of work vessels during the trenchless duct installation in the location of the marine exit of the ducts (see **Chapter 3: Project Description**). For example, it is anticipated that the installation of a single trenchless duct will take approximately five weeks, throughout which up to three vessels will make multiple visits to the site. In total within that period, vessels are expected to spend intermittently approximately two weeks in total on site per duct, for a maximum of between two and six ducts. Although the final programme of works for the installation of the trenchless ducts is yet to be determined, there is potential for further efficiencies through concurrent installation that would reduce the overall installation time. It is anticipated that marking buoys will be required during installation of the landfall works and will be determined through consultation with the Maritime and Coastguard Agency (see **Section 3.4.7.2**).
1199. There is potential for a visual impact for core path, beach and waterfront users and also impacts on onshore cultural heritage (i.e. Dunnottar Castle), but this will be the temporary presence of a small number of vessels intermittently in a marine environment and the potential for a significant environmental effect is unlikely (see **Chapter 14: Marine Archaeology and Cultural Heritage** and **Chapter 15: Seascape, Landscape and Visual Impact**, respectively). As landfall works will be installed via trenchless technology, there will be no requirement for beach closures or disturbance to recreational users of the coastal paths, beach or other coastal assets and, therefore, impacts to core path, beach and waterfront users are proposed to be scoped out of the Bellrock OfTDA EIA.
1200. The presence of intermittent localised vessels and marking buoys (temporary construction buoys) associated with the landfall works (including the anticipated use of a trenchless installation technique) in the north of Stonehaven Bay has the potential to disturb or displace water sports (e.g. kayaks and paddleboards), however for the limited duration of intermittent disturbance during construction, kayaks and paddleboarders will still be able to pass by safely. Ongoing consultation with the local community during project development and construction will further reduce the potential for disturbance. Due to the temporary and localised nature of the trenchless cable installation work at the landfall, the potential impacts on water sports within Stonehaven Bay are not expected to be significant and, therefore, are proposed to be scoped out of the Bellrock OfTDA EIA.
1201. The presence of intermittent localised vessels and marking buoys (temporary construction buoys) associated with the marine landfall works (e.g. trenchless duct installation work) in the north of Stonehaven Bay has the potential to disturb or displace the boating activities (recreational sailing, lessons and races) of the Aberdeen and Stonehaven Yacht Club between June and November. During the marine landfall works, all associated vessels will display the required lighting and marking to ensure navigational safety (see **Chapter 11: Shipping and Navigation**) as well as

provide advanced warning of activities through mechanisms such as Notice to Mariners and other appropriate communication channels. Continuous stakeholder engagement with the yacht club and other sailing stakeholders during project development and through the construction phase, particularly during the marine landfall works, will facilitate ongoing dialogue regarding planned activities and construction programmes, including advance notification of key works where practicable. This will allow stakeholders to understand timing and location of activities and may help to proactively manage interactions where necessary. Given the temporary and localised nature of the works, and the intermittent presence of vessels during the marine landfall works, it is expected that the impact on sailing activity within Stonehaven Bay will not be significant and, therefore, are proposed to be scoped out of the Bellrock OfTDA EIA.

1202. The temporary and localised nature of landfall works (including the anticipated use of a trenchless installation technique and marking buoys (temporary construction buoys)) is not expected to have an impact on local surfing activity in Stonehaven Bay, particularly as the construction activity is anticipated to take place further from shore than surfing activity. As discussed in **Chapter 5: Marine Geology, Oceanography, and Physical Processes**, because the marine exit point will be in greater depth than 10 m below Lowest Astronomical Tide, there will be no impact on the wave base. Therefore, impacts on surfing activity, including changes to surfing regime, are proposed to be scoped out from further assessment in the Bellrock OfTDA EIA.
1203. The proposed construction works would not release bacteria into the water and, therefore, not impact the water quality testing results conducted by SEPA during bathing water classification assessments. There is potential for increases in sediment concentrations in the water column, which could give rise to a visual plume and raise concerns with the general public, but any sediment plume would be short-term and localised to the location of the trenchless duct exit site. Therefore, impacts on bathing water quality are proposed to be **scoped out** for further assessment in the Bellrock OfTDA EIA.

## 13.6.2 Operation and Maintenance Phase

### 13.6.2.1 Impacts on Offshore Oil and Gas Operations and/or Disruption to Associated Activities

1204. As identified in **Section 13.4.3**, the marine infrastructure and other users study area overlaps with 39 licence blocks. Vessel activity and the implementation of Safety Zones associated with operations and maintenance activity of the Bellrock Offshore Transmission Infrastructure has the potential to restrict access to these licence block areas and, potentially, reduce or restrict exploration activities. Therefore, impacts on oil and gas fields and associated operations has been **scoped in** for further assessment in the Bellrock OfTDA EIA.

### 13.6.2.2 Impacts on other Offshore Wind Farms and/or Disruption to Associated Activities

1205. During the O&M phase of the Bellrock Offshore Transmission Infrastructure, the increase in vessel and implementation of Safety Zones for survey and/or repair work could restrict or disrupt activities associated with the construction and/or operations and maintenance activities of other wind farms. Therefore, impacts on other offshore wind farms has been **scoped in** for further assessment in the Bellrock OfTDA EIA.

1206. Although the final route for the Bellrock export cable has yet to be determined, the presence of other wind farm export cable routes within the Bellrock OfTDA indicates the potential for the Bellrock export cable to cross over other wind farm export cables (see **Figure 13.3 (Appendix A (Volume 1))**). Therefore, there is potential for O&M activities associated with the Bellrock export cable to impact other wind farm export cables. Impacts on other offshore wind farm export cables will be **scoped in** for further assessment in the Bellrock OfTDA EIA unless the final confirmed Bellrock export cable route can reach the landfall site without crossing over other wind farm export cables.

### 13.6.2.3 Disruption of Harbour and Port Operations

1207. The activities associated with operations and maintenance of the Bellrock Offshore Transmission Infrastructure will be temporary and localised. Therefore, these activities are not expected to have a significant impact on Stonehaven harbour (located within the Bellrock OfTDA) or Cove Bay (located within the marine infrastructure and other users study area) and are proposed to be **scoped out** of the Bellrock OfTDA EIA.

### 13.6.2.4 Impacts on Marine Disposal Sites and/or Disruption to Associated Activities

1208. During the operations and maintenance phase of the Bellrock Offshore Transmission Infrastructure, all maintenance and, where necessary, repair works will be temporary and localised and are not anticipated to have a significant impact on the marine disposal sites within the Bellrock OfTDA, or their associated activities. Therefore, marine disposal sites are proposed to be **scoped out** of the Bellrock OfTDA EIA.

### 13.6.2.5 Impacts on Subsea Cables and Pipelines (Utilities) and/or Disruption to Associated Activities

1209. During the operations and maintenance phase of the Bellrock Offshore Transmission Infrastructure, regular surveys and cable repair work (e.g. due to cable failure or damage) may be required, which has the potential to impact other subsea cables (i.e., Eastern Green Link 2, 3, and 5) and associated activities. Therefore, impacts on subsea cables and their associated activities during the O&M phase of the Bellrock OfTDA have been **scoped in** for further assessment in the Bellrock OfTDA EIA.

### 13.6.2.6 Impacts on Recreational Activities

1210. Activities associated with the O&M of the Bellrock Offshore Transmission Infrastructure are anticipated to comprise infrequent planned and unplanned maintenance and repair activities undertaken at discrete infrastructure locations. Compared with the construction phase, O&M activities are expected to require fewer vessels, occur less frequently, and be of a substantially smaller scale and spatial extent. Any maintenance or repair works would be localised to the specific infrastructure requiring intervention and would not result in widespread or long-term restrictions on recreational activities in the marine environment. During maintenance and repair works, appropriate vessel lighting and marking, and any required Safety Zones, would be implemented to maintain navigational safety. Given, the infrequent, temporary and localised nature of O&M activities, there is no potential for significant effects on recreational activities, and this impact is proposed to be **scoped out** of the EIA.

### 13.6.3 Decommissioning Phase

1211. The final details of the decommissioning programme of the Bellrock Offshore Transmission Infrastructure have yet to be determined and, therefore, the following impacts should be considered indicative. However, it is expected that the potential impacts of the decommissioning phase will mirror those of the construction phase. Therefore, the following impacts have been **scoped in** for further assessment within the Bellrock OfTDA EIA:

- Impacts on offshore O&G operations and/or disruption to associated activities;
- Impacts on other offshore wind farms and/or disruption to associated activities;
- Impacts on marine disposal sites and/or disruption to associated activities; and
- Impacts on subsea cables and pipelines and/or disruption to associated activities.

1212. The following impacts are proposed to be **scoped out** of further assessment in the Bellrock OfTDA EIA for the reasons stated in **Section 13.6.1**:

- Disruption to harbour and port operations; and
- Impacts on recreational activities.

### 13.6.4 Bellrock OfTDA Whole Project Assessment

1213. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on marine infrastructure and other users. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment. Whole project effects on shipping and navigational safety are considered in **Chapter 11: Shipping and Navigation**.

### 13.6.5 Potential Cumulative Effects

1214. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.

1215. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 13.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on marine infrastructure and other users. As discussed in **Section 13.3**, the Applicant will continue to engage with other marine users within



proximity of the Bellrock Project, to manage potential interactions that may occur. Cumulative effects on shipping and navigational safety are considered in **Chapter 11: Shipping and Navigation**.

### 13.6.6 Potential Transboundary Effects

1216. There are no marine infrastructure and other user receptors associated with European Economic Area states within the marine infrastructure and other users study area. Therefore, there is no potential for impacts on transboundary receptors, and transboundary impacts are **scoped out** of the Bellrock OfTDA EIA.

### 13.6.7 Summary of Potential Impacts

1217. **Table 13.4** provides a summary of the potential impacts assessed within this **Bellrock OfTDA Scoping Report** for the construction, operations and maintenance, and decommissioning phases of the Bellrock OfTDA and whether they have been scoped in or out of the Bellrock OfTDA EIA.

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**Table 13.4: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Marine Infrastructure and Other Users**

| Potential Impact                                                                              | Receptor(s)                                                                                                                                                                                                                                 | Scoped In or Scoped Out (✓ or X) |     |                 |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----|-----------------|
|                                                                                               |                                                                                                                                                                                                                                             | Construction                     | O&M | Decommissioning |
| Impacts on offshore O&G operations and/or disruption to associated activities                 | Oil and gas fields/operations                                                                                                                                                                                                               | ✓                                | ✓   | ✓               |
| Impacts on other offshore wind farms and/or disruption to associated activities               | <ul style="list-style-type: none"> <li>▪ Ossian;</li> <li>▪ Morven;</li> <li>▪ Bowdun;</li> <li>▪ Kincardine; and</li> <li>▪ Aspen (export cable).</li> </ul>                                                                               | ✓                                | ✓   | ✓               |
| Disruption of harbour and port operations                                                     | <ul style="list-style-type: none"> <li>▪ Stonehaven Harbour; and</li> <li>▪ Cove Bay</li> </ul>                                                                                                                                             | X                                | X   | X               |
| Impacts on marine disposal sites and/or disruption to associated activities                   | Disposal sites located on the east coast.                                                                                                                                                                                                   | ✓                                | X   | ✓               |
| Impacts on subsea cables and pipelines (utilities) and/or disruption to associated activities | <ul style="list-style-type: none"> <li>▪ Eastern Green Link 2; and</li> <li>▪ Proposed Eastern Green Link's 3 and 5.</li> </ul>                                                                                                             | ✓                                | ✓   | ✓               |
| Impacts on recreational activities                                                            | <p>Full list of potential receptors (<b>Section 13.4.9</b>) includes:</p> <ul style="list-style-type: none"> <li>▪ Coastal paths;</li> <li>▪ Water sports;</li> <li>▪ Surfing;</li> <li>▪ Sailing; and</li> <li>▪ Bathing water.</li> </ul> | X                                | X   | X               |

| Potential Impact                        | Receptor(s)                                                              | Scoped In or Scoped Out (✓ or X) |     |                 |
|-----------------------------------------|--------------------------------------------------------------------------|----------------------------------|-----|-----------------|
|                                         |                                                                          | Construction                     | O&M | Decommissioning |
| Bellrock OfTDA Whole Project Assessment | Receptors of potential effects from Offshore Transmission Infrastructure | ✓                                | ✓   | ✓               |
| Cumulative effects                      | Receptors of potential effects from Offshore Transmission Infrastructure | ✓                                | ✓   | ✓               |
| Transboundary effects                   | N/A                                                                      | X                                | X   | X               |

## 13.7 Proposed Approach to Impact Assessment

1218. The methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** will be followed when preparing the marine infrastructure and other users chapter for the Bellrock OfTDA EIA Report. Stakeholders set out in **Section 13.3** will be consulted. Alongside consultation with relevant stakeholders and owners/operators of identified projects/infrastructure, the 'The Crown Estate and CES Agreements and Oil and Gas Licences' (NSTA, 2023) will be considered.
1219. The Applicant will continue to engage with other marine users within the marine infrastructure and other users study area during site selection and development of the Bellrock Offshore Transmission Infrastructure and through the Bellrock OfTDA EIA process.

## 13.8 Scoping Questions for Consultees

1220. The following questions are posed to consultees to help frame and focus their response to this scoping exercise for marine infrastructure and other users, which will in turn inform the EIA:
- Do you agree that all the relevant data sources have been identified in **Section 13.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 13.2**?
  - Do you agree with the proposed study area as presented in **Section 13.4.1**?
  - Do you agree that the data sources will be sufficient to inform the Bellrock OfTDA EIA baseline for marine infrastructure and other users?
  - Do you agree that all the potential impacts on marine infrastructure and other users resulting from the Bellrock Offshore Transmission Infrastructure have been identified in **Section 13.5**?
  - Do you agree with the impacts that have been scoped in and scoped out for further assessment in the Bellrock OfTDA EIA?
  - Do you have any other matters or information sources that you wish to present?

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# 14 Marine Archaeology and Cultural Heritage

## 14.1 Introduction

1221. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on marine archaeology and cultural heritage.
1222. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1223. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1224. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure (FBSS) OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two FBSS OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1225. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026a). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1226. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on marine archaeology and cultural heritage receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
1227. This Chapter should be read in conjunction with the following chapters of this **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 15: Seascape, Landscape and Visual Impact;** and
  - **Chapter 19: Major Accidents and Disasters.**
1228. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 14.2 Legislation, Policy and Guidance

1229. **Table 14.1** sets out the legislation, policy and guidance which have been considered in the preparation of the Chapter and will be considered within the Bellrock OfTDA EIA Report where appropriate. The overarching policy and legislation relevant to the infrastructure and activities associated with the Bellrock OfTDA is described in **Chapter 2: Legislative and Policy Context**.



**Table 14.1: Summary of Relevant Legislation, Policy and Guidance for Marine Archaeology and Cultural Heritage**

| Relevant Legislation, Policy and Guidance                                                                                                                              | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <p>United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972</p> | <p>The Convention is a unique international instrument that seeks to protect both cultural and natural heritage.</p> <p>Article 1. For the purposes of this Convention, the following shall be considered as "<i>cultural heritage</i>": [...] sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.</p> <p>Article 4. Each State Party to this Convention recognises that the duty of ensuring the identification, protection, conservation, presentation, and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State. It will do all it can to this end, to the utmost of its own resources and, where appropriate, with any international assistance and co-operation financial, artistic, scientific, and technical, which it may be able to obtain.</p> <p>The Chapter describes the cultural heritage (known and potential heritage assets) within the Bellrock OfTDA Scoping Boundary (<b>Section 14.4</b>) and identifies the potential impacts to cultural heritage receptors (<b>Section 14.6</b>) taking account of embedded mitigation (<b>Section 14.5.1</b>) with the aim of ensuring the protection, conservation and / or investigation and recording of cultural heritage for transmission to future generations.</p> |
| <p>United Nations Convention for the Law of the Sea, 1982</p>                                                                                                          | <p>Article 303. Archaeological and historical objects found at sea: States have the duty to protect objects of an archaeological and historical nature found at sea and shall cooperate for this purpose. In order to control traffic in such objects, the coastal State may, [...] presume that their removal from the seabed in the zone referred to in that article without its approval would result in an infringement within its territory or territorial sea of the laws and regulations referred to in that article.</p> <p>The embedded mitigation (<b>Section 14.5.1</b>) aims to ensure the protection, conservation and / or investigation and recording of objects of an archaeological and historical nature found at sea. Consultation with heritage stakeholders will be undertaken throughout the process, to ensure that, where mitigation is required, approval is sought before commencement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p>European Convention on the Protection of the Archaeological Heritage, Valletta, (Revised) 1992</p>                                                                  | <p>The 1992 Convention aims to protect the European archaeological heritage "<i>as a source of European collective memory and as an instrument for historical and scientific study</i>".</p> <p>Article 1. The aim of this (revised) Convention is to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study.</p> <p>The Chapter describes the cultural heritage (known and potential heritage assets) within the Bellrock OfTDA Scoping Boundary (<b>Section 14.4</b>) and identifies the potential impacts to cultural heritage receptors (<b>Section 14.6</b>) taking account of embedded mitigation (<b>Section 14.5.1</b>) with the aim of ensuring the protection, conservation and / or investigation and recording of cultural heritage for transmission to future generations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Relevant Legislation, Policy and Guidance                                     | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UNESCO Convention on the Protection of the Underwater Cultural Heritage, 2001 | <p>Although the United Kingdom (UK) has not ratified UNESCO, the principles set out in the Annex have been adopted.</p> <p>Rule 1. of the Annex states: The protection of underwater cultural heritage through in situ preservation shall be considered as the first option. Accordingly, activities directed at underwater cultural heritage shall be authorised in a manner consistent with the protection of that heritage, and subject to that requirement may be authorised for the purpose of making a significant contribution to protection or knowledge or enhancement of underwater cultural heritage.</p> <p>As described in <b>Section 14.5.1</b> archaeological exclusion zones (AEZs) are the primary form of mitigation for known heritage assets, thus preserving them in situ.</p> |
| <b>Legislation</b>                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Merchant Shipping Act 1995                                                    | This Act sets out the procedures for determining the ownership of underwater finds classified as a 'wreck' (flotsam, jetsam, derelict and lagan) found in or on the shores of the sea or any tidal water. It includes ship, aircraft, hovercraft, parts of these, their cargo or equipment. The Receiver of Wreck is responsible for processing incoming reports of wreck and cargo. The Bellrock OfTDA has the potential to impact items associated with wrecks, which fall within the definition of 'wreck'.                                                                                                                                                                                                                                                                                      |
| Protection of Military Remains Act 1986                                       | Provides protection for the wreckage of military aircraft and certain military wrecks. Designations can be either as a Controlled Site or Protected Place where access may be permitted but any operations that may disturb the site are illegal unless licenced by the Ministry of Defence. All military aircraft are automatically protected under this legislation; however, vessels must be designated individually.                                                                                                                                                                                                                                                                                                                                                                            |
| Marine (Scotland) Act 2010                                                    | <p>The Marine (Scotland) Act 2010 provides the legislative and management framework for the marine environment within Scottish Territorial Waters (from MHWS out to 12 nm).</p> <p>Section 67 of this Act allows Scottish Ministers to designate a Historic Marine Protected Area (HMPA). HMPAs consist of marine historic assets (e.g. historic shipwrecks) of national importance within Scottish territorial waters (Section 73).</p> <p>HMPAs have replaced use in Scotland of Section 1 of the Protection of Wrecks Act 1973.</p> <p>There are currently no HMPAs within the Bellrock OfTDA Scoping Boundary.</p>                                                                                                                                                                              |
| <b>Policy</b>                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| National Planning Framework 4 (Scottish Government, 2023)                     | <p>National Planning Framework 4 provides the national planning policy and framework for Scotland and includes policies relevant to both the delivery of renewable energy infrastructure and the protection of Scotland's historic environment. The policies most relevant to the marine archaeology and cultural heritage assessment area:</p> <ul style="list-style-type: none"> <li>Policy 1: Tackling the Climate and Nature Crisis; and</li> <li>Policy 7: Historic Assets and Places.</li> </ul>                                                                                                                                                                                                                                                                                              |

| Relevant Legislation, Policy and Guidance                                                                                                        | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scotland's National Marine Plan (Scottish Government, 2015)                                                                                      | <p>The purpose of Scotland's National Marine Plan is to set out strategic policies for the sustainable development of Scotland's marine resources out to 200 nm.</p> <p>Policy GEN 6 Historic environment: 'Development and use of the marine environment should protect and, where appropriate, enhance heritage assets in a manner proportionate to their significance'.</p>                                                                                                                                                      |
| Historic Environment Policy for Scotland (Historic Environment Scotland, 2019)                                                                   | The document is designed to support and enable good decision-making about changes to the historic environment. The Historic Environment Policy for Scotland sets out a series of principles and policies for the recognition, care and sustainable management of the historic environment which have informed development of the proposed scope and methodology of the assessment.                                                                                                                                                  |
| <b>Guidance</b>                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Historic Environment Guidance for the Offshore Renewable Energy Sector (Collaborative Offshore Wind Research into the Environment; COWRIE, 2007) | Guidance note on the survey, appraisal and monitoring of the historic environment during the development of offshore renewable energy projects in the UK. The guidance is applicable to the marine environment and the coastal environment adjacent to any development, encompassing the inter-tidal area, coastal margin and those areas further inland likely to be affected by offshore renewable energy developments.                                                                                                           |
| Historic Environment Scotland (HES) (2019- updated May 2021)<br>Scotland's Historic Marine Protected Areas                                       | Explains what historic marine protected areas are and HES' role in advising the Scottish Government in designating these areas.                                                                                                                                                                                                                                                                                                                                                                                                     |
| Archaeological Written Schemes of Investigation for Offshore Wind Farm Projects (The Crown Estate, 2021)                                         | High level guidance on a range of archaeological methodologies that may be required in the production of Written Schemes of Investigation (WSIs) and Method Statements.                                                                                                                                                                                                                                                                                                                                                             |
| Guidance for Assessment of Cumulative Impacts on the Historic Environment from Offshore Renewable Energy (Oxford Archaeology, 2008)              | <p>Guidance on cumulative impacts on the historic environment arising from offshore renewable energy projects.</p> <p>The guidance identifies issues relating to the assessment of cumulative and synergistic effects at each stage of the Strategic Environmental Assessment / EIA process from screening and scoping to decision-making and implementation.</p>                                                                                                                                                                   |
| Institute of Environmental Management and Assessment Principles of Cultural Heritage Impact Assessment (2021)                                    | <p>This publication sets out guiding principles to supplement existing guidance and give a consistent framework for cultural heritage in a variety of settings. The application of these principles and good practice is intended to enable practitioners to improve the standard of cultural heritage impact assessment, regardless of their specialism within the discipline.</p> <p>The impact assessment methodology for cultural heritage impact assessment described in <b>Section 14.7</b> is based on these Principles.</p> |
| Joint Nautical Archaeology Policy Committee (JNAPC) Code of Practice for Seabed Development (JNAPC and The Crown Estate 2006)                    | This code builds on the principles set out in the original Code (JNAPC, 1995) and offers guidance to developers on issues such as risk management and legislative implications. A list of contacts for further advice is also provided. The code also highlights the responsibility of developers in protecting the UK's marine heritage.                                                                                                                                                                                           |

| Relevant Legislation, Policy and Guidance                                                                                                    | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Managing Change in The Historic Environment: Conserving our Underwater Heritage (HES, 2025)                                                  | <p>This guidance is a practical guide on how to assess and manage the impacts of change while respecting the cultural significance of underwater heritage sites.</p> <p>This guidance is about conserving underwater heritage around the coasts of Scotland and in freshwater environments such as lochs and rivers.</p> <p>This guidance is primarily for practitioners and decision-makers who encounter underwater heritage in the course of their duties.</p> |
| Offshore Wind Evidence + Knowledge Hub (OWEKH). Evidence Review Note: Marine Historic Environment (OWEKH, 2026)                              | <p>This note has been developed by OWEKH's Marine Historic Environment Technical Topic Group and provides comprehensive guidance on assessing the impacts of offshore wind farm projects on the marine historic environment.</p> <p>The note aims to support more effective, proportionate, and consistent EIAs.</p>                                                                                                                                              |
| Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector (Gribble and Leather, 2011) | <p>Guidance on how best to achieve the integration of offshore geotechnical investigations and their data outputs, arising from offshore renewable projects, with archaeological historic environment analysis and ensure optimal use of geotechnical data.</p>                                                                                                                                                                                                   |

## 14.3 Consultation

1230. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to marine archaeology and cultural heritage for the Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to marine archaeology and cultural heritage are provided in **Table 14.2**.
1231. Technical consultation with relevant heritage stakeholders (including Aberdeenshire Council for works at landfall) will be undertaken as part of the Bellrock OfTDA EIA, following the Scoping Opinion from MD-LOT. This will help to identify and agree the primary methodologies, present initial findings and ensure potential historic environment issues and risks are identified and considered during the EIA.

**Table 14.2: Consultation Relevant to Marine Archaeology and Cultural Heritage**

| Consultee                                 | Date/ Document                                                                    | Comment                                                                                                                                                                                                                                                                                                              | How Comment is Addressed                                                                                                                                                 |
|-------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Aberdeenshire Council Archaeology Service | 22 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the approach to the study area and baseline?</u></b><br>Yes – though note “Canmore” was an online portal, rather than a data set, which has been replaced by the Trove.scot web portal; the correct data set to be used is the National Record of the Historic Environment (NRHE). | Noted. The NRHE data set is listed in <b>Section 14.4.2</b> and will be used, along with other relevant data sources, to inform the baseline for the Bellrock OfTDA EIA. |
| Aberdeenshire Council Archaeology Service | 22 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the identified key receptors?</u></b><br>Yes.                                                                                                                                                                                                                                      | Noted.                                                                                                                                                                   |
| Aberdeenshire Council Archaeology Service | 22 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the potential impacts for scoping in / out?</u></b><br>Yes.                                                                                                                                                                                                                        | Noted.                                                                                                                                                                   |
| Aberdeenshire Council Archaeology Service | 22 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | <b><u>Question: Do you agree with the proposed approach to the impact assessment?</u></b><br>Yes.                                                                                                                                                                                                                    | Noted.                                                                                                                                                                   |

## 14.4 Existing Environment

### 14.4.1 Study Area

1232. The marine archaeology study area for scoping is defined as the Bellrock OfTDA Scoping Boundary shown in **Figure 14.1 (Appendix A (Volume 1))**.
1233. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The marine archaeology and cultural heritage study area will be updated for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4 in Chapter 1: Introduction**).
1234. As discussed in **Section 3.4.1 (Chapter 3: Project Description)**, the OfSS(s) will be located within the Bellrock OfTDA in the area overlapping with the Bellrock WFDA (120 km from Stonehaven) the OfSS(s) would not be visible from shore. Therefore, there would be no pathway for temporary or permanent impacts to the setting of onshore heritage assets, which could affect heritage significance. Equally the OfRCS(s) will be at least 39 km from shore, at this distance the OfRCS(s)

will not be prominent, so there would be no change to the setting and no discernible adverse effect. As such there is no study area proposed for considering setting impacts to onshore designated heritage assets and these impacts are scoped out from the Bellrock OfTDA EIA (see **Section 14.6.7**).

## 14.4.2 Data and Information Sources

1235. **Table 14.3** sets out the information and data sources which have been considered in the preparation of the Chapter, and will be considered within the Bellrock OfTDA EIA Report where relevant matters are scoped in.

**Table 14.3: Summary of Key Data and Information Sources for Marine Archaeology and Cultural Heritage**

| Dataset                                                                                                                                   | Date          | Description                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| United Kingdom Hydrographic Office (UKHO)                                                                                                 | 2026          | An extensive data set containing over 94,000 charted, uncharted, live, and dead wrecks and obstructions from around the world.                                                                                                                                                         |
| NRHE                                                                                                                                      | 2026          | Maritime records, including documented losses of vessels, and records of terrestrial monuments and findspots, including the archaeological excavation index.                                                                                                                           |
| Data held by HES                                                                                                                          | 2026          | Records of designated heritage assets within Scotland, maintained by Historic Environment Scotland. Geographic Information System data for all Protected Wrecks, Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Registered Battlefields.                      |
| Aberdeenshire Historic Environment Record                                                                                                 | 2026          | Contains data on all recorded non-designated heritage assets, held by Aberdeenshire Council. The data includes archaeological, historic landscape and historic building information. Information on previous events (archaeological surveys and investigations) will also be obtained. |
| British Geological Survey                                                                                                                 | 2026          | Historic borehole logs and the wider geological background for the region.                                                                                                                                                                                                             |
| Scottish Archaeological Research Framework                                                                                                | 2026          | The primary resource for Scottish archaeology, one which provides an overview of the subject and also a set of relevant research questions to guide assessment.                                                                                                                        |
| Existing archaeological studies and published sources                                                                                     | Various       | Background information on the archaeology of the area, including the results of previous archaeological assessments in the North Sea area.                                                                                                                                             |
| Geophysical survey (August to September 2023) data from within the Bellrock WFDA and associated archaeological assessment by MSDS (2024). | 2023;<br>2024 | Geophysical data acquired by the Applicant as part of offshore survey campaign within the Bellrock WFDA (Bellrock Offshore Wind Farm Limited (2026b)). Desk-based study carried out by MSDS (2024) providing an archaeological interpretation of the geophysical data.                 |

#### 14.4.2.1 Site-specific Surveys

1236. Site-specific surveys undertaken in 2023 within the Bellrock WFDA, which overlaps with part of the Bellrock OfTDA, will be used to inform the baseline characterisation where spatially relevant (**Table 14.4**).
1237. In addition, a site-specific geophysical survey will be undertaken within the remaining Bellrock OfTDA in August 2026, as noted in **Table 14.4**. Subject to survey progress, the geophysical survey data collected within the remainder of the Bellrock OfTDA (i.e. the area outside the overlap with the Bellrock WFDA) may also be used to further inform the marine archaeology and cultural heritage baseline. Should the geophysical survey data not be available to inform the EIA, the assessment will rely on existing available datasets and publicly available information sources. This approach has previously been discussed with MD-LOT and relevant consultees through consultation on a technical memo submitted by Bellrock Offshore Wind Farm Limited (2025) (see **Section 14.3** for further detail).
1238. If available, the Bellrock OfTDA geophysical survey data will be subject to archaeological interpretation to identify and characterise known and potential marine archaeological receptors and features of cultural heritage interest within the offshore export cable corridor.
1239. **Table 14.4** summarises the surveys relevant to marine archaeology and cultural heritage that have been, or will be, undertaken to inform the baseline.

**Table 14.4: Summary of Site-specific Survey Data Relevant to Marine Archaeology and Cultural Heritage**

| Dataset                                                                                                       | Description of Coverage                                               | Year |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|------|
| Bellrock WFDA geophysical survey, including archaeological interpretation, as detailed in <b>Table 14.3</b> . | Bellrock WFDA                                                         | 2023 |
| Bellrock OfTDA geophysical survey                                                                             | Bellrock OfTDA (excluding the area of overlap with the Bellrock WFDA) | 2026 |

#### 14.4.3 Baseline Environment

1240. An initial high-level desk-based review of existing literature and data sources was undertaken to support this scoping exercise. The marine archaeology study area encompasses all receptors seawards of MHWS.
1241. There has been limited published baseline data carried out in the immediate area of the marine archaeology study area. The operational Kincardine and proposed Bowdun offshore wind farms fall within but are excluded from the Bellrock OfTDA Scoping Boundary. The proposed Morven and Ossian offshore wind farms are located adjacent to the Bellrock OfTDA Scoping Boundary, information from which will be considered in the baseline in the Bellrock OfTDA EIA Report, when publicly available. Baseline information within the Bellrock WDFDA EIA (Bellrock Offshore Wind, 2026a) will also be used. For details on each project, please refer to **Chapter 13: Marine**



**Infrastructure and Other Users.** Figure 13.3 (Appendix A (Volume 1)) shows the surrounding proposed, consented and operational offshore wind farm developments.

1242. No prehistoric archaeological artefacts or landscapes have been recorded within the marine archaeology study area. Generally, it is accepted that the potential for prehistoric archaeology and landscapes across wide areas of the UK Continental Shelf is high (Wessex Archaeology, 2009), however it is noted that potential for site preservation in the UK Continental Shelf at depths greater than 80 m is low (Flemming, 2003).
1243. Over the past one million years, Scotland and its surrounding shelf area have undergone significant transformations due to global glacial and interglacial cycles. Specifically, in the last 500,000 years, Scotland has experienced at least six glaciation periods, with sea levels dropping to approximately 120 metres below present levels (Scottish Archaeological Research Framework, 2012). These glacial periods were interspersed with interglacial intervals, during which exposed landmasses expanded terrestrial habitats, creating favourable conditions for human occupation. Subsequent glacial activity and marine transgressions, accompanied by rising sea levels, however facilitated the erosion of these landscapes and the loss of associated evidence of human habitation.
1244. While the presence of prehistoric archaeology and landscapes is currently unknown within the marine archaeology study area, a more thorough evaluation of archaeological information will be incorporated into the desk-based assessment), which will inform a full assessment of likely potential and then subsequently guide a comprehensive mitigation plan (see **Section 14.5.1**).
1245. Within the marine archaeology study area, there are no nationally important wrecks designated as Historic Marine Protected Areas under the Marine (Scotland) Act (2010). Similarly, there are no sites protected under the Protection of Military Remains Act 1986. Should military remains be identified during the lifetime of the Bellrock Offshore Transmission Infrastructure, these could be protected under this Act.
1246. There is high potential for other wreck, wreck remains, aircraft and aircraft remains to be present within the marine archaeology study area. The locations of UKHO records are shown in **Figure 14.1 (Appendix A (Volume 1))**. Within the marine archaeology study area, where it is overlapped by the Bellrock WFDA, the UKHO records one wreck, the *Karen* (UKHO ID: 3209) which sank in 1978. The Bellrock WFDA geophysical survey (utilising magnetometer, side-scan sonar, sub bottom profiler and multi beam echosounder equipment) was carried out within the Bellrock WFDA between August and September 2023. The record of the *Karen* was created following a reported sinking, and no evidence of a potential wreck at the recorded location was identified within the geophysical and hydrographic data. It is unlikely that the remains of the vessel lie at the stated position given the lack of evidence shown in the geophysical and hydrographic data. As this vessel is a recent loss, it is not of archaeological significance.
1247. The Bellrock WFDA geophysical survey (MSDS, 2024) identified four anomalies interpreted as of high archaeological potential within the Bellrock OFTDA Scoping Boundary, three of which are located within the Bellrock WFDA. These comprise:
- Anomaly BR24\_067, which is the remains of a wrecked vessel measuring 33.9 m x 7.5 m with a measurable height of 3.6 m. the wreck is upright and orientated north-south with what appears to be the bow towards the south;



- Anomaly BR24\_070 which is the remains of wrecked vessel measuring 31.8 m x 6.9 m with a measurable height of 3.4 m. The wreck is upright and orientated east-west with what appears to be the bow towards the west. Scour is visible predominantly to the east and the west, where there is also an accumulation of seabed to the southeast and southwest of the wreck;
- Anomaly BR24\_101 lies outside the WFDA (but within the OfTDA Scoping Boundary). The Anomaly is a small concentration of features distributed over an area of 43.5m x 13.4m with a measurable height of 1.3m. The overall shape, dimensions and presence of linear features may indicate anthropogenic debris; and
- Anomaly BR24\_142 which is the remains of wrecked vessel measuring 49.4 m x 8.9 m with a measurable height of 6.1 m. The wreck is upright and orientated north-south with what appears (tentatively) to be the bow towards the south. Scour is visible predominantly to the north and the south. The anomaly corresponds with UKHO record 102075.

1248. There are 42 further UKHO records within the marine archaeology study area (outside the Bellrock WFDA):

- 18 relate to named wrecks, 13 of which are live. Of the 13 which are known and identified:
  - Four are fishing vessels / Trawlers lost in 2000 (Karianda), 1985 (Bishop Burton (both possible identifications from survey data)), 1993 (Viking Queen) and 1958 (Luffness);
  - Three are steamships all sunk during the Second World War. These include Gowrie and Branksea (possibly) lost in 1940 and Cushendall (possible identification from survey data) lost in 1941;
  - One is the steam ship Matador which foundered three miles off Stonehaven in 1924; and
  - Five are ships lost in the First World War, including four steam ships (Baysoto, Silverburn, Arno and Sandvik (possibly)), and a boarding vessel (His Majesty's Ship Tithonus) lost in 1918.
- There are also 14 unnamed wrecks within the dataset which are unidentified and, therefore, of unknown archaeological importance. These records contain limited information on their current condition, making the status of these sites uncertain;
- 10 are recorded as 'dead' (a wreck or obstruction which has not been detected by repeated surveys, and is therefore considered not to exist) but are locations at which archaeological material may still remain, possibly buried or dispersed and no longer causing an obstruction to navigation;
- One is a fisherman's fastener (an unidentified feature on the seabed recorded by fishermen as an obstruction to trawling) or are wrecks / obstructions recorded from fishing charts which have not subsequently been located, which may indicate the presence of previously unrecorded archaeological material;
- Two records are described as foul ground and one as an unidentified obstruction which may also represent previously undiscovered archaeological material; and
- One of the records correspond to the reported sinking of Helicopter (G-ASNM) which crashed into the sea while enroute from Dyce Airport to oil rig Staflo in 1970 and is not of archaeological interest.

1249. There are a further 297 NRHE Maritime records within the marine archaeology study area 60 of which are duplications from the UKHO dataset. The NRHE maritime records include a further 13 wrecks however the majority of the records relate to a reported sinking (278) of 19<sup>th</sup> and 20<sup>th</sup> century vessels / aircraft and six unknown records.
1250. The potential receptors that may be present within the marine archaeology study area are summarised as:
- Palaeolandscape features and sub-seabed deposits of palaeoenvironmental interest;
  - Prehistoric occupation sites;
  - Wreck and aviation remains; and
  - Buried archaeology (including palaeoenvironmental deposits) within the intertidal zone below MHWS.

## 14.5 Potential Impacts

1251. Potential impacts to marine archaeology and cultural heritage assets include both direct and indirect impacts. Impacts can also occur from changes (both temporary and permanent) to the setting of heritage assets (the surroundings in which the heritage assets are located, experienced, and appreciated), which could affect heritage significance.
1252. Direct impacts to heritage assets present on the seafloor or buried under the seabed, may result in damage to, or the destruction of any archaeological material, or the relationship between that material and the wider environment (stratigraphic context or setting). Relationships between archaeological material and the wider environment are crucial to developing a full understanding of such material. These impacts may occur if heritage assets or material are present within the footprint of the Bellrock Offshore Transmission Infrastructure (i.e. FBSS OfSS(s); or FBSS OfRCS(s), interconnector cable(s), offshore export cables and associated cable and / or scour protection) or from construction related activities (i.e. seabed clearance and anchoring).
1253. There is also the potential for activities associated with the Bellrock Offshore Transmission Infrastructure to directly and indirectly change the local and regional hydrodynamic and sedimentary process regimes. Changes in tidal currents may affect the stability of nearby morphological and archaeological features. Indirect impacts to heritage assets may occur if buried heritage assets become exposed to increased wave / tidal action, as these will deteriorate farther than assets protected by sediment. Conversely, if increased sedimentation results in an exposed site becoming buried, it may add some protection and be considered a beneficial impact. This will be considered based on the results of the assessment of local and regional hydrodynamic and sedimentary process regimes undertaken for the marine physical processes (refer to **Chapter 5: Marine Geology, Oceanography, and Physical Processes**).
1254. Impacts to the significance of an offshore heritage asset may also occur if a development changes the setting of the asset (the surroundings in which the heritage asset is located, experienced and

appreciated) (HES, 2020). As noted in **Section 14.4.1**, setting impacts to onshore designated heritage assets are proposed to be **scoped out** from the EIA (see **Section 14.6.4**).

### 14.5.1 Embedded Mitigation Measures

1255. Embedded mitigation has been identified, as presented in **Table 14.5** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
1256. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 14.5: Embedded Mitigation Measures Relevant to Marine Archaeology and Cultural Heritage**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                             | Relevance to Assessment                                                                                                                                                                                                                                                                                       | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                               |                 |
| ✓                          | X   | X               | A trenchless technique will be used at the landfall to avoid direct disturbance to the intertidal and shallow subtidal environment, thereby reducing habitat loss and seabed disturbance.                                                                                                                                               | Use of a trenchless technique at the landfall will avoid direct disturbance to intertidal and shallow subtidal areas. This will reduce the potential for impacts on any archaeological remains that may be present within these environments.                                                                 | Primary         |
| ✓                          | ✓   | ✓               | Development of and adherence to a Cable Plan (CaP). The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.   | Implementation of the CaP will ensure cable installation, burial and protection measures are designed and managed to minimise unnecessary seabed disturbance. This will reduce the potential for impacts on marine archaeological remains during cable installation and O&M.                                  | Tertiary        |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                   | Periodic geophysical surveys and remedial works, where required, will support the ongoing management of the Bellrock Offshore Transmission Infrastructure and minimise the need for unplanned intervention works. This will reduce the potential for inadvertent disturbance of marine archaeological assets. | Primary         |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance. | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will support the protection of marine archaeological and cultural heritage assets.                             | Tertiary        |
| ✓                          | X   | X               | Development of an Unexploded Ordnance (UXO) Threat and Risk Assessment.                                                                                                                                                                                                                                                                 | Undertaking a detailed UXO Threat and Risk Assessment will support the identification and application of appropriate clearance methods                                                                                                                                                                        | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                            | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                    |                 |
|                            |     |                 | All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | and mitigation measures. This will reduce the potential for inadvertent impacts on marine archaeological remains during UXO clearance.                                                                                                                                                                                             |                 |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will support the implementation of good environmental practice. This will help minimise the potential for indirect effects on the marine archaeology and cultural heritage assets. | Tertiary        |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme (DP).</p> <p>The DP will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                                                                                                                                                                                                                                                            | Implementation of a DP will ensure decommissioning is planned and undertaken in a safe, orderly and controlled manner. This will minimise the potential for disturbance to marine archaeological and cultural heritage assets during decommissioning of the Bellrock Offshore Transmission Infrastructure.                         | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | ✓   | X               | Commitment to preparation and agreement on an Offshore WSI and Protocol for Archaeological Discoveries (PAD).                                                                                                                                                                                                                                                                        | Implementation of an Offshore WSI and PAD will provide a clear framework for the identification, recording and management of known and previously unidentified archaeological remains. This will reduce the risk of inadvertent impacts on marine cultural heritage assets.                                                                                | Tertiary        |
| ✓                          | ✓   | X               | The implementation of AEZs around sites identified as having a known important archaeological potential to mitigate the potential impacts from offshore infrastructure.                                                                                                                                                                                                              | Implementation of AEZs around sites of known archaeological importance will prevent direct interaction between the Bellrock Offshore Transmission Infrastructure and identified heritage assets. This will protect archaeological remains from physical disturbance.                                                                                       | Tertiary        |
| ✓                          | ✓   | X               | Archaeological input into specifications for and analysis of future geophysical surveys and/or geotechnical surveys within the Bellrock OFTDA, including a provision for sampling, analysis and reporting of recovered cores, if appropriate.<br><br>The results of all geoarchaeological investigations will be compiled in a final report which includes a sediment deposit Model. | Archaeological input to the design and interpretation of geophysical and geotechnical surveys will improve the identification and characterisation of archaeological features and deposits. This will ensure that due consideration, to support their protection, is given during the final design of the Bellrock Offshore Transmission Infrastructure.   | Tertiary        |
| ✓                          | ✓   | ✓               | Archaeologists to be consulted in the preparation of any Remotely Operated Vehicle or diver surveys and in monitoring/checking of data, if appropriate based upon the findings of the archaeological assessment of geophysical survey data.                                                                                                                                          | Archaeological involvement in the planning and review of Remotely Operated Vehicle and diver surveys will improve the identification and interpretation of potential archaeological features. This will ensure that due consideration, to support their protection, is given during the final design of the Bellrock Offshore Transmission Infrastructure. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | X   | X               | All anomalies of possible archaeological potential will be reviewed against the final layout and design. If they are likely to be impacted, these anomalies would undergo further archaeological investigation. Should these anomalies prove to be of archaeological importance then future AEZs may be implemented following consultation with heritage stakeholders.                                                                                                                                               | Review of anomalies against the final layout of the Bellrock Offshore Transmission Infrastructure, together with further investigation where required, will improve understanding of their archaeological significance. This will enable appropriate measures to be implemented to avoid or minimise impacts on important heritage assets. | Tertiary        |
| ✓                          | X   | X               | Micro-siting of Offshore Transmission Infrastructure to avoid known heritage assets (AEZs) where practicable.                                                                                                                                                                                                                                                                                                                                                                                                        | Micro-siting of the Bellrock Offshore Transmission Infrastructure to avoid known heritage assets, where practicable, will reduce the potential for direct disturbance to archaeological remains. This will help preserve the integrity of important cultural heritage assets.                                                              | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.<br><br>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols. | Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with measures in place to minimise unnecessary seabed disturbance. This will support the protection of marine archaeological and cultural heritage assets during construction.                     | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                         |                 |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p> | Regular inspection and maintenance, including subsea surveys, will support the ongoing monitoring and management of the Bellrock Offshore Transmission Infrastructure throughout its operational life. This will reduce the likelihood of unplanned interventions that could affect marine archaeological and cultural heritage assets. | Tertiary        |

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## 14.6 Scoping of Potential Impacts

### 14.6.1 Potential Impacts During Construction

#### 14.6.1.1 Direct Impacts to Heritage Assets

1257. Direct impacts may occur if archaeological material is present within the footprint of the Bellrock Offshore Transmission Infrastructure (i.e. from the installation of OfSS(s), OfRCS(s), offshore export cables and interconnector cable(s) and from seabed contact by legs of jack-up vessels (if used)).
1258. Therefore, this impact is **scoped in** for further assessment in the EIA.

#### 14.6.1.2 Indirect Impacts to Heritage Assets Associated with Changes to Marine Physical Processes

1259. Indirect impacts to heritage assets may occur if the physical presence of construction vessels and the Offshore Transmission Infrastructure, impact the hydrodynamic regime. Similarly, if seabed preparation associated with the installation of the OfSS(s), OfRCS(s), offshore export cables and / or interconnector cable(s) (see **Chapter 3: Project Description**) results in localised effects upon sedimentary processes this could lead to indirect impacts to heritage assets.
1260. Therefore, this impact is **scoped in** for further assessment in the EIA.

#### 14.6.1.3 Change to the Setting of Heritage Assets

1261. Construction works, including vessel movements between construction ports and the Bellrock OfTDA, would be temporary and short-term in nature. The OfSS(s), which would be located within the area overlapping with the Bellrock WFDA, are approximately 120 km offshore and therefore construction activities associated with the OfSS(s) would not result in temporary changes to the setting of onshore heritage assets. The OfRCS(s) will be located at least 39 km from the coastline (MHWS) and therefore construction activities associated with the OfRCS(s) are also not anticipated to result in discernible temporary changes to the setting of onshore heritage assets.
1262. The significance of offshore heritage assets is not considered to derive from their setting, but primarily their historical and research value. As such, temporary changes to the setting of offshore heritage assets during construction are not anticipated to affect their cultural significance.
1263. Whilst there is potential for temporary changes to the setting of onshore and offshore heritage assets because of construction works, these works would be temporary and of sufficiently short duration that they are not anticipated to give rise to discernible adverse effects.
1264. In line with recent OWEKH guidance (2026), potential impacts on the significance of onshore and offshore heritage assets through temporary changes to setting during construction are therefore proposed to be **scoped out** of further assessment in the EIA.

## 14.6.2 Potential Impacts During Operation and Maintenance

### 14.6.2.1 Direct Impacts to Heritage Assets

1265. Direct impacts may occur if archaeological material is present within the footprint of works required for routine maintenance activities which disturb the seabed (i.e. from seabed contact by legs of jack-up vessels and / or vessel anchors). Similarly, this can occur in exceptional circumstances such as the repairs or reburial of interconnector cable(s). However, given the areas where such activities would be undertaken would already have been disturbed during construction, there would be limited further impact during O&M.
1266. This impact is **scoped in** for further assessment in the EIA.

### 14.6.2.2 Indirect Impacts to Heritage Assets Associated with Changes to Marine Physical Processes

1267. Indirect impacts to heritage assets may occur if the physical presence of the installed infrastructure impacts the hydrodynamic or sedimentary regime. This includes the potential for increased scour around OfSS(s), OfRCS(s) and cable protection.
1268. Therefore, this impact is **scoped in** for further assessment in the EIA.

### 14.6.2.3 Change to the Setting of Heritage Assets

1269. The OfSS(s), which will be located within the area of overlap between the Bellrock OfTDA and Bellrock WFDA, are located 120 km offshore and therefore would not be visible from the coast. The OfRCS(s) will be located at least 39 km from the coastline (MHWS) and, whilst potentially visible as very distant elements in limited views, are not anticipated to result in discernible changes to the setting or significance of onshore heritage assets.
1270. The significance of offshore heritage assets is not considered to derive from their setting, but primarily from their historical and research value. As such, the permanent presence of the Offshore Transmission Infrastructure is not anticipated to affect the cultural significance of offshore heritage assets through changes to setting.
1271. Planned and unplanned O&M activities, including inspection, maintenance, repair, and replacement, may also result in temporary vessel activity within proximity to onshore and offshore heritage assets. However, such activities would be temporary, intermittent, and of sufficiently short duration that they are not anticipated to give rise to discernible effects on the setting or significance of heritage assets.
1272. In line with recent OWEKH guidance (2026), potential impacts on the significance of onshore and offshore heritage assets through changes to setting during the O&M phase are therefore proposed to be **scoped out** of further assessment in this EIA.

## 14.6.3 Potential Impacts During Decommissioning

1273. At the operational life, the Bellrock Offshore Transmission Infrastructure will be decommissioned. The final decommissioning approach will be determined through the preparation of a DP, which will be developed in accordance with Section 105 of the Energy Act 2004 and will consider relevant

legislation, guidance, and industry best practice. However, decommissioning activities are anticipated to result in impact pathways that are similar to, or no greater than, those associated with construction activities. Therefore, the impacts **scoped in** for the assessment for the construction phase are also considered applicable to the decommissioning phase.

#### 14.6.4 Bellrock OfTDA Whole Project Assessment

1274. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on marine archaeology and cultural heritage receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
1275. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock Onshore Transmission Development Area for marine archaeology and cultural heritage receptors. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

#### 14.6.5 Potential Cumulative Effects

1276. The Bellrock OfTDA Cumulative Effects Assessment (CEA) will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
1277. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 14.6.4**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on marine archaeology and cultural heritage receptors.
1278. On the whole individual heritage assets would not be subject to cumulative direct impacts from other known plans or projects as they are discrete and there would be no physical overlap of different infrastructure. Cumulative impacts may however occur at the cable crossing of other projects. Although individual assets are discrete, taken together they could have collective heritage significance. For example, if several vessels are known to have been lost in the same event across a large area the individual vessels could be impacted by different projects. As the vessels are known to have been lost in the same event, they would have a collective heritage significance. Therefore, multiple impacts upon similar assets could occur cumulatively.
1279. In addition, there is potential for multiple developments to affect the larger-scale archaeological features such as palaeolandscapes.

1280. There is also the potential for indirect cumulative impacts associated with changes to marine physical processes. These are **scoped in** for further assessment in the Bellrock OfTDA EIA Report for each phase (construction, O&M, and decommissioning).

### 14.6.6 Potential Transboundary Effects

1281. Direct transboundary effects may occur during construction if wrecks or aircraft of non-British nationality are subject to impacts from the infrastructure or associated activities of the Bellrock Offshore Transmission Infrastructure. Such wrecks may fall within the jurisdiction of another country, and may include, for example, foreign warships lost in UK waters. Similarly, where palaeolandscapes within the North Sea cross international boundaries, direct transboundary effects may occur.
1282. There is, therefore, the potential for transboundary effects and these are **scoped in** for further assessment in the Bellrock OfTDA EIA Report for all project phases (construction, O&M, and decommissioning).
1283. Indirect transboundary effects, associated with changes to marine physical processes, where those changes cross an international boundary, are not expected to occur and are therefore scoped out.

### 14.6.7 Summary of Potential Impacts

1284. A summary of potential impacts scoped in and out from further assessment in the Bellrock OfTDA EIA Report is provided in **Table 14.6**.

**Table 14.6: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Marine Archaeology and Cultural Heritage**

| Potential Impact                                                                         | Receptor(s)                                                                            | Scoped In or Scoped Out (✓ or X) |     |                 |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------|-----|-----------------|
|                                                                                          |                                                                                        | Construction                     | O&M | Decommissioning |
| Direct impacts to heritage assets                                                        | Maritime archaeology receptors such as wrecks, debris, submerged prehistoric receptors | ✓                                | ✓   | ✓               |
| Indirect impacts to heritage assets associated with changes to marine physical processes | palaeolandscapes and associated archaeological receptors                               | ✓                                | ✓   | ✓               |

| Potential Impact                         | Receptor(s)                                        | Scoped In or Scoped Out (✓ or X) |     |                 |
|------------------------------------------|----------------------------------------------------|----------------------------------|-----|-----------------|
|                                          |                                                    | Construction                     | O&M | Decommissioning |
| Change to the setting of heritage assets | Onshore heritage receptors                         | X                                | X   | X               |
|                                          | Offshore heritage receptors                        | X                                | X   | X               |
| Bellrock OfTDA Whole Project Assessment  | Marine archaeology and cultural heritage receptors | ✓                                | ✓   | ✓               |
| Cumulative effects                       | Marine archaeology and cultural heritage receptors | ✓                                | ✓   | ✓               |
| Transboundary effects                    | Marine archaeology and cultural heritage receptors | ✓                                | ✓   | ✓               |

## 14.7 Proposed Approach to Impact Assessment

1285. Refer to **Section 14.4.2.1** for details of the site-specific survey data available to inform the marine archaeology and cultural heritage baseline. Subject to survey and project programme requirements, geophysical survey data collected within the Bellrock OfTDA may also be used to further inform the EIA. Should these data not be available to inform the EIA, the assessment will rely on a robust suite of existing datasets and publicly available information sources (see **Section 14.4.2**). As detailed in **Section 14.3**, this approach has previously been discussed within MD-LOT and their advisors. Consultees are invited to provide any comments on this approach within responses to this **Bellrock OfTDA Scoping Report** (see **Section 14.8**).
1286. A desk-based assessment will be undertaken to establish the baseline for both known and potential heritage assets within the defined areas based upon the desk-based sources listed in **Table 14.3**.
1287. The desk-based assessment and assessment of geophysical data (if the geophysical survey data is available at the time of writing the Bellrock OfTDA EIA Report) will be used to identify a strategy for mitigation including the avoidance of identified heritage assets through the application of AEZs where appropriate. This mitigation strategy will be set out in the WSI and PAD which will be submitted alongside the Bellrock OfTDA EIA Report. The WSI and PAD will cover the Bellrock OfTDA (adopted for the EIA Report) to ensure that a commitment to archaeological investigation and mitigation, as relevant to both known and potential heritage assets, is captured across the extents of the Bellrock OfTDA. The WSI and PAD will act as an umbrella document, for all survey, investigation and assessment required for the Bellrock Offshore Transmission Infrastructure, supported by activity-specific method statements.

1288. The methodology of the assessment will also take account of guidance listed in **Table 14.1** as well as a proportional approach to EIA as outlined in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and guidance developed by OWEKH's Marine Historic Environment Technical Topic Group relating to the development of more effective, proportionate, and consistent EIAs (OWEKH, 2026).
1289. Consultation with the relevant heritage stakeholders will be undertaken during the EIA process to identify and agree the primary methodologies, present initial findings and ensure potential historic environment issues and risks are identified and considered in the Bellrock OFTDA EIA Report.

## 14.8 Scoping Questions to Consultees

1290. The following questions are posed to consultees to help them frame and focus their response to the marine archaeology and cultural heritage scoping exercise, which will in turn inform the EIA
- Do you agree that all the relevant data sources have been identified in **Section 14.4.2**?
  - Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 14.2**?
  - Do you agree with the proposed study area as presented in **Section 14.4.1**?
  - Do you agree that the data sources will be sufficient to inform the Bellrock OFTDA EIA baseline for marine archaeology and cultural heritage?
  - Do you agree that all the marine archaeology and cultural heritage impacts resulting from the Bellrock Offshore Transmission Infrastructure have been identified in **Section 14.5**?
  - Do you agree with the marine archaeology and cultural heritage impacts that have been scoped in for/out from further consideration within the Bellrock OFTDA EIA (**Section 14.6**)?
  - Do you agree with the use of desktop data only to inform the EIA (should the data from the geophysical survey not be available at the time of writing)?
  - Do you agree with the proposed approach to assessment in the Bellrock OFTDA EIA?
  - Do you have any other matters or information sources that you wish to present?



## 14.9 References

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# 15 Seascape, Landscape and Visual Impact

## 15.1 Introduction

1291. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on seascape, landscape, and visual receptors.
1292. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1293. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1294. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1295. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1296. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on seascape, landscape, and visual receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Land Use Consultants Limited, Chartered Members of the Landscape Institute.
1297. Scoping for the Seascape, Landscape and Visual Impact Assessment (SLVIA) has been prepared in accordance with the principles set out in the Guidelines for Landscape and Visual Impact Assessment, Third Edition (Landscape Institute and Institute of Environmental Management and Assessment, 2013).
1298. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 11: Shipping and Navigation;**
  - **Chapter 13: Marine Infrastructure and Other Users;**
  - **Chapter 14: Marine Archaeology and Cultural Heritage;** and
  - **Chapter 16: Socioeconomics and Tourism.**
1299. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 15.2 Legislation, Policy and Guidance

1300. **Table 15.1** sets out the policy and guidance documents which have been considered in the preparation of this Chapter, and which will inform the SLVIA Chapter in the Bellrock OfTDA EIA Report where appropriate. The overarching policy and legislation relevant to the Bellrock Offshore Infrastructure is described in **Chapter 2: Legislative and Policy Context**.

**Table 15.1: Summary of Relevant Legislation, Policy and Guidance for SLVIA**

| Relevant Legislation, Policy and Guidance                                                                                                                                                                | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Policy</b>                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| National Planning Framework 4, Scottish Government (2023)                                                                                                                                                | <p>Sets out policies in relation to proposed “<i>renewable energy development onshore and offshore</i>”, including effects on landscape and visual receptors.</p> <p>The key references are:</p> <ul style="list-style-type: none"> <li>▪ Policy 4: Natural places, which sets out protections to be applied to, among other things, national and local landscape designations; and</li> <li>▪ Policy 11: Energy, which identifies criteria against which energy infrastructure consents will be considered, including its effect on landscape character and visual amenity.</li> </ul> |
| Scotland's National Marine Plan (SNMP), Scottish Government (2015)                                                                                                                                       | Sets out policies that apply to the marine environment, including policies relating to effects on seascape, landscape and visual receptors.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| SNMP 2 Planning Position Statement, Scottish Government (2024)                                                                                                                                           | A draft SNMP 2 was taken to public consultation between November 2024 -February 2025. The SNMP 2 will update the current SNMP; it is expected to be adopted in 2027 and will be considered if published prior to submission of the Bellrock OFTDA Marine Licence application.                                                                                                                                                                                                                                                                                                           |
| Aberdeenshire Local Development Plan (2024)                                                                                                                                                              | The current development plan for the onshore section of the SLVIA study area, including policies relating to local landscape designations and landscape character. The Aberdeenshire Local Development Plan is relevant to consideration of onshore receptors.                                                                                                                                                                                                                                                                                                                          |
| <b>Guidance</b>                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Guidelines for Landscape and Visual Impact Assessment. Third Edition, Landscape Institute and Institute of Environmental Management and Assessment. (2013)                                               | Industry standard guidance on approach to undertaking assessment of effects of development on landscape and visual receptors.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Landscape Institute Visual Representation of Development Proposals. Technical Guidance Note 06/19 (Landscape Institute, 2019)                                                                            | Provides guidance on preparing and presenting visualisations, such as photomontages, which are used to support SLVIA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Offshore Renewables – guidance on assessing the impact on coastal landscape and seascape ( <i>Scottish Natural Heritage was replaced by NatureScot in 2020</i> ), Scottish Natural Heritage (SNH) (2012) | Provides guidance on scoping for marine renewables projects, including offshore wind farms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Visual Representation of Wind Farms Guidance, SNH (2017)                                                                                                                                                 | Provides guidance on producing visualisations for onshore and offshore wind farms to support Landscape Visual Impact Assessment and planning decision making, including relevant study areas for tall structures.                                                                                                                                                                                                                                                                                                                                                                       |

## 15.3 Consultation

1301. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to SLVIA for the Bellrock OfTDA EIA. Consultation undertaken to date for the Bellrock OfTDA relevant to SLVIA is provided in **Table 15.2**.

**Table 15.2: Consultation Relevant to SLVIA**

| Consultee  | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | How Comment is Addressed                                                                                               |
|------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| NatureScot | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | NatureScot have briefly reviewed the slides and questions in relation to SLVIA, noting that the proposed surface-piercing OfRCS(s) are to be located at least 25 km offshore. We do not consider that the proposal would raise issues of National Interest in relation to its landscape, visual or cumulative effects. This is not to say that the proposal would not result in significant landscape or visual effects, rather that NatureScot does not judge these effects to meet our threshold in respect of our national remit for landscapes and requirement for our advice. | Noted. For reference the minimum distance of the OfRCS(s) from the coastline (MHWS) has increased from 25 km to 39 km. |

1302. It is proposed to scope out SLVIA from further assessment, as detailed further in this Chapter (see **Table 15.5**). Should this be confirmed in the formal Scoping Opinion, then no further engagement is proposed for this topic.

## 15.4 Existing Environment

### 15.4.1 Study Area

1303. Seascape, landscape and visual receptors may be affected by surface-piercing infrastructure or activities, since underwater infrastructure or activities will not be visible. Elements that will be surface-piercing during construction and O&M within the Bellrock OfTDA include:
- Up to six OfSS(s) with maximum topside dimensions of 135 x 100 x 90 m (height above Lowest Astronomical Tide (LAT)), located at least 120 km from the coastline (MHWS);
  - Up to two OfRCS(s) with a maximum topside dimensions of 100 x 90 x 70 m high (above LAT), located at least 39 km from the coastline (MHWS); and
  - Temporary surface-piercing site preparation<sup>52</sup> and construction works across the Bellrock OfTDA, including vessel movements and cable-laying activities seaward of MHWS.

<sup>52</sup> For the purposes of EIA, site preparation will be assessed under construction works to provide a comprehensive assessment

1304. The closest permanent surface-piercing infrastructure will be the OfRCS(s). During the OfTDA site selection process, the Applicant committed to locate the OfRCS(s) no closer than 39 km from the coastline (MHWS) to minimise visibility from shore (see **Section 3.6** in **Chapter 3: Project Description**). The SNH (2017) guidance on *Visual Representation of Wind Farms* recommends Zone of Theoretical Visibility (ZTV) distances for different heights of wind turbine generators, based on how visible they will be. For a maximum height of 70 m (the height of each OfRCS above LAT), the guidance recommends a ZTV distance of 20 km. Since the OfRCS(s) will be at least 39 km from the coastline (MHWS), this suggests that any impacts on onshore visual receptors will be minimal. In addition, it should be noted that the SNH guidance relates specifically to wind turbines generators, which are moving structures, likely to attract attention at greater distances than static structures such as the OfRCS(s). On this basis, a ZTV is not considered to be required for the purposes of the **Bellrock OfTDA Scoping Report**.
1305. Only temporary site preparation and construction works in the near-shore area are likely to be clearly visible to receptors on land. These will all take place at or near sea-level. The SLVIA study area is therefore defined as the Bellrock OfTDA Scoping Boundary and extending 1 km landward to include sensitive onshore landscape and visual receptors. The onshore area of the OfTDA Scoping Boundary is located wholly within Aberdeenshire Council's administrative boundary.
1306. The SLVIA study area is shown in **Figure 15.1 (Appendix A (Volume 1))**.

## 15.4.2 Data and Information Sources

1307. **Table 15.3:** sets out the information and data sources which have been considered in the preparation of this Chapter, and will be considered within the Bellrock OfTDA EIA Report where relevant matters are scoped in.

**Table 15.3: Summary of Key Data and Information Sources for SLVIA**

| Dataset                                                                          | Year(s)    | Description                                                                                                                                      |
|----------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| National Marine Plan Interactive (Marine Scotland, 2023)                         | Up to 2023 | Compilation of various datasets relevant to the understanding of baseline seascape character and potential visual receptors, in Scottish waters. |
| Coastal Character Types (Scottish Natural Heritage, 2010)                        | SNH, 2010  | List of high-level classification of coastal character at a national scale.                                                                      |
| Scottish Landscape Character Types Map and Descriptions (NatureScot, 2019a)      | 2019       | Digital map-based classification of Scotland's landscape character.                                                                              |
| Aberdeenshire Special Landscape Areas Appendix 13 (Aberdeenshire Council, 2017). | 2017       | Map of Aberdeenshire's Special Landscape Areas.                                                                                                  |
| Landscape Consultant Site Visit – October 2025                                   | 2025       | Baseline field survey of coastal landscape and seascape character, and key visual receptors at landfall, including views and visibility seaward. |



### 15.4.3 Offshore Seascape Baseline

1308. The majority of the SLVIA study area comprises the open sea associated with the surrounding North Sea, east of Stonehaven, southeast of Aberdeen. There is no published characterisation of offshore seascape character in Scotland. As such, there are no key characteristics for the offshore part of the SLVIA study area.
1309. There is shipping activity within the SLVIA study area, mainly associated with oil and gas activities, commercial fishing and cargo. There are two ferry routes within 10 km to the north of the SLVIA study area, the Aberdeen – Lerwick ferry, and the Aberdeen – Kirkwall ferry. Dinghy sailing and other recreational activities are restricted to the coastal waters of Aberdeenshire.
1310. The operational Kincardine Offshore Wind Farm (six turbines at 191 m blade tip above LAT) is located within the SLVIA study area (approximately 15 km from shore). Outside of the SLVIA study area, the operational Aberdeen Offshore Wind Farm/ European Offshore Wind Deployment Centre (11 turbines at 191 m blade tip above LAT) is located 10 km to the north/northwest of the study area, around 3 km from shore.
1311. The proposed Bowdun Offshore Wind Farm (67 turbines at 369 m blade tip above LAT) would be located in the centre of the SLVIA study area, 38 km from shore. There are other proposed offshore wind farms outside the SLVIA study area, but these are at least 65 km from the coastline.

### 15.4.4 Onshore Landscape Baseline

#### 15.4.4.1 Local Landscape Areas

1312. The southeast Aberdeenshire Coast Special Landscape Area (SLA) is located along the coast, in the west of the SLVIA study area. It includes the whole coastal line and extends to meet the approximate Mean Low Water Springs. The SLA is designated by Aberdeenshire Council, and the reasons for its designation include the rugged and intricate coastal scenery; the setting of Stonehaven and other settlements; views from coastal routes; and Dunnottar Castle, a Scheduled Ancient Monument.

#### 15.4.4.2 National Coastal Character Types

1313. The Rocky Coastline/Open Sea Views National Coastal Character Type (Type 2) extends across the coastline in the west of the SLVIA study area. This National Coastal Character Type is characterised by cliffs rising to 30 m, with promontories that support cliff-top forts and castles. There is limited tree cover, and views across the open seascape often include shipping.

#### 15.4.4.3 Landscape Character Types

1314. The following Landscape Character Types (LCT) (NatureScot, 2019b, 2019c) are located in the landward part of the SLVIA study area: the Fragmented Rocky Coast Aberdeenshire LCT (11), and a very small extent of the Coastal Farmed Ridges and Hills Aberdeenshire LCT (24). LCT 11 comprises a dramatic rocky coastline, with limited coastal settlement and a wild character. LCT 24 is a large scale and open landscape of large fields, sparse woodland, with limited settlement and a strong coastal influence.



## 15.4.5 Visual Amenity Baseline

### 15.4.5.1 Offshore Visual Receptors

1315. Offshore visual receptors within the SLVIA study area include people passing through the area on vessels, most of whom will be working in the fishing, transport, and oil and gas industries. Automatic identification system ship traffic data has been used to identify potential receptors crossing the SLVIA study area (Marine Scotland, 2023). Shipping activity includes cargo vessels, many of which travel out from Aberdeen, heading east towards offshore infrastructure. Movements of passenger vessels and pleasure craft are limited within the SLVIA study area, though the data indicates some passenger vessels moving between northeast Scotland and northern Germany (see **Chapter 11: Shipping and Navigation** for further details on vessels).
1316. The nearest commercial passenger ferry routes are approximately 6.4 km to the north of the SLVIA study area, routing from Aberdeen – Lerwick and Aberdeen – Kirkwall. There is no indication that any particular value is placed on views of the open sea that are available to passengers and crew on these vessels. In more inshore locations, people involved in marine recreation are likely to value views of the rugged coast.

### 15.4.5.2 Onshore Visual Receptors

1317. Onshore visual receptors within the SLVIA study area include residential receptors on the coast with seaward views (including views experienced when travelling to and from properties); recreational users of local footpaths and Core Paths and the National Cycle Network; visitors to golf clubs; shoreline, beach, and water-based receptors on beaches and bays; and people travelling on railways and roads.
1318. Given the nature of the coastline, which is designated for its scenery, views along the coast are likely to be highly valued.

## 15.5 Potential Impacts

1319. This section considers the impacts of the permanent surface-piercing infrastructure within the Bellrock OfTDA, comprising the OfSS(s) and OfRCS(s), and the impacts of surface-piercing site preparation, construction activity, O&M, and decommissioning within the SLVIA study area.
1320. Sensitivity, for the purposes of SLVIA, is judged with consideration of the susceptibility of the receptor to change, and the value placed on the seascape, landscape or visual resource.
1321. Changes associated with the Bellrock OfTDA will arise from the presence of vessels, cranes and associated lighting (including night lighting), towing of topsides of the OfSS(s) and OfRCS(s) during the construction phase, and the presence of the OfSS(s) and OfRCS(s) and maintenance vessels during O&M. The changes associated with construction and decommissioning works will be temporary, while change associated with the presence of OfSS(s) and OfRCS(s) in the seascape during operation will be longer term but reversible.

### 15.5.1 Embedded Mitigation Measures

1322. Embedded mitigation has been identified, as presented in **Table 15.4** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects.

**Table 15.4: Embedded Mitigation Measures Relevant to SLVIA**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                         | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                  | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                          |                 |
| ✓                          | X   | X               | Surface-piercing infrastructure (i.e. OfSS(s) and OfRCS(s)) will be located at least 39 km from the coastline (MHWS), which will limit visibility from the locations of sensitive receptors along the coast. Significant effects on landscape and visual receptors from the presence of the OfSS(s) and OfRCS(s) are therefore considered unlikely. | Locating the OfSS(s) and OfRCS(s) at least 39 km from the coastline (MHWS) will reduce their prominence within coastal views and limit visibility from sensitive receptors along the coastline. This will minimise the magnitude of visual change and reduce the potential for seascape, landscape and visual effects associated with the presence of the Bellrock Offshore Transmission Infrastructure. | Primary         |

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## 15.6 Scoping of Potential Impacts

### 15.6.1 Offshore Seascape Receptors

1323. The baseline offshore seascape is not highly susceptible to the type of changes that would arise from introduction of the Bellrock Offshore Transmission Infrastructure. There are no designations within the offshore seascape environment that suggests the area is a valued seascape. Both susceptibility and value, and therefore sensitivity, are likely to be low.
1324. During construction, given the temporary nature of anticipated site preparation and construction activities, effects on offshore seascape receptors are expected to be limited in scale and localised in extent. During O&M, due to the relatively small scale of the OfSS(s) and OfRCS(s), effects on offshore seascape receptors are expected to be limited in scale and localised in extent. During decommissioning, effects are anticipated to be temporary and comparable in nature to those associated with construction. As a result, effects on offshore seascape receptors are expected to be limited in scale and localised in extent.
1325. Significant effects during construction, O&M and decommissioning on offshore seascape receptors are unlikely to arise due to their low sensitivity, and therefore these effects will be **scoped out** of the Bellrock OfTDA EIA Report.

### 15.6.2 Onshore Landscape Receptors

1326. The coastal and landscape character within the SLVIA study area is considered to be highly susceptible to change, and has a high value recognised in its designation as an SLA. Sensitivity is likely to be high.
1327. There will be no physical changes to onshore landscape receptors. Any changes will result from offshore infrastructure and activities influencing coastal and landscape character.
1328. During construction, changes associated with site preparation works, from the presence of vessels, cranes and associated lighting in the near shore area will be temporary and transient, and significant effects are not likely. During O&M, the OfRCS(s) will be located at distances of at least 39 km from the coastline (MHWS). These structures will not be prominent at this distance, and significant effects on coastal or landscape character considered unlikely. During decommissioning, effects are anticipated to be temporary and comparable in nature to those associated with construction. Significant effects are therefore not likely.
1329. Effects on onshore landscape receptors during construction, O&M and decommissioning effects will therefore be **scoped out** of the Bellrock OfTDA EIA Report.

### 15.6.3 Offshore Visual Receptors

1330. The majority of offshore visual receptors in the offshore part of the SLVIA study area will either be working within the marine environment or will be workers travelling through the SLVIA study area on vessels. These receptors are unlikely to be susceptible to changes in their outlook as they move around the sea. Passengers on passenger vessels are more susceptible to changes in the view.

Both susceptibility and value, and therefore sensitivity, are likely to be low, although the sensitivity of people on passenger vessels may be higher.

1331. People engaged in marine recreation closer to the coast are likely to be more susceptible to change, and will value views of the rugged coast. Sensitivity of these receptors is likely to be high.
1332. During construction, the scale of change in views for passengers on vessels is unlikely to be high due to the transient nature of passing views of temporary construction works. Significant effects are unlikely to arise due to the generally low sensitivity of receptors, and the small numbers and transient nature of potentially higher sensitivity receptors. During O&M, the scale of change in views for passengers on vessels is unlikely to be high due to the transient nature of passing views of permanent infrastructure (including any lighting). Significant effects are unlikely to arise due to the generally low sensitivity of receptors, and the small numbers and transient nature of potentially higher sensitivity receptors. During decommissioning, effects are anticipated to be temporary and comparable in nature to those associated with construction. Significant effects are therefore not likely.
1333. Effects during construction, O&M and decommissioning on offshore visual receptors will therefore be **scoped out** of the Bellrock OfTDA EIA Report.
1334. For higher-sensitivity recreational users of the inshore area, construction works around the landfall will be temporary in nature, effects are likely to be short term and localised, and therefore significant effects are not likely. During O&M, the distant OfRCS(s) are unlikely to be prominent, effects are likely to be localised, and significant effects are not likely. During decommissioning, effects are anticipated to be temporary and comparable in nature to those associated with construction. Significant effects are therefore not likely.
1335. Effects during construction, O&M and decommissioning on the inshore receptors will therefore be **scoped out** of the Bellrock OfTDA EIA Report.

#### 15.6.4 Onshore Visual Receptors

1336. Onshore receptors are of higher sensitivity to the changes proposed. They include recreational users and residents who will have higher susceptibility to change, and the scenic nature of the coast indicates higher value.
1337. During construction, effects may arise due to the presence of vessels, cranes and associated lighting in the near shore area. These effects will be temporary and localised. During O&M, views towards the Bellrock OfTDA are unlikely due to the distance of the OfRCS(s), which will not be prominent at 39 km from the coastline (MHWS) (i.e. further offshore than the existing Kincardine Offshore Wind Farm). Any navigation lighting on the OfRCS(s) is unlikely to be clearly visible from shore, and would be seen in context of existing lights (e.g. Kincardine Offshore Wind Farm and passing vessels). During decommissioning, effects are anticipated to be temporary and comparable in nature to those associated with construction.
1338. Effects during construction, O&M and decommissioning on onshore visual receptors will be **scoped out** of the Bellrock OfTDA EIA Report.

### 15.6.5 Bellrock OfTDA Whole Project Assessment

1339. For the reasons detailed in **Section 15.5.1** to **Section 15.6.4**, primarily the low sensitivity of receptors and the distance of any permanent Bellrock Offshore Transmission Infrastructure, significant effects on seascape, landscape and visual receptors within or beyond the SLVIA study area are not anticipated. As all potential impacts relating to SLVIA from the Offshore Transmission Infrastructure are scoped out of this **Bellrock OfTDA Scoping Report**, the Whole Project Assessment is also **scoped out** of the Bellrock OfTDA EIA Report.
1340. Potential impacts associated with the Bellrock Onshore Transmission Infrastructure will be fully considered within the Bellrock OnTDA Scoping Report.

### 15.6.6 Potential Cumulative Effects

1341. The Bellrock OfTDA Cumulative Effects Assessment will be undertaken in accordance with the methodology set out in **Section 4.7** of **Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the Cumulative Effects Assessment, is provided in **Plate 4.3**.
1342. Cumulative seascape, landscape and visual effects may arise from the presence of multiple developments or activities affecting the same receptors. Several other planned offshore wind farms are located close to the SLVIA study area. It is likely that the Bellrock Offshore Transmission Infrastructure and associated construction activities would be visible to receptors in the SLVIA study area in combination with these other existing or proposed offshore wind farms, should they be constructed.
1343. However, for the reasons detailed in **Section 15.5.1** to **Section 15.6.4**, primarily the low sensitivity of receptors and the distance offshore of any permanent Bellrock Offshore Transmission Infrastructure, significant effects on seascape, landscape and visual receptors within or beyond the SLVIA study area are not anticipated. As all potential effects relating to SLVIA from the Bellrock Offshore Transmission Infrastructure are scoped out of this **Bellrock OfTDA Scoping Report**, potential cumulative effects on SLVIA receptors are also **scoped out** of the Bellrock OfTDA EIA Report.
1344. Potential effects associated with the Bellrock Onshore Transmission Infrastructure will be fully considered within the Bellrock OnTDA Scoping Report.

### 15.6.7 Potential Transboundary Effects

1345. The Bellrock OfTDA is located approximately 125 km from the nearest boundary of a European Economic Area Member State (i.e. beyond the limit of United Kingdom waters). Given this distance, there is no potential for transboundary effects in relation to seascape, landscape and visual receptors from impacts caused by infrastructure and activities associated with Bellrock OfTDA during construction, O&M, and decommissioning.

### 15.6.8 Summary of Potential Impacts

1346. A summary of potential impacts scoped in and scoped out from further assessment in the Bellrock OfTDA EIA Report is provided in **Table 15.5**.



**Table 15.5: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for SLVIA**

| Potential Impact                                                                                    | Receptors                    | Scoped In or Scoped Out? (✓ or X) |     |                 |
|-----------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------|-----|-----------------|
|                                                                                                     |                              | Construction                      | O&M | Decommissioning |
| Presence of offshore construction activity, including vessel movements and lighting in the seascape | Offshore seascape receptors  | X                                 | X   | X               |
|                                                                                                     | Onshore landscape receptors  | X                                 | X   | X               |
|                                                                                                     | Offshore visual receptors    | X                                 | X   | X               |
|                                                                                                     | Onshore visual receptors     | X                                 | X   | X               |
| Presence of the OfSS(s) and OfRCS(s) in the seascape                                                | Offshore seascape receptors  | X                                 | X   | X               |
|                                                                                                     | Onshore landscape receptors  | X                                 | X   | X               |
|                                                                                                     | Offshore landscape receptors | X                                 | X   | X               |
|                                                                                                     | Onshore visual receptors     | X                                 | X   | X               |
| Bellrock OfTDA Whole Project Assessment                                                             | All receptors                | X                                 | X   | X               |
| Cumulative effects                                                                                  | All receptors                | X                                 | X   | X               |
| Transboundary effects                                                                               | All receptors                | X                                 | X   | X               |

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## 15.7 Proposed Approach to Impact Assessment

1347. It is proposed that this topic will be **scoped out** entirely from the Bellrock OfTDA EIA Report as there are no likely significant effects on seascape, landscape or visual receptors.

## 15.8 Scoping Questions to Consultees

1348. The following questions are posed to consultees to help them frame and focus their response to the SLVIA scoping exercise, which will in turn inform the EIA:

- Do you agree that all the relevant data sources have been identified in **Section 15.4.2**?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 15.2**?
- Do you agree with the SLVIA study area as presented in **Section 15.4.1**?
- Do you agree that receptors outside the SLVIA study area do not need to be considered?
- Do you agree that offshore seascape character is of low sensitivity to the type of change proposed, and that offshore seascape receptors can be scoped out as no likely significant effects would arise?
- Do you agree that although onshore coastal and landscape character is of higher sensitivity, the changes to character will be minimal, and that onshore coastal and landscape receptors can be scoped out as no likely significant effects would arise?
- Do you agree that offshore visual receptors are of generally low sensitivity to the type of change proposed, and/or would be transient receptors passing through the SLVIA study area, and that offshore visual receptors can be scoped out as no likely significant effects would arise?
- Do you agree that potential effects on onshore landscape and visual receptors can be scoped out, as permanent above-sea infrastructure would be over 39 km from the coastline (MHWS), and construction works would be temporary and low in height, and therefore no likely significant effects would arise?
- Do you agree that cumulative effects on seascape and visual receptors can be scoped out of the Bellrock OfTDA EIA as no likely significant effects would arise?
- Do you have any other matters or information sources that you wish to present?

## 15.9 References

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SNH (2017). Visual Representation of Wind Farms Guidance, Version 2.2. Available at:

<https://www.nature.scot/sites/default/files/2019-09/Guidance%20-%20Visual%20representation%20of%20wind%20farms%20-%20Feb%202017.pdf>

# 16 Socioeconomics and Tourism

## 16.1 Introduction

1349. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the scope of potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on socioeconomics and tourism.
1350. The Bellrock OfTDA (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned.
1351. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the Bellrock Wind Farm Development Area (WFDA).
1352. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s))**: up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s)**: up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables**: between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s))**: up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection**: for the OfSS(s) and the OfRCS(s);
  - **Landfall**: between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.
1353. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in

April 2026 (Bellrock Offshore Wind Farm, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and resulting effects of the Bellrock Wind Farm Infrastructure on the receiving environment.

1354. The Bellrock OfTDA EIA Report will include a socioeconomic assessment of the potential effects associated with the Bellrock Offshore Transmission Infrastructure. In accordance with the Bellrock OfTDA Whole Project Assessment approach set out in **Section 16.6.2**, the assessment will also consider relevant interactions with the other Development Areas of the Bellrock Project, where these have the potential to influence the magnitude of impacts or the significance of effects associated with the Bellrock Offshore Transmission Infrastructure. The Cumulative Effects Assessment (CEA) will then consider the impacts identified through the Bellrock OfTDA Whole Project Assessment, alongside impacts from other reasonably foreseeable projects and plans with which there is conceptual, spatial and/or temporal overlap to determine the potential for cumulative effects.
1355. A separate Bellrock Project Economic Impact Report was prepared for the **Bellrock WFDA EIA Report** and submitted with the Bellrock WFDA Section 36 Consent and Marine Licence Applications in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The Economic Impact Report considers the economic, employment and supply chain benefits associated with the Bellrock Project as a whole, covering the WFDA, OfTDA, and OnTDA. The Economic Impact Report will be reviewed and updated, if new information becomes available, and will be submitted with the Bellrock OfTDA EIA Report.
1356. As detailed in **Section 16.6**, as the Bellrock Offshore Transmission Infrastructure lacks a plausible impact pathway to tourism receptors, a Whole Project Assessment for tourism has been **scoped out** of this **Bellrock OfTDA Scoping Report** and will be considered within the subsequent Bellrock OnTDA Scoping Report. Consequently, the Cumulative Effects Assessment (CEA) within this Chapter will focus only on cumulative socioeconomic interactions alongside other relevant external projects and plans.
1357. This Chapter provides an overview of the existing environment and sets out the methodology and approach to assessing effects on socioeconomics and tourism receptors in the Bellrock OfTDA EIA Report. This Chapter has been prepared by BiGGAR Economics Limited.
1358. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 10: Commercial Fisheries;**
  - **Chapter 11: Shipping and Navigation;**
  - **Chapter 13: Marine Infrastructure and Other Users;**
  - **Chapter 14: Marine Archaeology and Cultural Heritage;** and
  - **Chapter 15: Seascape, Landscape and Visual Impact.**
1359. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 16.2 Legislation, Policy and Guidance

1360. There is no legislation directly relevant to socioeconomics and tourism assessments. **Table 16.1** describes the policy and guidance which have been considered in the preparation of this Chapter. The overarching legislation and policy relevant to the Bellrock OFTDA is described in **Chapter 2: Legislative and Policy Context**.

**Table 16.1: Summary of Relevant Policy and Guidance for Socioeconomics and Tourism**

| Relevant Policy and Guidance                                                                                     | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Scottish Government Policy</b>                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Scotland's National Marine Plan (SNMP) (Scottish Government, 2015)                                               | Overarching guidance for planning and consenting. it sets out a series of objectives, including around maximising economic benefits through a competitive local supply chain in Scotland, relevant to the Offshore Transmission Infrastructure.                                                                                                                                                                                                                |
| SNMP 2 Planning Position Statement (Scottish Government, 2024d)                                                  | While SNMP 2 is not yet adopted, this statement signals the future direction of marine planning policy in Scotland. The assessment will acknowledge these emerging priorities, particularly regarding the co-existence of marine users and the maximisation of sustainable economic benefits.                                                                                                                                                                  |
| Update to the 2020 Offshore Wind Policy Statement: Scotland's Offshore Wind Ambition (Scottish Government, 2026) | <p>In January 2026, the Scottish Government significantly increased its offshore wind ambition to 40 gigawatts by 2040, emphasising energy security and a £100 billion economic opportunity driven largely by floating wind technology.</p> <p>The update reaffirms the Government's commitment to supporting the delivery of the existing project pipeline, which includes the Bellrock Project (listed as a project holding an Option to Lease awarded).</p> |
| Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020b)                                       | <p>The Sectoral Marine Plan provides the spatial planning framework for offshore wind in Scottish waters. It is a key planning document for identifying areas of opportunity and managing potential conflicts with other marine users, such as commercial fisheries.</p> <p>It should be noted that this plan is currently under review. (An updated Sectoral Marine Plan is expected to be published in autumn 2026 – see below).</p>                         |
| Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025a)                         | This plan will (on adoption) confirm the strategic designation of the Bellrock site as a commercial offshore wind development area (identified as Option Area E1B). It provides the context for the 'Need for the Project' and establishes the national baseline for assessing cumulative socioeconomic effects.                                                                                                                                               |
| National Planning Framework 4 (Scottish Government, 2023)                                                        | Policy 11 (Energy) encourages developments that maximise net economic impact. Policy 25 (Community Wealth Building) supports local economic priorities.                                                                                                                                                                                                                                                                                                        |



| Relevant Policy and Guidance                                                                                                | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Green Industrial Strategy (Scottish Government, 2024a)                                                                  | Highlights offshore wind as a primary opportunity for attracting supply chain investment relevant to the Offshore Transmission Infrastructure.                                                                                                                                                                                                           |
| Offshore Wind Focus (Scottish Government, 2024b)                                                                            | Outlines public sector investment opportunities to enable economic benefits from the offshore wind opportunity to be realised in Scotland.                                                                                                                                                                                                               |
| Scotland's National Strategy for Economic Transformation – Delivering Economic Prosperity (Scottish Government, 2022a)      | Sets a vision for a wellbeing economy; informs how Offshore Transmission Infrastructure supports economic activity.                                                                                                                                                                                                                                      |
| <b>United Kingdom (UK) Level Policy</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                          |
| The Offshore Wind Industrial Growth Plan (Renewable UK, Offshore Wind Industry Council (OWIC), Crown Estate Scotland, 2024) | This plan sets out strategic opportunities for the UK supply chain, informing the assessment of economic impacts from the Offshore Transmission Infrastructure and cumulative impacts from the wider project pipeline.                                                                                                                                   |
| Clean Power 2030 Action Plan: A new era of clean electricity (UK Government, 2024a)                                         | The expansion in offshore wind capacity to 2030 will contribute to supply chain development, providing potential benefits for the construction and O&M of the Offshore Transmission Infrastructure.                                                                                                                                                      |
| The Offshore Wind Sector Deal (UK Government, 2020)                                                                         | The Offshore Wind Sector Deal is linked to the development of a supply chain for offshore wind projects, which informs the socioeconomic assessment of the Offshore Transmission Infrastructure.                                                                                                                                                         |
| <b>Local/Regional Policy</b>                                                                                                |                                                                                                                                                                                                                                                                                                                                                          |
| Aberdeenshire Local Development Plan 2023 (Aberdeenshire Council, 2023)                                                     | As the primary spatial planning document for the region, the Local Development Plan sets out policies for safeguarding local assets, promoting high-quality places, and supporting economic diversification. It informs the assessment of how the Offshore Transmission Infrastructure interacts with local development priorities.                      |
| Regional Economic Strategy (Aberdeen City Council, Aberdeenshire Council, and Opportunity North East, 2024)                 | This strategy provides a long-term vision to transform the northeast economy, focusing on a just transition to net zero, retaining skilled workforces, and harnessing offshore energy expertise. It is relevant for framing the economic baseline and assessing the whole-project economic contribution of the Bellrock Project to the regional economy. |
| Community Wealth Building Strategy (Aberdeenshire Council, 2026a)                                                           | This strategy sets out the local authority's priorities for retaining economic wealth within the region through fair employment, local supply chain development, and community empowerment. It is relevant for assessing how the Offshore Transmission Infrastructure can align with and support local economic priorities.                              |
| Energy Developments Community Wealth Building Charter (Aberdeenshire Council, 2026b)                                        | This Charter outlines the specific expectations for energy developers to contribute to the local economy and community wealth. It emphasises the importance of local supply chain engagement, skills development, and shared benefits, directly informing the socioeconomic assessment and the Applicant's approach to local economic benefits.          |

| Relevant Policy and Guidance                                                                                                                                    | Relevance to the Assessment                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Guidance</b>                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                         |
| Defining 'Local Areas' for Assessing the Economic Impact of Offshore Renewables and Other Marine Developments: Guidance Principles (Scottish Government, 2022b) | This Scottish Government guidance provides a set of principles for defining appropriate geographic "local areas" to ensure a consistent and proportionate approach when assessing the economic impacts of marine developments. This is relevant for defining local study areas used in the SEIA for the Bellrock OfTDA. |
| General Advice for Offshore SEIA, Marine Directorate Marine Analytical Unit (MD-MAU) (MD-MAU, 2023)                                                             | This document offers technical advice from the MD-MAU on best practices for conducting SEIAs for offshore developments, covering topics like data sources, methodologies, and presentation of results.                                                                                                                  |
| The Green Book: UK Government Guidance on Appraisal (His/her Majesty's Treasury, 2026)                                                                          | This guidance is relevant as it provides the best practice methodology for economic appraisal, including the standard discount rates that should be used when calculating the Net Present Value of long-term economic impacts.                                                                                          |

## 16.3 Consultation

1361. Consultation regarding the socioeconomics and tourism assessment for the Bellrock Project has been an ongoing process following initial engagement commenced during the scoping phase for the Bellrock WFDA in 2024.
1362. Following the integration of the Bellrock Onshore Transmission Infrastructure into the project design in April 2025 (see **Section 1.2** in **Chapter 1: Introduction** for details), the whole-project methodology was further refined and consulted upon in July 2025 (**Table 16.2**).
1363. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), MD Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit (MD-MAU), NatureScot and Aberdeenshire Council in May 2026 to define the specific study areas and receptors for the transmission assets. The responses received throughout this continuous consultation history, which have shaped the current 'whole-project' assessment approach, are summarised in **Table 16.2**.
1364. The Applicant will continue to engage with stakeholders during the pre-application phase, following the publication of the Bellrock OfTDA Scoping Opinion and supporting consultation responses.

**Table 16.2: Summary of Consultation Relevant to Socioeconomics and Tourism**

| Consultee             | Date/Document                                                                                                                                                                                                                                               | Comment                                                                                                                                                                                                                                                                                                                     | How Comment is Addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MD-LOT                | 2024<br>Bellrock WFDA Scoping Opinion (MD-LOT, 2024)                                                                                                                                                                                                        | Advised that a full SEIA must be included, transparent in its methodological choices, and should include a short-list of potential epicentres of impact.                                                                                                                                                                    | The core SEIA methodology established for the Bellrock WFDA will be applied to the Bellrock OfTDA (see <b>Section 16.7</b> of this <b>Bellrock OfTDA Scoping Report</b> ).                                                                                                                                                                                                                                                                                                                 |
| MD-LOT                | July 2025<br><br>Letter: Consultation on whole project methodology for the Bellrock Offshore Wind Farm - Wind Farm Development Area EIA - Methodology for the Socioeconomics, Tourism and Recreation Assessment (Bellrock Offshore Wind Farm Limited, 2025) | MD-MAU provided no response advising that it does not provide advice post-scoping.                                                                                                                                                                                                                                          | Noted. The proposed methodology is outlined in <b>Section 16.7</b> of this <b>Bellrock OfTDA Scoping Report</b> .                                                                                                                                                                                                                                                                                                                                                                          |
| Aberdeenshire Council | July 2025<br><br>Letter: Consultation on whole project methodology for the Bellrock Offshore Wind Farm - Wind Farm Development Area EIA - Methodology for the Socioeconomics, Tourism and Recreation Assessment (Bellrock Offshore Wind Farm Limited, 2025) | Aberdeenshire Council confirmed agreement with the proposed methodology.                                                                                                                                                                                                                                                    | The proposed methodology is outlined in <b>Section 16.7</b> of this <b>Bellrock OfTDA Scoping Report</b> .                                                                                                                                                                                                                                                                                                                                                                                 |
| MD-MAU                | May 2026<br><br>Bellrock OfTDA Scoping Information Package (Marine Directorate, 2026)                                                                                                                                                                       | Agreed with the study area approach and economic methodology. Advised that all potential impacts (including tourism and socio-cultural) remain scoped in at this stage.<br><br>Suggested desk-based methods for initial social assessments and the inclusion of up to five likely port locations or hypothetical scenarios. | While the MD-MAU advised that all social and tourism impacts remain scoped in at this stage, additional robust project-specific justifications have been presented within <b>Section 16.6</b> of <b>this Bellrock OfTDA Scoping Report</b> to propose scoping out both sociocultural effects and tourism impacts for the Bellrock OfTDA in isolation.<br><br>The methodology for these elements remains outlined within <b>Section 16.7</b> of this <b>Bellrock OfTDA Scoping Report</b> . |

## 16.4 Existing Environment

### 16.4.1 Study Areas

#### 16.4.1.1 Socioeconomic Study Area

1365. The relevant study areas for the socioeconomic assessment are onshore. This is because the organisations, individuals and communities (including commercial fisheries) that might be impacted by the Bellrock OFTDA activities are based in onshore communities, including coastal communities.
1366. The socioeconomic study areas for the assessment of effects on employment and economy will be defined in line with the guidance on the identification of 'local areas' for offshore developments published by the Scottish Government (Scottish Government, 2022a). This guidance identified six principles for identifying local study areas for offshore developments:
- **Principle 1 (Dual Geographies):** The local area for the supply chain and investment impacts should be separate from the local area(s) for wider socioeconomic impacts, including tourism and recreation;
  - **Principle 2 (Appropriate Impacts):** The appropriate impacts to be considered for assessments should be identified before defining the local areas;
  - **Principle 3 (Epicentres):** The local areas should include all the epicentres of the appropriate impacts;
  - **Principle 4 (Accountability):** The local areas used in the assessment should comprise of pre-existing economic or political geographies (community councils, local authorities, development agencies) to enhance accountability;
  - **Principle 5 (Understandable):** The local areas should be defined in such a way that they are understandable to the communities they describe; and
  - **Principle 6 (Connected Geography):** The local area for the supply chain and investment impacts should consist of connected (including coastal) pre-existing economic or political geographies.
1367. The epicentres of impact associated with the Bellrock Offshore Transmission Infrastructure will include the locations of the key construction and O&M ports, and the Bellrock OFTDA landfall and nearshore coastal environment. The economic impacts will also be assessed at the level of the Scottish and UK economies.

#### 16.4.1.2 Tourism Study Area

1368. For the assessment of tourism, the tourism study area is defined as the Bellrock OFTDA Scoping Boundary (up to MHWS) plus a 1 km coastal buffer on land. This spatial extent aligns with the study area established for **Chapter 15: Seascape, Landscape and Visual Impact** (see **Figure 15.1 (Appendix A (Volume 1))**).
1369. The Bellrock OFTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OFTDA which will form the basis of the Marine Licence

application. The tourism study area will be updated for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4 of Chapter 1: Introduction**). A figure illustrating this tourism study area and the key coastal tourism assets within it will be provided in the EIA Report.

1370. The receptors within this tourism study area comprise coastal tourism businesses and assets that have the potential to be secondarily affected by the Offshore Transmission Infrastructure. Key assets identified within this coastal buffer include Dunnottar Castle, Stonehaven Golf Club, Stonehaven Heated Open Air Pool, coastal restaurants and cafes, and various visitor accommodation providers.
1371. It should be noted that purely recreational marine and coastal activities (such as individuals using core paths and beaches, participating in water sports, surfing, sailing, or using bathing waters) have been separated from this Chapter. To ensure a clear and proportionate assessment, these recreational receptors will be considered within **Chapter 13: Marine Infrastructure and Other Users**. As primary recreational impacts are concluded to be not significant in **Chapter 13: Marine Infrastructure and Other Users**, no secondary offshore tourism pathways exist. Any wider onshore tourism effects will instead be captured within the Bellrock OnTDA EIA Report.

## 16.4.2 Data and Information Sources

1372. Socioeconomic and tourism specific information will be reviewed and analysed to inform the socioeconomic and tourism baseline. Information on socioeconomic within the socioeconomic study areas, and tourism within the tourism study area, will be collected through a detailed desktop review of existing studies and datasets, which are summarised in **Table 16.3**.
1373. At the time of drafting the Bellrock OfTDA EIA Report, the latest available data and information sources will be utilised, as several datasets may be updated following the scoping phase.

**Table 16.3: Key Data and Information Sources for Socioeconomics and Tourism Baseline**

| Dataset                                                     | Source                               | Year of Publication | Description                                                      |
|-------------------------------------------------------------|--------------------------------------|---------------------|------------------------------------------------------------------|
| <b>Socioeconomics</b>                                       |                                      |                     |                                                                  |
| Principal Population Projections 2022-based                 | Office for National Statistics (ONS) | 2025                | Scotland and UK-level population projections.                    |
| Mid-2024 Population Estimates - Local Authority             | National Records of Scotland         | 2025                | Population estimates.                                            |
| Northern Ireland Annual General Medical Services Statistics | Business Services Organisation       | 2024                | Number of General Practitioners (GPs) across the UK's countries. |
| Guide to an Offshore Windfarm                               | BVG Associates                       | 2024                | Information on the contracts required for an offshore wind farm. |

| <b>Dataset</b>                                                                       | <b>Source</b>                | <b>Year of Publication</b> | <b>Description</b>                                                |
|--------------------------------------------------------------------------------------|------------------------------|----------------------------|-------------------------------------------------------------------|
| Northern Ireland Housing Statistics                                                  | Department for Communities   | 2024                       | Housing in Northern Ireland used to define the UK baseline.       |
| Business Register and Employment Survey 2024                                         | ONS                          | 2025                       | Sectoral employment across Great Britain (GB).                    |
| Annual Business Survey                                                               | ONS                          | 2025                       | Information on economic activity in the UK.                       |
| Annual Population Survey                                                             | ONS                          | 2024                       | Employment, unemployment rates, and qualifications across the UK. |
| Annual Survey of Hours and Earnings 2025                                             | ONS                          | 2025                       | Earnings across the UK.                                           |
| Population Estimates - Local Authority Based by Five-year Age Band                   | ONS                          | 2025                       | Population estimates by local authority.                          |
| Dwelling Stock by Tenure, UK                                                         | ONS                          | 2024                       | Housing stock in the UK.                                          |
| House Price Statistics                                                               | Registers of Scotland        | 2024                       | Housing prices in Scotland.                                       |
| Housing Statistics: Stock by Tenure                                                  | Scottish Government          | 2024                       | Housing stock in Scotland.                                        |
| Pupil Census Supplementary Statistics 2025                                           | Scottish Government          | 2025                       | Pupil numbers across Scotland.                                    |
| Teacher Census Supplementary Statistics 2025                                         | Scottish Government          | 2025                       | Teacher numbers across Scotland.                                  |
| Education and Training Statistics for the UK                                         | UK Government                | 2024                       | Teacher per pupil numbers.                                        |
| Offshore Wind Skills Intelligence Report                                             | OWIC                         | 2023                       | Skills evidence for the offshore wind sector.                     |
| Job Density                                                                          | ONS                          | 2023                       | Employment over time across the UK.                               |
| General Practice - GP Workforce and Practice List Sizes                              | Public Health Scotland       | 2022                       | GPs in Scotland.                                                  |
| 2018-based Principal Population Projections for Council Areas                        | National Records of Scotland | 2020                       | Population projections.                                           |
| Collaborating for Growth: Strategies for Expanding the UK Offshore Wind Supply Chain | OWIC                         | 2020                       | Information on the UK Offshore Wind Supply Chain.                 |

| Dataset                                                                | Source                    | Year of Publication | Description                                                                 |
|------------------------------------------------------------------------|---------------------------|---------------------|-----------------------------------------------------------------------------|
| Guidance on Assessing the Socioeconomic Impacts of Offshore Wind Farms | Oxford Brookes University | 2020                | Guidance on SEIAs of offshore wind farms.                                   |
| <b>Tourism</b>                                                         |                           |                     |                                                                             |
| Industry Statistics Database 2024                                      | Scottish Government       | 2024                | Information on sustainable tourism activity.                                |
| VisitScotland - Research and Insights                                  | VisitScotland             | 2024                | Information on tourism activity.                                            |
| International Passenger Survey 2022                                    | ONS                       | 2023                | Overnight visitors and spending for international visitors.                 |
| Annual Growth Sector Statistics                                        | Scottish Government       | 2023                | Evidence on tourism employment and Gross Value Added (GVA) across Scotland. |
| GB Day Visitor Survey 2024                                             | Kantar                    | 2025                | Day visitor trips and spending across GB.                                   |
| The GB Tourism Survey 2024                                             | Kantar                    | 2025                | Overnight visitor trips and spending across GB.                             |

### 16.4.3 Socioeconomics Baseline

1374. The focus of the socioeconomic baseline will be analysis of the key indicators that will determine the sensitivity of the receptors and the potential magnitude of any change. It will therefore cover:

- Population and demographics;
- Labour market indicators, including employment levels, skills and salaries;
- Industrial structure;
- Housing market indicators; and
- Productivity and economic output indicators.

1375. The geographic scope of the socioeconomics baseline will consider the study areas that have been identified in **Section 16.4.1**. This will include Scotland and the UK.

### 16.4.4 Tourism Baseline

1376. The tourism baseline focuses on the key drivers of the coastal tourism economy and specific visitor attractions located within the defined tourism study area (the Bellrock OfTDA Scoping Boundary up to MHWS, plus a 1 km onshore coastal buffer, as identified in **Section 16.4.1**).

1377. Key tourism assets identified within this baseline area include Dunnottar Castle, Stonehaven Golf Club, Stonehaven Heated Open Air Pool, as well as local shoreline amenities such as coastal cafes, restaurants, and various visitor accommodation providers. The locations of these key tourism assets will be mapped and illustrated on a figure in the EIA Report.
1378. It should be noted that baseline data gathering and spatial mapping for recreational marine and coastal activities such as individuals using core paths and beaches, participating in water sports, surfing, sailing, or using bathing waters, will be captured separately within **Chapter 13: Marine Infrastructure and Other Users**.

## 16.5 Potential Impacts

1379. The socioeconomics and tourism impacts considered in this assessment are those defined in the general advice published by MD-MAU in 2023 (MD-MAU, 2023), which highlights commonly identified impacts that could occur as a result of the development of an offshore wind farm. These have been grouped into three primary categories:
- Economic impacts:
    - GVA;
    - Employment, including characteristics of employment; and
    - Direct, indirect and induced impacts.
  - Social impacts:
    - Demographic impacts;
    - Housing impacts;
    - Other local public and private services; and
    - Sociocultural effects.
  - Impacts on other sectors;
    - Commercial fisheries; and
    - Tourism.

### 16.5.1 Embedded Mitigation and Enhancement Measures

1380. Embedded mitigation has been identified, as presented in **Table 16.4** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, where possible, offsetting potential adverse environmental effects. Consistent with the Institute of Environmental Management and Assessment guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.



1381. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 16.4: Embedded Mitigation Measures Relevant to Socioeconomics and Tourism**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                        |                 |
| ✓                          | ✓   | X               | Participation in a Regional Commercial Fisheries Working Group (subject to a Commercial Fisheries Working Group being established and operating effectively) to assist with liaison between the Applicant and the fishing community.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Participation in a Regional Commercial Fisheries Working Group will facilitate ongoing engagement with the fishing industry and support the identification and resolution of issues affecting commercial fishing activity. This will help minimise disruption to fisheries that contribute to local economics and coastal communities. | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will reduce the risk of introducing and spreading invasive non-native species. This will help protect marine ecosystems that support commercial activities, recreation, and tourism.   | Tertiary        |
| X                          | X   | ✓               | <p>Development of, and adherence to, a Decommissioning Programme.</p> <p>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.</p>                                                                                                                                                                                                                                                                                                                                                                                                          | Implementation of a Decommissioning Programme will ensure decommissioning is planned and undertaken in a safe, orderly and coordinated manner. This will minimise disruption to marine users, coastal communities and economic activities during the decommissioning phase.                                                            | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                                | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |
| ✓                          | ✓   | ✓               | A workforce mental health management plan will be implemented through the project-specific Health and Safety plan. This will include site inductions, access to support services, and procedures to identify and manage fatigue and stress, thereby reducing potential adverse effects on workforce wellbeing.                                                                                                                                                                                                       | Implementation of a workforce mental health management plan will support workforce wellbeing through the provision of appropriate support mechanisms and management procedures. This will help maintain a safe, healthy and productive workforce throughout construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure.                                                               | Tertiary        |
| ✓                          | X   | X               | A trenchless technique will be used at the landfall to avoid direct disturbance to the intertidal and shallow subtidal environment, thereby reducing habitat loss and seabed disturbance.                                                                                                                                                                                                                                                                                                                            | Use of a trenchless technique at the landfall will avoid direct disturbance to intertidal and nearshore areas during construction. This will reduce disruption to recreational activities and coastal users in the vicinity of the landfall.                                                                                                                                                                           | Primary         |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.<br><br>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols. | Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with measures in place to minimise disruption to local communities and users of the marine environment. This will support the efficient construction of the Bellrock Offshore Transmission Infrastructure and reduce potential effects on socioeconomic and tourism receptors. | Tertiary        |
| X                          | ✓   | X               | Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.                                                                                                                      | Regular inspection and maintenance will help maintain the integrity and performance of the Bellrock Offshore Transmission Infrastructure throughout its operational life. This will minimise the need for unplanned intervention and reduce the potential for disruption to other marine users and economics activities.                                                                                               | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                                             | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |
|                            |     |                 | These will be included in the Operation and Maintenance Plan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |
| ✓                          | X   | X               | Surface-piercing infrastructure (i.e. OfSS(s) and OfRCS(s)) will be located at least 39 km from the coastline (MHWS), which will limit visibility from the locations of sensitive receptors along the coast. Significant effects on landscape and visual receptors from the presence of the OfSS(s) and OfRCS(s) are therefore considered unlikely.                                                                                                                                                                                                                                                                                                | Locating the OfSS(s) and OfRCS(s) at least 39 km from the coastline (MHWS) will reduce their prominence within coastal views and limit visibility from sensitive coastal receptors. This will minimise the potential for effects on the visual amenity that contributes to recreation and tourism activities.                                                                                                       | Primary         |
| ✓                          | ✓   | ✓               | <p>The Applicant will proactively engage with potential suppliers to build local supply chain capacity. Work with other developers, the Scottish Government, and key stakeholders to assist in addressing barriers to local supply chain participation, with the aim of supporting and enhancing the participation of local businesses.</p> <p>Alongside this, the Energy Pathfinder<sup>1</sup> (or similar initiative) will be utilised to ensure visibility of relevant opportunities for Scottish and UK suppliers to bid for work. This measure will ensure opportunities for supply chain spending in Scotland and the UK are maximised.</p> | Engagement with suppliers, government and industry stakeholders to address barriers to participation together with the use of initiatives such as Energy Pathfinder will improve visibility of contracting opportunities and support greater involvement of local, Scottish and UK businesses. This will help maximise supply chain expenditure and associated economic benefits arising from the Bellrock Project. | Tertiary        |
| ✓                          | ✓   | ✓               | The Applicant will collaborate with local and national agencies on enterprise and skills development programmes to train and upskill the workforce and ensure local residents have access to the opportunities created.                                                                                                                                                                                                                                                                                                                                                                                                                            | Collaboration with local and national agencies on enterprise and skills development programmes will help improve workforce skills and access to employment opportunities. This will support local economic growth and enhance the ability of local communities to benefit from opportunities related to the Bellrock Project.                                                                                       | Tertiary        |

| Relevant Development Phase                                                                                                                                                                                                                                                                            |     |                 | Embedded Mitigation Measure | Relevance to Assessment | Mitigation Type |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------|-----------------------------|-------------------------|-----------------|
| Construction                                                                                                                                                                                                                                                                                          | O&M | Decommissioning |                             |                         |                 |
| Notes:<br><br><sup>1</sup> Energy Pathfinder ( <a href="https://energypathfinder.nstauthority.co.uk/projects">https://energypathfinder.nstauthority.co.uk/projects</a> ) is a searchable database of upcoming construction and O&M contracts for North Sea oil and gas and renewable energy projects. |     |                 |                             |                         |                 |

## 16.6 Scoping of Potential Impacts

1382. This section sets out the initial assessment of potential impacts on socioeconomics and tourism due to the construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure. The assessment is based on a combination of:

- The definition of the Bellrock Offshore Transmission Infrastructure at the scoping stage;
- Embedded mitigation, as set out in **Section 16.5.1**;
- The level of understanding of the baseline at the scoping stage;
- The existing evidence base for socioeconomics and tourism effects due to the Bellrock Offshore Transmission Infrastructure;
- Relevant policy; and
- The professional judgement of qualified economists.

1383. The socioeconomics impacts that are considered in this section are those defined in the general advice published by the MD-MAU in 2023 (MD-MAU, 2023), as listed in **Section 16.5**. At the time of writing, the construction and O&M port(s), which are expected to be the main epicentres of impact, are not yet known and will not be known until post-consent. At the time of the assessment, it will however be possible to identify hypothetical areas of impact and undertake scenario planning for impact at potential locations for the construction base and O&M base. It will not therefore be possible to be definitive about the nature and scale of the impacts affecting communities but information on impacts for a number of potential scenarios will be presented, including an overview of:

- What impacts may occur and at what scale;
- The sensitivity of the communities that these impacts may occur in; and
- How these impacts may be felt across these communities.

1384. Consideration has been given to taking a proportionate approach to undertaking social research required for the socioeconomic assessment, and how it will complement the wider community engagement activities that the Applicant wishes to undertake.

### 16.6.1 Construction, Operation and Maintenance, and Decommissioning Phases

#### 16.6.1.1 Increase in Employment and Gross Value Added

1385. The capital and operational expenditure associated with the Bellrock Offshore Transmission Infrastructure will generate direct, indirect, and induced economic benefits across the local, Scottish, and UK economies. This impact will therefore be **scoped in** for further assessment in the EIA.

### 16.6.1.2 Demographic Changes

1386. The requirement for both temporary (construction) and permanent (O&M) workforces at the eventual port locations has the potential to alter local population dynamics. An influx of workers may result in short-term population increases during construction and more sustained changes during operation. This impact will therefore be **scoped in** for further assessment in the EIA.

### 16.6.1.3 Changes to Housing Demand

1387. The requirement for both temporary (construction) and permanent (O&M) workforces at the eventual port locations is likely to increase demand for both short- and long-term accommodation. This impact will therefore be **scoped in** for further assessment in the EIA.

### 16.6.1.4 Changes to Other Local Public and Private Services

1388. The requirement for both temporary (construction) and permanent (O&M) workforces at the eventual port locations may increase demand on local public and private services, such as healthcare, education, transport, and recreational facilities. This could place additional pressure on existing service provision. This impact will therefore be **scoped in** for further assessment in the EIA.

### 16.6.1.5 Changes to Commercial Fisheries

1389. The physical presence of the Offshore Transmission Infrastructure and cable laying activities has the potential to result in spatial overlap and displacement of fishing activities. The secondary economic effects of this will be assessed using information and conclusions reached in **Chapter 10: Commercial Fisheries**. This impact will therefore be **scoped in** for further assessment in the EIA.

### 16.6.1.6 Sociocultural Effects

1390. Sociocultural effects are identified in the general advice published by the MD-MAU in 2023 (MD-MAU, 2023) as a potential type of impact:
- Lifestyles/quality of life;
  - Gender issues; family structure;
  - Social problems (e.g. crime, ill-health, deprivation);
  - Human rights;
  - Community stress and conflict; integration, cohesion and alienation; and
  - Community character or image.
1391. Regarding potential social impacts on port communities and given that the Bellrock Project is in the early stage of construction and O&M port selection, gathering primary data is not practical at every potential port location and could result in stakeholder fatigue. However, the Applicant is supporting an industry wide primary research data gathering programme that is in the process of being commissioned by Crown Estate Scotland and the Scottish Offshore Wind Energy Council.



1392. In 2022, the Scottish Government published social research by the Diffley Partnership (Scottish Government, 2022b) that considered the social impacts that coastal communities with experience of offshore wind farms have had. While this research found that the perception of these communities was that the offshore wind farms have had a minor net positive impact on their quality of life, community relations and community character, the majority of respondents felt that the offshore wind farm projects have had no impact on these sociocultural attributes. This is shown in **Table 16.5**, which shows that 63% of respondents felt the development of offshore wind projects had no impact on their quality of life, 59% felt it had no impact on community relations and 55% felt it had no impact on community character.

**Table 16.5: Responses from Coastal Communities to Questions Regarding Sociocultural Impacts of Offshore Wind Farms**

| What impact, if any, do you think that offshore wind farms in your area have had on | Total Positive Impact | No Impact | Total Negative Impact | Net Positive/Negative |
|-------------------------------------------------------------------------------------|-----------------------|-----------|-----------------------|-----------------------|
| ...quality of life?                                                                 | 25%                   | 63%       | 4%                    | + 21%                 |
| ...community relations?                                                             | 16%                   | 59%       | 7%                    | + 9%                  |
| ...community character?                                                             | 21%                   | 55%       | 9%                    | + 12%                 |

1393. The recent **Bellrock WFDA EIA Report** assessed potential sociocultural effects on coastal communities. That assessment concluded that significant sociocultural effects are tied to the large scale of investment, workforce requirements, and demographic changes concentrated at the primary Wind Farm Infrastructure construction and O&M ports.
1394. The offshore activities associated with the Bellrock Offshore Transmission Infrastructure (Bellrock OfTDA) represent a small fraction of the wider project's capital expenditure and scale. The vessel movements, workforce requirements, and port activities required solely for the Bellrock OfTDA will not independently generate the volume of demographic influx required to trigger discernible changes to community character, community relations, or quality of life.
1395. Because any significant sociocultural effects are driven by the broader Bellrock WFDA activities (which have already been assessed within the **Bellrock WFDA EIA Report** rather than the Bellrock OfTDA in isolation, this impact is considered negligible for the transmission assets alone.
1396. It is therefore proposed that sociocultural effects are **scoped out** of further assessment in the Bellrock OfTDA EIA Report.

### 16.6.1.7 Changes to Tourism

1397. For the Offshore Transmission Infrastructure, there is no plausible pathway to impact coastal tourism assets. This is because **Chapter 15: Seascape, Landscape and Visual Impact** scopes out all potential Seascape, Landscape, and Visual Impact Assessment impacts for the Bellrock Offshore Transmission Infrastructure and **Chapter 14: Marine Archaeology and Cultural Heritage** scopes out all impacts relating to setting, due to the distance offshore (minimum 39 km from MHWS) for any surface-piercing structures (OfSS(s) and OfRCS(s)), and the temporary and limited nature of offshore works for vessels installing the Offshore Transmission Infrastructure

during construction (and removal during decommissioning). This means there are no visual or historic setting effects that could deter visitors from the construction, O&M or decommissioning of the Offshore Transmission Infrastructure.

1398. Potential impacts on recreation are considered in **Chapter 13: Marine Infrastructure and Other Users**, which concludes that all primary impacts on marine and coastal recreational activities during construction, O&M, and decommissioning are not expected to be significant and have been scoped out of the assessment. Potential impacts from the construction, O&M or decommissioning of the Bellrock Onshore Transmission Infrastructure, such as noise, vibration, traffic, and transport and access impacts will be dealt with entirely within the Bellrock OnTDA EIA. Consequently, secondary effects on tourism from the Bellrock Offshore Infrastructure alone have been **scoped out** of further assessment in the EIA.
1399. Furthermore, as the Bellrock Offshore Transmission Infrastructure has no plausible pathway to effect tourism receptors, it cannot contribute to any whole-project or cumulative effects. Consequently, a whole-project assessment for tourism is **scoped out** of the Bellrock OfTDA EIA Report. Any whole-project or cumulative tourism effects will be deferred to the Bellrock OnTDA EIA, where the localised onshore amenity impacts will be evaluated.

## 16.6.2 Bellrock Project Socio-economics Whole Project Assessment

1400. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects on socioeconomic and tourism receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
1401. As detailed in **Section 16.6.1.7**, there are no plausible pathways or significant primary effects on marine and coastal recreation identified from the Offshore Transmission Infrastructure, meaning secondary offshore tourism effects have been scoped out. Because the Bellrock Offshore Transmission Infrastructure cannot contribute to a cumulative or whole project tourism effect, the Bellrock OfTDA Whole Project Assessment for tourism receptors is **scoped out** of the Bellrock OfTDA EIA. Whole project considerations for tourism will be considered within the Bellrock OnTDA EIA, where onshore receptors are assessed.
1402. In addition, the beneficial economic, employment, and supply chain impacts of the Bellrock Project (comprising the WFDA, OfTDA, and OnTDA) will be captured and presented within a standalone report appended to the Bellrock OfTDA EIA Report. The first iteration of the Economic Impact of the Bellrock Offshore Wind Farm was submitted alongside the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026).

### 16.6.3 Potential Cumulative Effects

1403. The Bellrock OfTDA CEA will be undertaken in accordance with the methodology set out in **Section 4.7 of Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the CEA, is provided in **Plate 4.3**.
1404. The CEA will assess the impacts identified through the Bellrock OfTDA Whole Project Assessment (**Section 16.6.2**) together with impacts arising from other reasonably foreseeable plans and projects where there is conceptual, spatial, and/or temporal overlap, to determine the potential for cumulative impacts and subsequent cumulative effects on socioeconomics receptors. For socioeconomics, this will primarily focus on the cumulative economic and social effects associated with the concurrent or sequential development of other offshore wind projects (e.g. the ScotWind and Innovation and Targeted Oil and Gas leasing rounds) on the east coast of Scotland and the wider UK supply chain.
1405. For tourism, as detailed in **Section 16.6.1.7**, no plausible impact pathways exist for the Bellrock Offshore Transmission Infrastructure to affect tourism receptors. Consequently, potential cumulative impacts on tourism are **scoped out** of further assessment within the Bellrock OfTDA EIA.

### 16.6.4 Potential Transboundary Effects

1406. The following transboundary effects have been identified as potential occurrences resulting from activities associated with the Bellrock Offshore Transmission Infrastructure construction, O&M, and decommissioning:
- Socioeconomic effects taking place outside of the UK, relating to the non-UK supply chain during the construction, O&M, and decommissioning phases. These effects will result from the import of goods and services from outside of the UK and are expected to be beneficial;
  - Economic effects on commercial fisheries based outside of the UK during construction, O&M, and decommissioning. The assessment of these secondary economic effects will directly align with the transboundary assessment and displacement data within **Chapter 10: Commercial Fisheries**; and
  - Tourism Receptors. Transboundary effects on tourism receptors have been **scoped out**. There is no plausible physical, visual, or sensory pathway for the Bellrock Offshore Transmission Infrastructure to affect coastal tourism assets located in other European Economic Area member states.

### 16.6.5 Summary of Potential Impacts

1407. Potential impact pathways relevant to socioeconomics and tourism which may occur during the construction, O&M, or decommissioning phases of the Bellrock Offshore Transmission Infrastructure have been summarised in **Table 16.6**.

**Table 16.6: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Socioeconomics and Tourism**

| Potential Impact                                   | Receptor(s)                                                | Scoped In or Scoped Out? (✓ or X) |     |                 |
|----------------------------------------------------|------------------------------------------------------------|-----------------------------------|-----|-----------------|
|                                                    |                                                            | Construction                      | O&M | Decommissioning |
| Increase in employment and GVA                     | Economies of Scotland and the UK, and local epicentres     | ✓                                 | ✓   | ✓               |
| Demographic changes                                | Potential range of communities around epicentres of impact | ✓                                 | ✓   | ✓               |
| Changes to housing demand                          | Potential range of communities around epicentres of impact | ✓                                 | ✓   | ✓               |
| Changes to other local public and private services | Potential range of communities around epicentres of impact | ✓                                 | ✓   | ✓               |
| Sociocultural effects                              | Communities local to epicentres of impact                  | X                                 | X   | X               |
| Changes to tourism                                 | Tourism receptors                                          | X                                 | X   | X               |
| Changes to commercial fisheries                    | Commercial fishing sector and associated supply chains     | ✓                                 | ✓   | ✓               |
| Whole OFTDA Project Assessment                     | Socioeconomics                                             | ✓                                 | ✓   | ✓               |
| Cumulative effects                                 | Socioeconomics                                             | ✓                                 | ✓   | ✓               |
| Transboundary effects                              | Socioeconomics                                             | ✓                                 | ✓   | ✓               |

## 16.7 Proposed Approach to Impact Assessment

1408. The assessment of socioeconomics and tourism receptors will comply with the general approach set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and the guidance listed in **Section 16.2**. Further detail on the specific approach to assessment for this topic is provided below.
1409. The proposed approach is in line with the approach taken in the **Bellrock WFDA EIA Report**.

### 16.7.1 Economic Impact Methodology

1410. To assess the socioeconomic impacts of the Bellrock Offshore Transmission Infrastructure, the focus will be on the direct and indirect (supply chain) impacts. In addition to this, the assessment will also consider the effects of staff spending and the economic impact that this subsequent increase in demand stimulates (the induced impact).
1411. The economic impacts will be considered for each study area and will be reported in terms of:
- **GVA:** this is a measure of economic value added by an organisation, industry or region and is typically estimated by subtracting the non-staff operational costs from the turnover of an organisation;
  - **Years of Employment:** this is a measure of employment which is equivalent to one person being employed for a year and is typically used when considering short to medium term employment impacts, such as those associated with the construction phase of the Bellrock Offshore Transmission Infrastructure; and
  - **Jobs:** this is a measure of employment which considers the headcount employment in an organisation or industry. This measure is used when considering long term impacts such as the jobs supported during the O&M phase of the Bellrock Offshore Transmission Infrastructure.
1412. The socioeconomic assessment will consider the lowest, realistic levels of expenditure associated with the Bellrock Offshore Transmission Infrastructure, since that would represent the 'worst-case' scenario in terms of the expected positive socioeconomic effects. This will take account of the 'Commitment' scenario in the updated Supply Chain Development Statement Outlook (Bellrock Offshore Wind Farm, 2026). The updated 2026 Supply Chain Development Statement Outlook sets out a commitment to spend £1.7 billion within the Scottish supply chain across the Bellrock Project lifecycle, with an ambition to reach £2.7 billion<sup>53</sup>. The economic impact assessment will take account of deadweight, leakage, displacement and substitution.
1413. The assessment will include the entire Bellrock Offshore Transmission Infrastructure. Full details, specific to the Bellrock OFTDA, are discussed in **Chapter 3: Project Description**.

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<sup>53</sup> <https://www.crownstatescotland.com/supply-chain-information>

1414. The analysis for the Bellrock Offshore Transmission Infrastructure will cover three phases:
- Construction (including development);
  - O&M; and
  - Decommissioning.
1415. The impacts during the construction phase will be based on the actual expenditure that has occurred to date as well as the planned expenditure associated with this phase. In addition to the total impact over the period, the assessment will also consider the timings of impacts during this phase to understand the peaks and troughs of this activity.
1416. The impacts during the O&M phase for the Bellrock Offshore Transmission Infrastructure will be based on projected O&M expenditure.
1417. In instances where impacts are expected to occur over several years, such as the O&M phase or the decommissioning phase, a discount rate will be applied. This allows impacts that occur sooner to be valued more highly than impacts that occur in the future, a concept known as time preference. In this instance a discount rate of 3.5% will be chosen, which is in line with the UK Government's Green Book (His/her Majesty's Treasury, 2026). On this basis it is expected that the decommissioning phase impacts will be substantially lower than for the construction phase.

### 16.7.2 Tourism Assessment Methodology

1418. As detailed in **Section 16.6.1.7**, impacts on coastal tourism assets from the Offshore Transmission Infrastructure are proposed to be scoped out of the core assessment due to the lack of a plausible physical, visual, or sensory pathway.
1419. However, the methodology for assessing impacts on tourism would have involved a review of the significant primary environmental effects identified in related technical disciplines (such as seascape and landscape) to determine if they are likely to result in significant secondary effects on visitor behaviour, tourism spend, or amenity at identified coastal tourism receptors.

## 16.8 Scoping Questions to Consultees

1420. The following questions are posed to consultees to help them frame and focus their response to the socioeconomics and tourism scoping exercise, which will in turn inform the EIA:

- Do you agree that all the relevant data sources have been identified in **Section 16.4.2**?
- Do you agree that all relevant legislation, policy and guidance have been identified in **Section 16.2**?
- Do you agree with the proposed study areas as presented in **Section 16.4.1**?
- Do you agree with the scoping in and scoping out of impact pathways in relation to socioeconomics and tourism (as presented in **Table 16.6**)?
- Do you agree with the assessment of transboundary effects in relation to socioeconomics and tourism?
- Do you agree with the assessment of cumulative effects in relation to socioeconomics and tourism?
- Do you agree with the proposed assessment methodology for socioeconomics and tourism?
- Do you agree on the suitability of the proposed embedded mitigation of relevance to socioeconomics and tourism that have been identified for the Bellrock Offshore Transmission Infrastructure?
- Do you have any other matters or information sources that you wish to present?

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# 17 Climate Change

## 17.1 Introduction

1421. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on climate change.
1422. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1423. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1424. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1425. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1426. This Chapter provides an overview of the existing environment and sets out the proposed approach and methodology for the greenhouse gas (GHG) assessment and the Climate Change Risk (CCR) assessment (which assesses the impact of climate change on receptors and the vulnerability and resilience of the Bellrock Offshore Transmission Infrastructure from climate change) within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
1427. The two separate assessments will be presented in the Bellrock OfTDA EIA Report as two individual chapters, as follows:
- A GHG assessment, which will comprise the following elements:
    - An assessment to consider GHG emissions released over the lifecycle of the Bellrock Offshore Transmission Infrastructure, and the avoided emissions from the provision of renewable electricity to the National Electricity Transmission System from the wider Bellrock Project;
    - A GHG Whole Project Assessment for the Bellrock Project (i.e., the Bellrock OfTDA, OnTDA and WFDA combined), which will build on the GHG Whole Project Assessment presented in the **Bellrock WFDA EIA Report**. This GHG Whole Project Assessment will evaluate the net contribution of the Bellrock Project as a whole to climate change, through an estimation of GHG emissions arising from infrastructure associated with all component parts (Bellrock OfTDA, OnTDA and WFDA). Although the assessments presented in each EIA Report will remain valid, this iterative approach will be undertaken allowing for up-to-date information (if required) to be incorporated within each submission. Further details are discussed in **Section 17.7.1.3**; and
    - A blue carbon assessment will be carried out for the Bellrock Offshore Transmission Infrastructure. If feasible, based on the availability of public data sources and site-specific data (such as the Bellrock OfTDA environmental survey (see **Chapter 6: Intertidal and Benthic Ecology**)), the blue carbon assessment will assess the release of stored carbon or reductions in carbon sequestration rates caused by disturbance or loss of seabed/habitat during the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure. The blue carbon assessment will consider the Bellrock Offshore Transmission Infrastructure only, the blue carbon for the Bellrock Wind Farm Infrastructure has been considered in its respective EIA Report.
  - A CCR assessment, which will evaluate future trends in climate change impacts and the vulnerability and resilience of the Bellrock Offshore Transmission Infrastructure to such changes. The CCR assessment will consider the Bellrock Offshore Transmission Infrastructure only, with the vulnerability and resilience to climate change impacts considered separately for the Bellrock Wind Farm Infrastructure and Bellrock Onshore Transmission Infrastructure in their respective EIA Reports.

1428. This approach to GHG assessment allows for assessments to be undertaken in support of the Bellrock OfTDA application (separate applications for the Bellrock OfTDA, OnTDA and WFDA) and allows for a Whole Project Assessment (consideration of the Bellrock Project as a whole).
1429. As discussed in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** the assessment of the Bellrock Wind Farm Infrastructure is included in the separate **Bellrock WFDA EIA Report** submitted April 2026 (Bellrock Offshore Wind Farm Limited, 2026).
1430. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 6: Intertidal and Benthic Ecology;** and
  - **Chapter 19: Major Accidents and Disasters.**
1431. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 17.2 Legislation, Policy and Guidance

1432. **Table 17.1** provides an overview of relevant legislation, policy and guidance which establishes requirements for the climate change chapters and the assessment methodology in the Bellrock OfTDA EIA Report. Policy and legislation relevant to the Bellrock Offshore Transmission Infrastructure generally is provided in **Chapter 2: Legislative and Policy Context**.

**Table 17.1: Summary of Relevant Legislation, Policy and Guidance for Climate Change**

| Relevant Legislation, Policy and Guidance                                | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GHG Assessment</b>                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Legislation</b>                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The United Nations Framework Convention on Climate Change (UNFCCC), 1992 | The UNFCCC is an international treaty which established a global climate governance framework and solidified climate change as an agenda item for future agreements and policies. The UNFCCC facilitated intergovernmental climate change negotiations such as the Conference of the Parties.                                                                                                                                                                 |
| The Kyoto Protocol, 1987                                                 | <p>Following from the UNFCCC, the Kyoto Protocol committed industrialised countries to limit and reduce their GHG emissions in accordance with individual targets to reduce the rate and extent of global warming.</p> <p>Annex A of the Kyoto Protocol defined key GHGs as follows:</p> <ul style="list-style-type: none"> <li>▪ Carbon dioxide (CO<sub>2</sub>);</li> <li>▪ Methane (CH<sub>4</sub>);</li> <li>▪ Nitrous oxide (N<sub>2</sub>O);</li> </ul> |



| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                             | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>▪ Hydrofluorocarbons;</li> <li>▪ Perfluorocarbons;</li> <li>▪ Sulphur hexafluoride (SF<sub>6</sub>); and</li> <li>▪ Nitrogen trifluoride (NF<sub>3</sub>).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| The Paris Agreement, 2015                                                                                                                                                                                                                                             | <p>The Paris Agreement entered into force in 2016 and was ratified by the United Kingdom (UK) Government at Conference of the Parties 22. It is a legally binding international treaty with an overarching goal of “<i>holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels</i>”.</p> <p>The Paris Agreement requires countries to submit national climate action plans known as Nationally Determined Contributions (NDC), with each successive NDC reflecting increasing decarbonisation ambitions.</p>                                                                                                                                                                                                                                                                                                                                                                       |
| The Climate Change Act 2008<br>Climate Change Act 2008 (2050 Target Amendment Order 2019)                                                                                                                                                                             | <p>The Climate Change Act 2008 provides the legal basis for the UK’s long-term response to tackling climate change. The 2050 Target Amendment Order introduced in 2019 revised the UK’s target to net zero by 2050, with an interim target of 78% emission reduction by 2035 compared to 1990 levels.</p> <p>The Act requires the UK Government to set legally binding carbon budgets to limit GHG emissions in a given time period. These budgets are set by the Committee on Climate Change (CCC) in five-year periods, and are set out in <b>Table 17.4</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Climate Change (Scotland) Act 2009<br>Climate Change (Emissions Reduction Targets) (Scotland) Act 2019<br>Climate Change (Emissions Reduction Targets) (Scotland) Act 2024<br>Climate Change (Scotland) Act 2009 (Scottish Carbon Budgets) Amendment Regulations 2025 | <p>Scotland has its own distinct climate change legislation. The Climate Change (Scotland) Act 2009 was implemented to reduce the GHG emissions in Scotland by at least 80% by 2050. The Climate Change (Annual Targets) (Scotland) Order 2011 outlines the targets for 2023-2027.</p> <p>The Climate Change (Scotland) Act 2009 and the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 accelerate Scotland’s overall target in the 2009 Act to net zero by 2045.</p> <p>In November 2024, the Climate Change (Emissions Reduction Targets) (Scotland) Act 2024 modified the Climate Change (Scotland) Act 2009 to introduce limits on the amount of GHGs emitted in Scotland over a five-year period. This replaces the requirements for annual targets as outlined in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 with a system of targets based on carbon budgets. These are set out in <b>Table 17.5</b>. The overall target of net zero by 2045 will remain in place.</p> |
| Energy Act 2023                                                                                                                                                                                                                                                       | <p>The Energy Act 2023 aims to transform the UK’s energy system by strengthening energy security, supporting the delivery of net zero, and ensuring household bills are affordable in the long-term. The Act will help the government deliver net zero by 2050 in a pragmatic, proportionate, and realistic way. It also emphasizes offshore wind farms as key components in providing the UK’s renewable energy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



| Relevant Legislation, Policy and Guidance                                                                                                                          | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Policy</b>                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| National Planning Framework 4 (NPF4) (Scottish Government, 2023)                                                                                                   | <p>Scotland's fourth NPF4 sets out the national spatial strategy up to 2045, which guides infrastructure projects on principles and priorities.</p> <p>NPF4 supports developments that enable decarbonisation through the provision of renewable, low-carbon and zero emission technologies (Policies 1 and 11).</p> <p>In addition, NPF4 requires developments to minimise their lifecycle GHG emissions as far as possible (Policy 2).</p>                                                                                                                               |
| The Climate Change Plan, Third Report on Proposals and Policies (2018-2032) (Scottish Government, 2020a)                                                           | <p>The Scottish Government publishes Climate Change Plans to set out the pathway to achieving its GHG emission reduction targets in accordance with the Climate Change (Scotland) Act 2009. The most recent version, the 2018-2032 Update, includes the Offshore Wind Policy Statement that supports the development of between 8 to 11 gigawatts (GW) of offshore wind capacity by 2030. The Climate Change Plan: 2026-2040 is under consultation at the time of scoping.</p>                                                                                             |
| The UK Net Zero Strategy 2021 (Department for Business, Energy and Industrial Strategy (BEIS), 2021) and British Energy Security Strategy, 2022 (BEIS, 2022a)      | <p>The UK Net Zero Strategy and British Energy Security Strategy apply to Scotland and provide a national commitment to the provision of low-carbon, secure and affordable energy sources, including an ambition to deliver up to 50 GW of offshore wind capacity by 2030.</p>                                                                                                                                                                                                                                                                                             |
| UK Climate Change Strategy 2021 to 2024 (Her/his Majesty's (HM) Government, 2021)                                                                                  | <p>The latest UK Climate Change Strategy aids UK exporters and suppliers through the transition to net zero by increasing support to clean growth and climate adaptation, reducing GHG emissions and understanding and mitigating climate-related financial risks. The Strategy highlights the importance of transforming the financial system to boost innovation and transition away from high carbon sectors.</p>                                                                                                                                                       |
| <p>Carbon Budget Delivery Plan (Department for Energy Security and Net Zero (DESNZ), 2023a)</p> <p>Carbon Budget and Growth Delivery Plan (DESNZ, 2025b)</p>       | <p>The Carbon Budget Delivery Plan 2023, and subsequent Carbon Budget and Growth Delivery Plan 2025, set by the UK Government, outlines the proposals and plans to enable the delivery of the 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> Carbon Budget as part of the requirements under the Climate Change Act 2008.</p> <p>At the time of writing, the UK Government has indicated that a delivery plan setting out how the 7<sup>th</sup> Carbon Budget will be met will be published, however no definite timescale for its publication has been confirmed.</p> |
| Scottish Blue Carbon Action Plan (Scottish Government, 2025a)                                                                                                      | <p>This action plan sets out how the Scottish Government will integrate consideration of blue carbon habitats, including seabed sediments, into marine policy and decision-making, recognising their role as long-term natural carbon stores and nature-based solutions for climate change mitigation and adaptation.</p>                                                                                                                                                                                                                                                  |
| <b>Guidance</b>                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Institute of Environmental Management and Assessment (IEMA <sup>1</sup> ): Assessing Greenhouse Gas Emissions and Evaluating their Significance (Edition 2) (2022) | <p>The guidance document presents guidelines for undertaking GHG assessments, evaluating the significance of a development's GHG emissions in an EIA context, and approach to mitigation.</p>                                                                                                                                                                                                                                                                                                                                                                              |

| <b>Relevant Legislation, Policy and Guidance</b>                                                                                                                        | <b>Relevance to the Assessment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Institute of Sustainability and Environmental Professionals: Assessing GHG emissions and evaluating their significance with supplementary guidance (Edition 2.1) (2026) | An additional supplement to the guidance was published in 2026, which clarifies the 2022 guidance, to aid practitioners in the interpretation and application of the guidance in practice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| PAS 2080: Carbon Management in Buildings and Infrastructure (2023) (British Standards Institution, 2023)                                                                | The guidance document provides specifications for the management of whole-life carbon in built environment projects and best practice measures to enable further emission reductions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2015)                                                                                       | The guidance document provides requirements for the preparation of GHG emission inventories and the consideration of direct and indirect GHG emissions (Scope 1, 2 and 3 emissions).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Global Maritime Energy Efficiency Partnerships Project: Port Emissions Toolkit (2018)                                                                                   | The guidance document provides a methodology for calculating vessel emissions during various operating modes such as in transit and manoeuvring.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| The Offshore Wind Industry Product Carbon Footprinting Guidance (2026)                                                                                                  | The guidance document provides offshore wind industry-specific guidance for the calculation of full carbon footprints for offshore wind farms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>CCR Assessment</b>                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Legislation</b>                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| The Climate Change Act 2008 and Climate Change (Scotland) Act 2009                                                                                                      | <p>The Climate Change Act 2008 requires the UK Government to undertake a CCR Assessment every five years and identify key climate risks and opportunities to national communities and economic sectors. The Climate Change (Scotland) Act 2009 poses a similar requirement for the preparation of strategic programmes for climate change adaptation following the publication of each UK CCR Assessment.</p> <p>The third UK CCR Assessment was published in 2022 (Department for Environment Food and Rural Affairs, 2022), followed by the third National Adaptation Programme (Department for Environment Food and Rural Affairs, 2023), which outlines priority adaptation actions to be taken. The Scottish Climate Change Adaptation Programme 2019-2024 identifies specific actions for Scotland, including a need for resilient infrastructure systems.</p> |
| <b>Policy</b>                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| NPF4 (Scottish Government, 2023)                                                                                                                                        | As a long-term vision for spatial development, NPF4 supports the enhancement of the climate resilience of existing and future developments. NPF4 requires developments to be sited and designed to adapt to current and future risks from climate change (Policy 2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Scottish National Adaptation Plan 3 / Draft 2024–2029) (Scottish Government, 2024)                                                                                      | Sets out Scotland's strategic response to climate risks identified in the UK CCR Assessment, including actions to improve the resilience of infrastructure and essential services. The Plan reinforces the need for projects to assess Exposure, Vulnerability and Adaptive Capacity over their lifecycle and demonstrates policy support for adaptation-led design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                                                                                                         | Relevance to the Assessment                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Draft Updated Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2025d)                                                                                                                                                                                                                          | Provides the strategic spatial and policy framework for offshore wind development in Scottish waters. The Plan recognises climate change as a key consideration, including changing storm patterns and sea level rise, and informs project-level assessments undertaken under Section 36 and marine licensing regimes. |
| <b>Guidance</b>                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                        |
| IEMA: Environment Impact Assessment Guide to Climate Change Resilience and Adaptation (2020)                                                                                                                                                                                                                      | The guidance document provides a methodology for characterising the climate baseline and assessing a development's vulnerability and resilience to climate change in the EIA process.                                                                                                                                  |
| European Commission: Technical Guidance on the Climate Proofing of Infrastructure in the Period 2021 to 2027 (2021)                                                                                                                                                                                               | The guidance document outlines climate adaptation considerations for infrastructure projects and a risk assessment methodology for integration into impact assessments.                                                                                                                                                |
| C40 Cities: Climate Change Risk Assessment Guidance (2018)                                                                                                                                                                                                                                                        | The guidance document includes a Climate Hazard Taxonomy based on the United Nations Disaster Risk Reduction classification, which provides the basis for identifying and screening climate hazards. Although geared towards cities, the approach is largely applicable to all built environment projects.             |
| Scottish Government – Keeping Scotland Running: Building Resilience to a Changing Climate (2020b)                                                                                                                                                                                                                 | Provides guidance for operators of critical infrastructure on managing climate risks, cascading failures and long-term resilience planning. Particularly relevant to offshore energy infrastructure and grid-connected assets.                                                                                         |
| Adaptation Scotland – Adaptation Capability Framework (2024)                                                                                                                                                                                                                                                      | Provides an evidence-based framework for assessing adaptive capacity across organizations and sectors. The framework supports structured evaluation of resilience measures, governance and operational readiness relevant to infrastructure projects.                                                                  |
| Scottish Environment Protection Agency (SEPA) – Climate Change Allowances for Flood Risk Assessment in Land-Use Planning (2025)                                                                                                                                                                                   | Sets out climate change allowances for rainfall, river flows and coastal flooding to be used in assessments. The guidance informs how projected climate change should be incorporated into exposure and design considerations for flood-related climate hazards.                                                       |
| <p>Notes:</p> <p><sup>1</sup> It is noted that IEMA changed its name to the Institute of Sustainability and Environmental Professionals (ISEP) in July 2025, however for consistency with the relevant guidance documents, references continue to refer to IEMA where they were published prior to July 2025.</p> |                                                                                                                                                                                                                                                                                                                        |

## 17.3 Consultation

1433. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to climate change for the

Bellrock OfTDA EIA. Responses to the Scoping Information Package relevant to climate change are provided in **Table 17.2**.

**Table 17.2: Consultation Relevant to Climate Change**

| Consultee             | Date/Document                                                                     | Comment                                                                                                                                                                                                                                                                                                                    | How Comment has been Addressed                                                                                                                                                                                                                 |
|-----------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NatureScot            | 12 June 2026<br>Formal response to the Bellrock OfTDA Scoping Information Package | NatureScot recommend that consideration is given to impacts on Blue Carbon and whether or not an assessment can be undertaken; this should expand on the information and assessment conducted for benthic ecology and focus on the potential impacts of the proposed development on marine sediments and coastal habitats. | A blue carbon assessment will be conducted as part of the GHG assessment, as outlined in <b>Section 17.5.1.1</b> and <b>Section 17.7.1.2</b> , and will expand on the information and assessment conducted for intertidal and benthic ecology. |
| Aberdeenshire Council | 28 July 2025, Email                                                               | Aberdeenshire Council agreed with the proposed approach for the GHG assessments.                                                                                                                                                                                                                                           | Noted. The methodology for the GHG assessment is set out in <b>Section 17.7.1</b> .                                                                                                                                                            |

1434. Consultation conducted as part of the Bellrock WFDA EIA pertinent to the Whole Project Assessment for the GHG assessment, was presented to MD-LOT, NatureScot and Aberdeenshire Council through letters issued in July 2025, to which Aberdeenshire Council agreed (**Table 17.2**) and MD-LOT and NatureScot did not provide comment. The methodology presented in the letters is reflected in the Whole Project Assessment methodology presented in **Section 17.7.1.3**. No other consultation relevant to the Bellrock OfTDA for climate change has taken place to date.

## 17.4 Existing Environment

### 17.4.1 Study Area

#### 17.4.1.1 Greenhouse Gas Assessment

1435. All GHG emissions will affect the same receptor, the global atmosphere, as opposed to directly affecting any specific local receptor. Emissions which are released or avoided due to project activities will have the same global effect on atmospheric GHG concentration, and its net effect on climate change regardless of where they occur, therefore the study area of the GHG assessment is not geographically defined (IEMA, 2022).

1436. The scope of the Bellrock OfTDA GHG assessment will include quantifying direct and indirect GHG emissions arising from the Bellrock Offshore Transmission Infrastructure over its full lifecycle: construction (including upstream activities which result in embodied carbon in materials used to construct the Offshore Transmission Infrastructure (such as the OfSS(s), OfRCS(s) and cables), O&M, and decommissioning. As the Bellrock Project will supply renewable energy to the National Electricity Transmission System, the GHG assessment will also account for emission savings from

the displacement of grid electricity which would have otherwise been generated from alternative forms. The study area for the Bellrock OfTDA GHG assessment will encompass all associated GHG emitting activities, including carbon benefits beyond the infrastructure system such as avoided emissions from exported electricity. The proposed assessment boundary for the Bellrock OfTDA GHG assessment is detailed under **Section 17.6**.

#### **17.4.1.1.1 Blue Carbon**

1437. The study area for the blue carbon assessment is limited to the Bellrock OfTDA Scoping Boundary (**Figure 1.1 (Appendix A (Volume 1))**). The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The blue carbon study area will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4** in **Chapter 1: Introduction**).

#### **17.4.1.2 Climate Change Risk Assessment**

1438. The scope of the CCR assessment will be limited to evaluating the vulnerability and resilience of the Bellrock OfTDA and its receptors to the effects of climate change. Therefore, the CCR assessment study area is geographically bounded and defined by the Bellrock OfTDA (**Figure 1.1 (Appendix A (Volume 1))**). The CCR assessment will be informed by historical observations and future projections of climate variables. The spatial resolution of the baseline data collected for the CCR assessment will provide representative coverage of the Bellrock OfTDA and the wider region of Eastern Scotland (The Met Office, 2016a).
1439. The temporal boundary of the CCR assessment will be defined by the project phases: construction, O&M and decommissioning for the Bellrock Offshore Transmission Infrastructure:
- The construction period for the Bellrock Offshore Transmission Infrastructure is assumed to be six years;
  - The operational lifetime is assumed to be up to 40 years for the Bellrock Offshore Transmission Infrastructure, but the seabed lease will be for up to 60 years; and
  - The duration of the decommissioning period will depend on the Bellrock OfTDA end-of-life strategy but, for EIA purposes, is assumed to be similar in timescales as the construction period.
1440. To characterise the future baseline climate, representative time slices will be identified in alignment with the project phases of the Bellrock Transmission Infrastructure (construction, O&M and decommissioning), and climate change projection data will be presented for each time slice to reflect changes in climate change severity over time and capture the likely climate conditions at each project phase.
1441. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the boundary of the Bellrock OfTDA. The CCR study area will be updated for the Bellrock EIA to reflect this refinement (see **Section 1.4** in **Chapter 1: Introduction**).

## 17.4.2 Data and Information Sources

1442. The desk-based sources used to characterise the existing environment and inform the GHG assessment and CCR assessment will consist primarily of publicly available datasets and reports from government and industry sources. **Table 17.3** identifies potential desk-based sources, which will be updated throughout the EIA process.

**Table 17.3: Summary of Key Data and Information Sources for Climate Change**

| Dataset                                                                                   | Year(s)                                    | Description                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GHG Assessment</b>                                                                     |                                            |                                                                                                                                                                                                                                 |
| Greenhouse Gas Reporting Conversion Factors (DESNZ, 2026a)                                | 2026 (or latest at the time of assessment) | Emission factors suitable for UK-based operations for various activities such as fuel consumption.                                                                                                                              |
| Digest of UK Energy Statistics (DESNZ, 2026b)                                             | 2026 (or latest at the time of assessment) | Up-to-date statistics for the UK power sector, including the operational GHG intensity of each fuel or generation source.                                                                                                       |
| UK Carbon Budgets (CCC, 2020 and 2025a)                                                   | Various, most recent publication in 2025   | National carbon budgets are used to contextualise the Bellrock Offshore Transmission Infrastructure's GHG emissions.                                                                                                            |
| Scotland Carbon Budgets (CCC, 2025b)                                                      | 2025                                       | Scotland Carbon Budgets used to contextualise the Bellrock Offshore Transmission Infrastructure's GHG emissions.                                                                                                                |
| CCC Reducing the UK's Carbon Footprint Report (2013)                                      | 2013                                       | Estimated lifecycle carbon intensity of various forms of electricity generation.                                                                                                                                                |
| Inventory of Carbon and Energy Database v4.1 (Jones and Hammond, 2025)                    | 2025                                       | Emission factors for embodied carbon in materials used during construction and replacement or repair activities.                                                                                                                |
| Dolan and Heath, Life Cycle Greenhouse Gas Emissions of Utility Scale Wind Power (2012)   | 2012                                       | GHG emission benchmarks for offshore wind projects to inform assumptions used in the GHG assessment regarding the likely contribution of emission sources to the Bellrock Offshore Transmission Infrastructure's GHG footprint. |
| Thomson and Harrison, Life Cycle Costs and Carbon Emissions of Offshore Wind Power (2015) | 2015                                       |                                                                                                                                                                                                                                 |
| DESNZ's UK Territorial Greenhouse Gas Emissions National Statistics (2024)                | 2024 (or latest at time of assessment)     | Estimates of annual GHG emissions from activities occurring within the UK's borders.                                                                                                                                            |
| Scottish Greenhouse Gas and Energy Statistics (Scottish Government, 2025a)                | 2023 (or latest at time of assessment)     | Statistical publications relating to energy and GHG emissions in Scotland.                                                                                                                                                      |

| Dataset                                                                                                         | Year(s) | Description                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Blue Carbon Assessment</b>                                                                                   |         |                                                                                                                                                                                                |
| NatureScot (Cunningham and Hunt, 2023)                                                                          | Various | Scottish Blue Carbon – a literature review of the current evidence for Scotland's blue carbon habitats.                                                                                        |
| NatureScot (Burrows, et al., 2014)                                                                              | 2014    | Assessment of Carbon Budgets and potential blue carbon stores in Scotland's coastal and marine environment.                                                                                    |
| NatureScot (Burrows, et al., 2017)                                                                              | 2017    | Assessment of Blue Carbon Resources in Scotland's Inshore Marine Protected Area Network.                                                                                                       |
| Scottish Government (Smeaton, et al., 2020)                                                                     | 2020    | Re-Evaluating Scotland's Sedimentary Carbon Stocks.                                                                                                                                            |
| Hunt et al. (2020)                                                                                              | 2020    | Quantifying Marine Sedimentary Carbon: A New Spatial Analysis Approach Using Seafloor Acoustics, Imagery, and Ground-Truthing Data in Scotland                                                 |
| Diesing et al. (2021)                                                                                           | 2021    | Organic carbon densities and accumulation rates in surface sediments of the North Sea and Skagerrak.                                                                                           |
| Smeaton et al. (Smeaton, et al., 2021a)                                                                         | 2021    | Marine Sedimentary Carbon Stocks of the UK's Exclusive Economic Zone.                                                                                                                          |
| Smeaton et al. (Smeaton, et al., 2021b)                                                                         | 2021    | Supporting documentation: Sediment type and surficial sedimentary carbon stocks across the UK's Exclusive Economic Zone and the territorial waters of the Isle of Man and the Channel Islands. |
| Smeaton et al. (2022)                                                                                           | 2022    | Quality not quantity: Prioritizing the management of sedimentary organic matter across continental shelf seas                                                                                  |
| Daewel et al. (2022)                                                                                            | 2022    | Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea.                                                                                |
| Turrell et al. (Turrell et al., 2023)                                                                           | 2023    | Clarifying the role of inorganic carbon in blue carbon policy and practice.                                                                                                                    |
| The Wildlife Trusts, World Wide Fund, and the Royal Society for the Protection of Birds (Burrows, et al., 2024) | 2024    | The UK's Blue Carbon inventory: Assessment of Marine Carbon Storage and Sequestration Potential in UK Seas (Including Within Marine Protected Areas).                                          |
| Watson et al. (2024)                                                                                            | 2024    | The global impact of offshore wind farms on ecosystem services.                                                                                                                                |



| Dataset                                                                                                                                   | Year(s) | Description                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CCR Assessment</b>                                                                                                                     |         |                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Met Office UK Climate Projection (UKCP18) Database and supporting reports (The Met Office, 2018)                                          | Various | <p>Climate change projection data and summaries for the UK for various climate variables such as air temperature and precipitation.</p> <p>Note: UKCP data is most applicable to onshore and coastal areas. '18' refers to the year that the data was first approved and published, although updates and enhancements to the data have been published since 2018. As such the data are considered to be applicable.</p> |
| Met Office's UK Climate Averages and Regional Climate Summaries (Met Office, 2016b)                                                       | Various | Historical climate observations and current climate conditions for the UK.                                                                                                                                                                                                                                                                                                                                              |
| Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (IPCC, 2023)                                                     | 2023    | <p>Current state of knowledge on climate science and possible climate futures.</p> <p>Provides the most up-to-date and comprehensive assessment of the global state of scientific knowledge on climate change, including observed and projected climate impacts, risks, mitigation pathways, and adaptation options under a range of future climate scenarios.</p>                                                      |
| Marine Climate Change Impacts Partnership (2020) Reports                                                                                  | Various | A collection of evidence reviews and summary reports on climate change effects in the marine environment.                                                                                                                                                                                                                                                                                                               |
| Offshore Wind Climate Adaptation and Resiliency Study, New York State Energy Research and Development Authority (Weisenfeld et al., 2021) | 2021    | Review of key climate factors for the offshore wind sector and opportunities for climate resilience.                                                                                                                                                                                                                                                                                                                    |
| BEIS' Offshore Energy Strategic Environment Assessment 4 (BEIS, 2022b)                                                                    | 2022    | Observed meteorological conditions for seas around the UK.                                                                                                                                                                                                                                                                                                                                                              |
| IPCC Fifth Assessment Report                                                                                                              | 2014    | Provides a comprehensive assessment of climate change science and defines a set of Representative Concentration Pathways (RCPs), which describe possible future trajectories of atmospheric GHG concentrations based on different socioeconomic and policy assumptions. These RCPs are widely used in climate projection modelling to assess future climate conditions.                                                 |
| Scotland's Marine Assessment (Moffat et al., 2020).                                                                                       | 2020    | <p>Reports on the vision for the (Scottish) seas:</p> <p><i>'clean, healthy, safe, productive, biologically diverse marine and coastal environments, managed to meet the long-term needs of nature and people'.</i></p>                                                                                                                                                                                                 |



| Dataset                                                                                          | Year(s) | Description                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                  |         | The assessment presents, where possible, trends for the period 2014 to 2018 with longer term data presented where this sets the 2014 to 2018 period in a longer-term context.                                                                                    |
| Scottish Government – Keeping Scotland Running: Building Resilience to a Changing Climate (2020) | 2020    | Provides guidance for operators of critical infrastructure on managing climate risks, cascading failures and long-term resilience planning. Particularly relevant to offshore energy infrastructure and grid-connected assets.                                   |
| Adaptation Scotland – Adaptation Capability Framework (2024)                                     | 2024    | Provides an evidence-based framework for assessing adaptive capacity across organizations and sectors. The framework supports structured evaluation of resilience measures, governance and operational readiness relevant to infrastructure projects.            |
| SEPA – Climate Change Allowances for Flood Risk Assessment in Land-Use Planning (SEPA, 2025)     | 2025    | Sets out climate change allowances for rainfall, river flows and coastal flooding to be used in assessments. The guidance informs how projected climate change should be incorporated into exposure and design considerations for flood-related climate hazards. |

1443. No baseline surveys are proposed for the GHG assessment and CCR assessment. However, cross-disciplinary engagement with the Applicant's development team and other relevant EIA chapters will help refine the assessment and identify suitable mitigation measures.

### 17.4.3 Greenhouse Gas Assessment

1444. A GHG assessment evaluates the effect significance of emissions released or avoided by a development based on its alignment with a science-based transition towards net zero and requirements set by international climate commitments, national policies and best industry practice. To contextualise the assessment, national carbon budgets and relevant existing and emerging net zero policies, targets and performance standards will be reviewed and compared against the predicted GHG impacts.
1445. The Scottish Government has its own offshore wind capacity ambitions in support of the UK's national target (discussed in **Table 17.1**), with the award of the ScotWind offshore wind leasing round in Scottish waters by the Crown Estate Scotland in 2022. The Bellrock Project falls within the ScotWind leasing round. ScotWind's objective is to help Scotland achieve its net-zero emissions target by 2045, by granting property rights for the seabed in Scottish waters for new commercial scale offshore wind projects in a way that is fair and transparent. In doing so, ScotWind facilitates and encourages development of the low-carbon energy generation needed to meet the world-leading targets committed to in The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019. The leasing context for the Bellrock Project is discussed further in **Chapter 2: Legislative and Policy Context**.

1446. The Offshore Wind Policy Statement (Scottish Government, 2020c) and the Sectoral Marine Plan for Offshore Wind Energy (Scottish Government, 2020d) include a target to deliver up to 11 GW of offshore wind capacity by 2030 to support Scotland's commitment to net zero by 2045 (Updated Sectoral Marine Plan is expected to be published in autumn 2026). According to the Scottish Energy Statistics Hub, Scotland's operational offshore wind capacity measured around 4.2 GW in June 2025, with an additional 17 GW in planning, awaiting construction or under construction (Scottish Government, 2025b). The latest updates to the Offshore Wind Policy Statement resets the Scottish Government's offshore wind policy ambition to up to 40 GW of new offshore wind capacity by 2040, in addition to the already operational or consented capacity (Scottish Government 2026).
1447. The UK Government has also set out its intention to decarbonise all sectors of the UK economy, including the power sector, through a series of policy frameworks (Updated Sectoral Marine Plan is expected to be published in autumn 2026). This ambition was first articulated within the Clean Growth Strategy (BEIS, 2017), which set out proposals for reducing emissions across the economy. It was subsequently reaffirmed as a commitment within the Offshore Wind Sector Deal (BEIS, 2019), which reinforced the UK Government's aims to advance offshore wind generation as an integral part of a future low-cost, low-carbon and flexible grid system. In light of recent progress, the commitment to 30 GW offshore wind capacity within the Offshore Wind Sector Deal has been superseded by a 40 GW by 2030 target as set out in the Ten Point Plan for a Green Industrial Revolution (HM Government, 2020) and the Net Zero Strategy: Build Back Greener (HM Government, 2021). The UK Government has since increased its offshore wind capacity target to 50 GW by 2030 in the British Energy Security Strategy (2022).
1448. The renewable electricity generated by the Bellrock Project would displace an equivalent amount of electricity which would have been generated using alternative energy sources. The focus of the GHG assessment will be to determine the Bellrock Offshore Transmission Infrastructure's contribution towards Scotland's and the UK's national emission reduction and long-term net zero targets. This will be achieved by comparing the 'Do Nothing' scenario to the emissions avoided as a result of the Bellrock Project's operations.
1449. The 'Do Nothing' scenario will be established for the GHG assessment, which assumes that the Bellrock Project is not constructed, and different future baseline environments based on the energy and climate policies adopted. The approach used by RenewableUK (2025) to calculate avoided emissions uses the operational GHG intensity of electricity generated using "all non-renewable fuels" (i.e. 448 tonnes CO<sub>2</sub> per GW hour electricity (DESNZ, 2025b)). However, the operational GHG intensity of electricity generated by natural gas is lower (382 tonnes CO<sub>2</sub> per GW hour electricity) (DESNZ, 2025b), which provides a more conservative assessment of the emissions avoided by the Bellrock Offshore Transmission Infrastructure. Therefore, to evaluate the impact of the Bellrock Project, it is assumed that the electricity produced displaces generation from 'natural gas' sources, as this is the most common form of new fossil fuel generation plants (DESNZ, 2025a). It is recognised that all new combustion power stations (at or above 300 MW) need to be constructed carbon capture ready. Therefore, to provide a conservative assessment, it will be assumed that the natural gas generating sources will be equipped with carbon capture and storage. A sensitivity analysis will also be undertaken to compare other reasonable alternatives, such as natural gas without carbon capture and storage, to assess the range of possible scenarios and the influence on the impact assessment.

1450. An alternative 'Do Nothing' scenario will also be considered, using long-run marginal emission factors, which would include all forms of generation sources. The models used to derive the long-run marginal factors are subject to a level of uncertainty, influenced by the pace of innovation in the market, technological feasibility, demand levels and investment decisions (DESNZ, 2023b). These uncertainties increase into the 2030s and 2040s, which covers a portion of the time when the Bellrock Project would be operational. They are therefore indicative of what the future electricity mix may look like, rather than being a prescriptive forecast. Additionally, the use of long-run marginal emission factors would be inconsistent with policy and energy transition (or at least contain an internal circularity), as it would present a scenario whereby renewable energy generated by the Bellrock Project appears to be displacing future electricity generation from renewable sources. However, for such future electricity generation to be from renewable sources, then projects such as the Bellrock Project need to be developed. Given this internal circularity, the use of long-run marginal emission factors in a 'Do Nothing' scenario is not proposed to be included in the GHG assessment.
1451. As discussed in **Table 17.1**, the UK has established Carbon Budgets, which provide a legally binding five-year limit for GHG emissions in the UK. There are currently seven UK Carbon Budgets that have been adopted as legislation and will run up to 2042 as outlined in **Table 17.4**. The UK is currently in the fourth Carbon Budget period.

**Table 17.4: UK Carbon Budgets (2008 to 2037)**

| Budget                         | Period       | Carbon Budget Level (Mt CO <sub>2</sub> e) | Reduction Below 1990 Levels |                    |
|--------------------------------|--------------|--------------------------------------------|-----------------------------|--------------------|
|                                |              |                                            | UK Targets                  | Achieved by the UK |
| 1 <sup>st</sup> Carbon Budget  | 2008 to 2012 | 3,018                                      | 25%                         | 30%                |
| 2 <sup>nd</sup> Carbon Budget  | 2013 to 2017 | 2,782                                      | 32%                         | 38%                |
| 3 <sup>rd</sup> Carbon Budget  | 2018 to 2022 | 2,544                                      | 38% by 2020                 | 44%                |
| 4 <sup>th</sup> Carbon Budget  | 2023 to 2027 | 1,950                                      | 52% by 2025                 | -                  |
| 5 <sup>th</sup> Carbon Budget  | 2028 to 2032 | 1,725                                      | 58% by 2030                 | -                  |
| 6 <sup>th</sup> Carbon Budget  | 2033 to 2037 | 965                                        | 78% by 2035                 | -                  |
| 7 <sup>th</sup> Carbon Budget  | 2038 to 2042 | 535                                        | 87% by 2040                 | -                  |
| <b>Net Zero Target by 2050</b> |              |                                            | <b>100%</b>                 | -                  |

1452. Additionally, as discussed in **Table 17.1**, Scotland has also established its own Carbon Budgets, which run up to 2045. There are currently four Scottish Carbon Budgets, enforced through the Climate Change (Scotland) Act 2009 (Scottish Carbon Budgets) Amendment Regulations 2025, which are outlined in **Table 17.5**.

**Table 17.5: Proposed Scottish Carbon Budget (2026 to 2045)**

| Budget                        | Period       | Carbon Budget Level (Mt CO <sub>2</sub> e) | Reduction Below 1990 Levels |
|-------------------------------|--------------|--------------------------------------------|-----------------------------|
| 1 <sup>st</sup> Carbon Budget | 2026 to 2030 | 175                                        | 57%                         |
| 2 <sup>nd</sup> Carbon Budget | 2031 to 2035 | 126                                        | 69%                         |
| 3 <sup>rd</sup> Carbon Budget | 2036 to 2040 | 81                                         | 80%                         |
| 4 <sup>th</sup> Carbon Budget | 2041 to 2045 | 24                                         | 94%                         |

1453. To contextualise the magnitude of GHG emissions reported in the assessment and the evaluation of their effects on climate change, the baseline review will cover the Carbon Budgets and targets relevant to each project phase (construction, O&M, and decommissioning) of the Bellrock Offshore Transmission Infrastructure, as well as recent national emission statistics for Scotland and the UK, the emission contribution of the power sector and the lifecycle GHG intensities of various forms of electricity generation.

#### 17.4.3.1 Blue Carbon

1454. A baseline review of the blue carbon inventory within marine and coastal systems in Scotland and within the Bellrock OFTDA will be undertaken using sources such as the Scottish Parliament and NatureScot's blue carbon publications, publications such as Smeaton et al. (2021a and 2021b) and site-specific information (such as the Bellrock OFTDA environmental survey (see **Chapter 6: Intertidal and Benthic Ecology**)). The blue carbon assessment will be informed by the marine, geology, oceanography and physical processes and benthic ecology chapters in the Bellrock OFTDA EIA Report. This will enable the understanding of the type of blue carbon habitats and geological sedimentary stores present within the Bellrock OFTDA and any potential impact pathways from project activities, such as total sediments released during installation activities.

#### 17.4.4 Climate Change Risk Assessment

1455. The current baseline for the CCR assessment will be defined using historical climate data and meteorological records maintained by the Met Office. Climate averages for the 1991 to 2020 time period will be obtained from the nearest onshore climate station to the Bellrock OFTDA, which is Inverbervie No. 2 (56.852, -2.264), for temperature, precipitation and wind variables (The Met Office, 2023). This will be supplemented with regional climate characteristics (The Met Office, 2016b), based on observations recorded between 1981 and 2010, and baseline information from the Offshore Energy Strategic Environment Assessment 4 (BEIS, 2022b) which provides meteorological conditions at sea for various offshore regions surrounding the UK. The Bellrock OFTDA lies closest to the eastern Scotland climate region and sits within Regional Sea 1.
1456. Climate change projections will be used to characterise the future baseline climate within the CCR assessment study area, with changes to climate variables serving as indications of likely climate hazards. The Met Office's UKCP database provides probabilistic climate change projections for the UK at a spatial resolution of 25 km grid squares, covering the time period of 1961 to 2100.

Probabilistic projections provide a broad range of possible climate outcomes and account for uncertainties present in climate models.

1457. UKCP data uses RCP which depicts future atmospheric GHG concentration based on various emission reduction scenarios. For the CCR assessment, projection data will be obtained for RCP4.5 (intermediate scenario) and RCP8.5 (worst-case scenario) and presented at three probability levels where applicable: 10th percentile, 50th percentile (median) and 90th percentile. In line with best practice (IEMA, 2020), this approach would provide a robust overview of the future baseline climate.
1458. It should be noted that the majority of UKCP data is land-based and does not provide direct coverage of the offshore area in which the Bellrock OfTDA is located. However, to describe projected changes in air temperature, precipitation and wind at the local scale, it is assumed that projections for the grid cell of the landfall for Bellrock OfTDA would be broadly representative of the CCR assessment study area. Marine climate change projections such as changes in sea temperature, sea level, tides and storm surges will be obtained from the Met Office's UKCP Marine Projections and Marine Climate Change Impacts Partnership reports. Where information gaps exist, these will be supplemented using other available literature sources.
1459. Climate change projections are commonly provided as time series data. For the CCR assessment, the data will be processed and presented as climate averages over the selected time slices. It is assumed that these time slices would provide sufficient temporal coverage of the CCR assessment study area. The construction, O&M and decommissioning phases of the Bellrock Offshore Transmission Infrastructure will be segmented into multiyear time slices (typically 20 to 30 year periods), depending on data availability, to illustrate differences in short-term, medium-term and long-term climate change.

## 17.5 Potential Impacts

### 17.5.1 Greenhouse Gas Assessment

1460. Potential impacts considered in the GHG assessment include direct and indirect emissions released as a result of the activities associated with the Bellrock Offshore Transmission Infrastructure during construction, O&M and decommissioning. The provision of renewable energy via the Bellrock Offshore Transmission Infrastructure will also result in avoided emissions by displacing grid electricity which would have otherwise been generated using more GHG-intensive sources.
1461. It should be noted that GHG emissions released or avoided by the Bellrock Offshore Transmission Infrastructure may occur outside its spatial boundary and the UK's territorial boundary, such as upstream activities that result in 'embodied' carbon in materials used for the Bellrock Offshore Transmission Infrastructure. However, as GHG emissions contribute to climate change irrespective of where they are generated and recognising the importance of avoiding the displacement of emissions overseas (commonly referred to as 'carbon leakage') as UK emissions are reduced, these emissions will be included within the Bellrock OfTDA GHG assessment. Consequently, they will be considered in the context of the UK and Scotland's GHG emissions reduction targets and

wider climate ambitions. GHG emission sources in the assessment boundary are detailed in **Section 17.6**.

#### 17.5.1.1 Blue Carbon

1462. Blue carbon emissions from loss of blue carbon stock will be estimated as part of the GHG assessment, where quantitative data on sediment are available, as discussed in **Section 17.7**. Otherwise, a qualitative blue carbon assessment only will be undertaken, which would be provided as a separate section within the GHG assessment chapter of the Bellrock OfTDA EIA Report.

### 17.5.2 Climate Change Risk Assessment

1463. Potential impacts considered in the CCR assessment for construction, O&M and decommissioning of the Bellrock Transmission Infrastructure include extreme weather events and chronic climatic changes with the potential to harm receptors and affect their ability to maintain their function or purpose. A high-level review of direct interdependencies with other critical infrastructure or activities, such as the National Electricity Transmission Network, will also be undertaken to identify the potential for cascading risks and their effects on the Bellrock Offshore Transmission Infrastructure and associated activities. Receptor groups considered in the CCR assessment include:
- Infrastructure receptors such as OfSS(s), OfRCS(s) and cables, equipment, helicopters (if required) and vessels, and temporary structures (refer to **Chapter 3: Project Description** for all assets and equipment);
  - Human receptors such as site personnel; and
  - Environmental receptors such as habitats and species associated with any ecological mitigation and enhancement measures.

### 17.5.3 Embedded Mitigation Measures

1464. Embedded mitigation has been identified, as presented in **Table 17.6** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the IEMA guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
1465. The IEMA guidance (2022) highlights the importance of embedded mitigation in minimising GHG emissions from a proposed development. There is a commitment to follow the IEMA GHG Management Hierarchy, set out in the IEMA guidance (IEMA, 2022), and the Institute of Civil Engineers (ICE) PAS 2080 guidance document (ICE, 2023). The IEMA GHG Management Hierarchy sets out a structure to eliminate, reduce, substitute and compensate such emissions. The GHG assessment will consider mitigation measures which are designed into the Bellrock Offshore Transmission Infrastructure and will identify opportunities for further emission reduction where practicable, in line with the GHG Management Hierarchy, such as measures to minimise

vessel traffic or embodied carbon through the efficient use of materials. In addition, the PAS 2080 guidance document (ICE, 2023) will be reviewed to outline best practice carbon management measures for further consideration.

1466. The design of offshore infrastructure and occupational health and safety requirements provide an inherent degree of climate change readiness and resilience. The CCR assessment will account for the technical requirements of the Bellrock Offshore Transmission Infrastructure, design specifications and operational strategy which are built upon best practice engineering codes and standards in the offshore wind sector, and standard health and safety procedures outlined in relevant management plans. Where likely significant effects are predicted, additional mitigation will be identified from available literature sources and in collaboration with the engineering team to ensure the Bellrock Offshore Transmission Infrastructure is resilient to impacts arising from current extreme weather events and climatic conditions. Accounting for uncertainties in longer-term climate change projections and their implications for the Bellrock Offshore Transmission Infrastructure, adaptive management measures will also be reviewed in line with IEMA's guidance (2020) to ensure mitigation is implemented where and when appropriate.
1467. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process during the EIA process.



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Table 17.6: Embedded Mitigation Measures Relevant to GHG and Climate Change

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                            | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                    |                 |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                                                                                                                                                                                                                                                         | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will support the adoption of measures that contribute to reducing GHG emissions where possible.                                     | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel O&M will support good environmental practice and efficient vessel performance. This will help minimise unnecessary fuel consumption and associated GHG emission from project vessels.                                                           | Tertiary        |
| ✓                          | ✓   | ✓               | Development and implementation of a Development Specification and Layout Plan (DSLPL). A DSLPL will be prepared post-consent to finalise the layout of the Bellrock Offshore Transmission Infrastructure, including the OfSS(s) and OfRCS(s), in accordance with Marine Licence conditions. The DSLPL will be developed in consultation with the Maritime and Coastguard Agency and the Northern Lighthouse Board to ensure the final                                                                                                                                                                                                                                                                                                           | The DSLPL provides a mechanism to refine the final design and layout of the Bellrock Offshore Transmission Infrastructure, supporting consideration of climate resilience within the detailed design and helping to ensure the infrastructure is resilient to current and future climatic conditions through its operational life. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Relevance to Assessment                                                                                                                                                                                                                                                                                          | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                  |                 |
|                            |     |                 | layout is compatible with navigational safety requirements, including potential search and rescue (SAR) activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                  |                 |
| ✓                          | ✓   | X               | Compliance with Marine Guidance Note 654 and development and implementation of an Emergency Response Cooperation Plan (ERCoP). The Applicant will ensure compliance with Marine Guidance Note 654 and its annexes, where applicable, including consultation with the Maritime and Coastguard Agency, completion of a SAR checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support SAR and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities. | Implementation of the ERCoP and compliance with Marine Guidance Note 654 will ensure appropriate procedures are in place to respond effectively to emergency situations. This will support the resilience of the Bellrock Offshore Transmission Infrastructure.                                                  | Tertiary        |
| X                          | X   | ✓               | Development of, and adherence to, a Decommissioning Programme.<br><br>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The Decommissioning Programme provides a framework for planning and undertaking decommissioning in a safe and orderly manner, incorporating consideration of current and future climatic conditions to help ensure decommissioning remains resilient to climate-related risks, including extreme weather events. | Tertiary        |
| ✓                          | X   | X               | Development of, and adherence to, a Construction Method Statement.<br><br>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | The Construction Method Statement provides a framework for planning and undertaking construction works in a controlled and coordinated manner, incorporating consideration of current and future climatic conditions to inform risk assessments, safe working practices and                                      | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                       | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                               |                 |
|                            |     |                 | measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.                                                                                                                                                                                            | construction programming, helping to minimise climate-related risks to personnel, plant, equipment and programme delivery.                                                                                                                                                                                                                                    |                 |
| X                          | ✓   | X               | Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure). This will include but not be limited to surveys of subsea infrastructure.<br><br>These will be included in the Operation and Maintenance Plan. | Regular and periodic inspections and maintenance support the long-term integrity and performance of the Bellrock Offshore Transmission Infrastructure, helping to identify and respond to the effects of current and future climatic conditions and maintain resilience throughout the operational life of the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | X               | Should any SF <sub>6</sub> containing equipment be required, a gas leakage monitoring and detection system will be implemented to minimise operational leakages. In the rare event of a leakage occurring, the fault will be repaired as soon as reasonably practicable.<br><br>The Bellrock Project will consider SF <sub>6</sub> free electrical equipment during detailed design and procurement where alternatives are deemed suitable.                          | Implementation of gas leakage monitoring and detection systems will minimise operational releases of SF <sub>6</sub> and facilitate rapid repair of any faults. Consideration of SF <sub>6</sub> free alternatives during detailed design and procurement will further reduce the potential for GHG emissions associated with electrical equipment.           | Tertiary        |
| ✓                          | ✓   | ✓               | The Applicant will implement an Environmental Management System adhering to International Organization for Standardization (ISO) 14001:2015 (ISO, 2015), which includes a requirement for the reduction of GHG emissions.<br><br>The implementation of the Environmental Management System will support the Bellrock Project to                                                                                                                                      | Implementation of an Environmental Management System aligned with ISO 14001 will provide a structured approach to identifying, managing and reducing GHG emissions throughout construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure. This will support the                                                              | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                   | Relevance to Assessment                                                             | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                               |                                                                                     |                 |
|                            |     |                 | systematically identify, manage and reduce its GHG emissions. | delivery of continual environmental improvement and emissions reduction objectives. |                 |

## 17.6 Scoping of Potential Impacts

### 17.6.1 Greenhouse Gas Assessment

1468. The scoping exercise for the GHG assessment identifies emission sources which are included/excluded from the assessment boundary and is presented in accordance with the PAS 2080 lifecycle modules.
1469. **Table 17.7** shows the GHG emission sources which are proposed to be scoped in and scoped out of the Bellrock OfTDA EIA Report.

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**Table 17.7: Potential Greenhouse Gas Impacts Scoped In and Scoped Out of the Bellrock OfTDA EIA Report**

| Phase                                                                        | PAS 2080 Lifecycle Module                                                            | Potential Emission Sources                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Scoping Outcome (Scoped In/Scoped Out) |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Site Preparation/Pre-construction (including Product Stage) and Construction | A0: Preliminary Studies, Design and Engineering                                      | <p>Emissions from design and engineering activities are not likely to be significant. It is anticipated that most works will be office-based.</p> <p>However, pre-construction surveys and activities such as seabed preparation will be considered where possible. Further details on /site preparation/pre-construction works are provided in <b>Chapter 3: Project Description</b>.</p> <p>No onshore land use change due to the offshore location of the Bellrock OfTDA (from MHWS to the eastern boundary of the Bellrock WFDA, located 120 km east of Stonehaven), therefore no impacts to terrestrial carbon sequestration are anticipated.</p> | <b><u>Scoped in</u></b>                |
|                                                                              | A1: Raw Materials Supply<br>A2: Transport to Manufacturing Site<br>A3: Manufacturing | <p>Embodied carbon in materials used during the construction of the Offshore Transmission Infrastructure.</p> <p>Embodied carbon in materials in this assessment are emissions arising from the raw material extraction and manufacturing of materials used for the Bellrock Offshore Transmission Infrastructure.</p>                                                                                                                                                                                                                                                                                                                                 | <b><u>Scoped in</u></b>                |
|                                                                              | A4: Transport to/from Construction Site                                              | Fuel consumption from the movement of materials, equipment, offshore waste and personnel to/from the Bellrock OfTDA using for example marine vessels and helicopters (if required). This will include vessels travelling from their origin location to the port(s) and between the port(s) and the Bellrock OfTDA.                                                                                                                                                                                                                                                                                                                                     | <b><u>Scoped in</u></b>                |
|                                                                              | A5: Construction                                                                     | <p>Fuel and electricity consumption associated with plant and equipment use during the construction of the Bellrock Offshore Transmission Infrastructure.</p> <p>Seabed/habitat disturbance or loss due to construction of the Bellrock Offshore Transmission Infrastructure such installation of the offshore export cables, resulting in impacts to blue carbon, which is a term used to define carbon captured by marine and coastal ecosystems.</p>                                                                                                                                                                                                | <b><u>Scoped in</u></b>                |

| Phase | PAS 2080 Lifecycle Module                                             | Potential Emission Sources                                                                                                                                                                                                                                                                                                                                                                                                                         | Scoping Outcome (Scoped In/Scoped Out) |
|-------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| O&M   | B1: Use                                                               | Direct emissions from components and materials installed as part of the infrastructure, such as SF <sub>6</sub> used in switchgear.                                                                                                                                                                                                                                                                                                                | <b><u>Scoped in</u></b>                |
|       | B2: Maintenance<br>B3: Repair<br>B4: Replacement<br>B5: Refurbishment | Fuel and electricity consumption associated with transport (marine vessels and road vehicles if applicable) and plant and equipment use during the O&M phase.<br><br>Embodied carbon in materials used in spare parts during repair and replacement events.<br><br>Seabed/habitat disturbance or loss due to the presence of the Bellrock Offshore Transmission Infrastructure over the operational lifetime, resulting in impacts to blue carbon. | <b><u>Scoped in</u></b>                |
|       | D: Benefits and Loads beyond the Infrastructure System                | Avoided emissions from the provision of renewable energy to the National Electricity Transmission System.                                                                                                                                                                                                                                                                                                                                          | <b><u>Scoped in</u></b>                |
|       | B6: Operational Energy Use                                            | The operational energy requirements for the Bellrock Offshore Transmission Infrastructure are assumed to be delivered entirely by the Bellrock Project's generation.                                                                                                                                                                                                                                                                               | <b><u>Scoped out</u></b>               |
|       | B7: Operational Water Use                                             | The operational water use for the Bellrock Offshore Transmission Infrastructure is anticipated to be negligible and therefore emissions are not likely to be significant.                                                                                                                                                                                                                                                                          | <b><u>Scoped out</u></b>               |
|       | B8: User's Utilisation of Infrastructure                              | Emissions from user's utilisation are not relevant to the Bellrock OFTDA. End users will consume the electricity generated by the Bellrock Project but will not directly interact with the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                          | <b><u>Scoped out</u></b>               |
|       |                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        |



| Phase                         | PAS 2080 Lifecycle Module                                                                             | Potential Emission Sources                                                                                                                                                                                                      | Scoping Outcome (Scoped In/Scoped Out) |
|-------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Decommissioning (End-of-Life) | C1: Deconstruction<br>C2: Transport to/from Site<br>C3: Waste Processing for Recovery<br>C4: Disposal | Emissions associated with the decommissioning of the Bellrock Offshore Transmission Infrastructure, transport to landfill or other end destination and the treatment and processing for reuse, recycling, recovery or disposal. | <b><u>Scoped in</u></b>                |

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## 17.6.2 Climate Change Risk Assessment

1470. The scoping exercise for the CCR assessment identifies climate hazards, selected from the C40 Taxonomy, and potential climate change impacts which may result in likely significant effects to the Bellrock Offshore Transmission Infrastructure.
1471. **Table 17.8** outlines the climate hazards which are proposed to be scoped in and scoped out of the Bellrock OfTDA EIA Report and their potential for climate change impacts to the Bellrock Offshore Transmission Infrastructure.

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**Table 17.8: Potential Climate Change Risk Impacts Scoped In and Scoped Out of the Bellrock OfTDA EIA Report**

| Climate Hazard                                                      | Type of Climate Hazard  | Potential Climate Change Impacts to the Bellrock OfTDA                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Scoping Outcome (Scoped In/Scoped Out) |                   |                   |
|---------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------|-------------------|
|                                                                     |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Construction                           | O&M               | Decommissioning   |
| Extreme precipitation (e.g. rain, snow, hail, fog)                  | Extreme weather event   | Delays to programme such as inability to undertake construction or maintenance activities.                                                                                                                                                                                                                                                                                                                                                                                                                           | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Storms and extreme winds (e.g. gales, storm surge, thunderstorms)   | Extreme weather event   | Physical damage to the Bellrock Offshore Transmission Infrastructure, equipment, vessels and helicopters.                                                                                                                                                                                                                                                                                                                                                                                                            | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Extreme temperatures (e.g. cold and heat waves)                     | Extreme weather event   | Increased maintenance, repair and replacement requirements due to faster deterioration of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                                                         | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Changes in marine climate and extreme weather events                | Chronic climatic change | Reduced functioning from operational downtime of the Bellrock Offshore Transmission Infrastructure.                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Sea level rise                                                      | Chronic climatic change | Occupational health and safety impacts to project personnel.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Changes in sea conditions (e.g. waves and currents, salinity)       | Chronic climatic change |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>Scoped in</u>                       | <u>Scoped in</u>  | <u>Scoped in</u>  |
| Flooding (e.g. surface water, groundwater, coastal, river flooding) | Extreme weather event   | These climate hazards only apply to onshore areas landward of MHWS. The Bellrock OfTDA is located offshore (from MHWS to the eastern boundary of the Bellrock WFDA, located 120 km east of Stonehaven), and Bellrock Offshore Transmission Infrastructure within the intertidal area will be installed via a trenchless technique and therefore buried underground. No climate change impacts associated with flooding, wildfires, land changes or water stress are expected to arise in the Bellrock OfTDA. Onshore | <u>Scoped out</u>                      | <u>Scoped out</u> | <u>Scoped out</u> |
| Wildfires                                                           | Extreme weather event   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>Scoped out</u>                      | <u>Scoped out</u> | <u>Scoped out</u> |
| Mass movements (e.g. earthquakes, landslides)                       | Extreme weather event   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>Scoped out</u>                      | <u>Scoped out</u> | <u>Scoped out</u> |
| Land changes (e.g. saltwater intrusion, subsidence)                 | Chronic climatic change |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>Scoped out</u>                      | <u>Scoped out</u> | <u>Scoped out</u> |

| Climate Hazard                               | Type of Climate Hazard  | Potential Climate Change Impacts to the Bellrock OFTDA                                                                                                                                                                                                                                                                                                                             | Scoping Outcome (Scoped In/Scoped Out) |                          |                          |
|----------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------|--------------------------|
|                                              |                         |                                                                                                                                                                                                                                                                                                                                                                                    | Construction                           | O&M                      | Decommissioning          |
| Water stress (e.g. drought, desertification) | Chronic climatic change | Transmission Infrastructure will be considered within the Bellrock OnTDA Scoping Report.                                                                                                                                                                                                                                                                                           | <b><u>Scoped out</u></b>               | <b><u>Scoped out</u></b> | <b><u>Scoped out</u></b> |
| Ocean acidification                          | Chronic climatic change | Although earthquakes can occur offshore, the UK Continental Shelf does not sit on a major fault line between tectonic plates and primarily experiences low magnitude earthquakes annually, with moderate earthquakes as rare occurrences. Furthermore, it is considered unlikely that climate change will exacerbate the frequency or severity of submarine earthquakes in the UK. | <b><u>Scoped out</u></b>               | <b><u>Scoped out</u></b> | <b><u>Scoped out</u></b> |

### 17.6.3 Bellrock Project GHG Whole Project Assessment

1472. The Bellrock Project GHG whole project assessment follows its own methodology and differs from that set out in **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)**. The assessment is carried out for the Bellrock Project as a whole.

#### 17.6.3.1 Greenhouse Gas Assessment

1473. The GHG whole project assessment for the Bellrock Project (i.e., the Bellrock OfTDA, OnTDA and WFDA), will build on the GHG whole project assessment presented in the **Bellrock WFDA EIA Report**. This GHG whole project assessment will evaluate the net contribution of the Bellrock Project as a whole to climate change, through an estimation of GHG emissions arising from infrastructure associated with all component Bellrock parts (Bellrock OfTDA, OnTDA and WFDA). Although the assessments presented in each EIA Report will remain valid, this iterative approach will be undertaken allowing for up-to-date information (if required) to be incorporated within each submission. Further details are discussed in **Section 17.7.1.3**.

##### 17.6.3.1.1 Blue Carbon

1474. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may influence the magnitude of impacts and significance of effects identified for blue carbon receptors. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.
1475. No pathway-based interactions are anticipated between the Bellrock OfTDA and the Bellrock OnTDA for blue carbon. The Bellrock OfTDA Whole Project Assessment will therefore focus on the impacts identified for the Bellrock Offshore Transmission Infrastructure and consider whether interactions with the Bellrock Wind Farm Infrastructure influence the magnitude of those impacts and the significance of the resulting effects.

#### 17.6.3.2 Climate Change Risk Assessment

1476. The CCR assessment considers the vulnerability and resilience of the Bellrock Offshore Transmission Infrastructure to climate change impacts. Climate vulnerability effects and impacts are specific to the Development Area and will not result in impacts to or from a neighbouring Development Area. As such, no additional consideration of Bellrock Whole Project Assessment is required for the CCR assessment.

### 17.6.4 Potential Cumulative Effects

#### 17.6.4.1 Greenhouse Gas Assessment

1477. The receptor for the GHG assessment is the global atmosphere. GHG emissions, wherever they occur, have the potential to contribute to climate change, and therefore their effects are global and cumulative by nature. The IEMA guidance (2022) states that the effects of GHG emissions from specific cumulative projects should not be individually assessed, as there is no basis for selecting

which projects to assess cumulatively over any other. As outlined in **Section 17.1** and **Section 17.6.3**, a GHG whole project assessment will evaluate the net contribution of the Bellrock Project, including the Bellrock WFDA and Bellrock OnTDA, as a whole to atmospheric GHG concentrations in the global atmosphere. As such, no additional consideration of cumulative effects with other projects or plans is required for the GHG assessment, and cumulative effects have therefore been **scoped out** of the EIA for the GHG assessment.

#### **17.6.4.1.1 Blue Carbon**

1478. For the blue carbon assessment, the Cumulative Effects Assessment (CEA) will consider the impacts arising from the Bellrock Offshore Transmission Infrastructure and associated activities within the Bellrock OfTDA, as well as cumulatively with other relevant plans, project and activities. The CEA will be undertaken in line with the general methodology, detailed in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**, drawing on the CEA in the intertidal and benthic ecology assessment.

#### **17.6.4.2 Climate Change Risk Assessment**

1479. The CCR assessment considers the vulnerability and resilience of the Bellrock Offshore Transmission Infrastructure to climate change impacts. Climate vulnerability effects and impacts are specific to the development and will not result in impacts to or from a neighbouring development. As such, no additional consideration of cumulative effects is required for the CCR assessment, and cumulative effects have therefore been **scoped out** of the EIA for the CCR assessment.

### **17.6.5 Potential Transboundary Effects**

#### **17.6.5.1 Greenhouse Gas Assessment**

1480. As the receptor for the GHG assessment is the global atmosphere, GHG impacts are transboundary by nature. Emissions considered in the GHG assessment will be contextualised using the relevant UK carbon budgets and national net zero targets, which have been established in accordance with international climate commitments such as the UK's NDC under the Paris Agreement (2015). As such, no additional assessment of transboundary effects is required for the GHG assessment and transboundary effects are therefore **scoped out** of the EIA for the GHG assessment.

##### **17.6.5.1.1 Blue Carbon**

1481. For the blue carbon assessment, as with the intertidal and benthic ecology and marine geology, oceanography and physical processes assessments, there is no potential for impacts on transboundary receptors, and therefore, transboundary effects are proposed to be **scoped out** of the EIA for the blue carbon assessment.

#### **17.6.5.2 Climate Change Risk Assessment**

1482. It is not relevant to assess transboundary effects relating to CCR, as the assessment focuses on the effects of climate change on the Bellrock Offshore Transmission Infrastructure. Therefore, transboundary effects are **scoped out** of the EIA for the CCR assessment.



### 17.6.6 Summary of Potential Impacts

1483. A summary of potential impacts scoped in and out from further assessment in the Bellrock OfTDA EIA Report is provided in **Table 17.9**.

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**Table 17.9: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Climate Change**

| Potential Impact                                       | Receptor(s)                                                                                                       | Description of Potential Effects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Scoped In or Scoped Out? (✓ or X) |     |                 |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----|-----------------|
|                                                        |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Construction                      | O&M | Decommissioning |
| GHG Assessment                                         |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |     |                 |
| Whole lifecycle GHG emissions                          | Global atmosphere                                                                                                 | Increased GHG concentrations in the global atmosphere, contributing to climate change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓                                 | ✓   | ✓               |
| Bellrock Project GHG Whole Project Assessment          | Global atmosphere                                                                                                 | Increased GHG concentrations in the global atmosphere, contributing to climate change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ✓                                 | ✓   | ✓               |
| Cumulative effects                                     | Global atmosphere                                                                                                 | Increased GHG concentrations in the global atmosphere, contributing to climate change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | X                                 | X   | X               |
| Transboundary effects                                  | Global atmosphere                                                                                                 | Increased GHG concentrations in the global atmosphere, contributing to climate change.                                                                                                                                                                                                                                                                                                                                                                                                                                                                | X                                 | X   | X               |
| CCR Assessment                                         |                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |     |                 |
| Vulnerability and resilience to climate change impacts | Bellrock Offshore Transmission Infrastructure, human and ecological receptors associated with the Bellrock OFTDA. | <p>Delays to programme such as inability to undertake construction or maintenance activities.</p> <p>Physical damage to the Bellrock Offshore Transmission Infrastructure, equipment, vessels and helicopters.</p> <p>Increased maintenance, repair and replacement requirements due to faster deterioration of the Bellrock Offshore Transmission Infrastructure.</p> <p>Reduced functioning from operational downtime of the Bellrock Offshore Transmission Infrastructure.</p> <p>Occupational health and safety impacts to project personnel.</p> | ✓                                 | ✓   | ✓               |

| Potential Impact                        | Receptor(s)                                                                                                       | Description of Potential Effects | Scoped In or Scoped Out? (✓ or X) |     |                 |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------|-----|-----------------|
|                                         |                                                                                                                   |                                  | Construction                      | O&M | Decommissioning |
| Bellrock OfTDA Whole Project Assessment | Bellrock Offshore Transmission Infrastructure, human and ecological receptors associated with the Bellrock OfTDA. | None                             | X                                 | X   | X               |
| Cumulative effects                      | Bellrock Offshore Transmission Infrastructure, human and ecological receptors associated with the Bellrock OfTDA. | None                             | X                                 | X   | X               |
| Transboundary effects                   | Bellrock Offshore Transmission Infrastructure, human and ecological receptors associated with the Bellrock OfTDA. | None                             | X                                 | X   | X               |

## 17.7 Proposed Approach to Impact Assessment

### 17.7.1 Greenhouse Gas Assessment

1484. The GHG assessment will be undertaken in accordance with the following guidance documents:
- Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2022);
  - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (World Resources Institute and World Business Council for Sustainable Development, 2015);
  - PAS 2080: Carbon Management in Buildings and Infrastructure (British Standards Institution, 2023);
  - Port Emissions Toolkit (Global Maritime Energy Efficiency Partnerships Project, 2018); and
  - Offshore Wind Industry Product Carbon Footprinting Guidance (Carbon Trust, 2026).
1485. The GHG assessment for the Bellrock OfTDA EIA Report will be structured as follows:
- GHG emissions from the construction of the Bellrock Offshore Transmission Infrastructure, including upstream embodied carbon emissions;
  - GHG emissions from the O&M of the Bellrock Offshore Transmission Infrastructure;
  - Avoided GHG emissions from the provision of renewable energy into the National Electricity Transmission System during the operation of the Bellrock Offshore Transmission Infrastructure;
  - GHG emissions from decommissioning of the Bellrock Offshore Transmission Infrastructure;
  - Blue carbon assessment;
  - A summary of lifecycle emissions of the Bellrock Offshore Transmission Infrastructure across the construction, O&M and decommissioning phases; and
  - Combined emissions of the Bellrock Offshore Transmission Infrastructure, Wind Farm Infrastructure and Onshore Transmission Infrastructure and associated activities to establish the net GHG emissions of the Bellrock Project as a whole.
1486. GHG emissions will be calculated using a standard calculation-based methodology, which involves multiplying activity data supplied by the Applicant with the representative emission factors, and where applicable, calorific, load and global warming potential (GWP) factors. Industry benchmarks and assumptions based on professional judgment will be used where data gaps exist. The data for quantifying end-of-life emissions during decommissioning and emissions from spare parts used during repair and replacement events will be obtained from industrial or academic literature averages, with any assumptions clearly stated.

### 17.7.1.1 Assessment Criteria

1487. The receptor for the GHG assessment is defined as the global atmosphere. The receptor's sensitivity will be characterised as high, given that any net reduction of GHG emissions will support decarbonisation efforts in line with national and international climate commitments.
1488. The magnitude of impact is not defined, as the significance of effect for the GHG assessment is not determined by the magnitude of emissions alone (IEMA, 2022). However, GHG emission values (both in terms of emissions released and avoided) will be calculated and expressed as tonnes of CO<sub>2</sub>e to account for differences in GWP between GHGs. GWP factors will be obtained from the most recent IPCC Assessment Report 100-year estimates. GHG emissions will be calculated using a lifecycle approach in alignment with the PAS 2080 modules and The Carbon Trust guidance, and presented both by project phase and over the whole lifecycle.
1489. Significance criteria for the assessment will be adapted from IEMA's guidance (2022), which recognises that: 'when evaluating significance, all new GHG emissions contribute to a negative environmental effect. However, some projects will replace existing development or baseline activity that have higher GHG profiles. The significance of a project's emissions should therefore be based on its net impacts, which may be positive, negative or negligible'.
1490. The IEMA guidance provides relative significance descriptions to assist assessments of GHG emissions in an EIA context. Section VI of the updated guidance (IEMA, 2022) describes five distinct levels of significance (major adverse, moderate adverse, minor adverse, negligible and beneficial), which are not based solely on whether a project emits GHG emissions, but on how a development makes a relative contribution towards achieving a science-based transition towards net zero. For the purposes of the EIA, major adverse, moderate adverse and beneficial effects will be considered as significant.
1491. To assist in evaluating significance of the GHG impacts of the Bellrock Offshore Transmission Infrastructure, comparisons to the UK and Scotland Carbon Budgets and relevant existing and emerging net zero policies, targets and performance standards will be undertaken. The assessment will conclude whether and how the Bellrock Offshore Transmission Infrastructure (as part of the Bellrock Project) contributes to or undermines the UK's and Scotland's emission reduction efforts and trajectory towards net zero. This will be carried out based on the GHG assessment for the Bellrock Project detailed in **Section 17.7.1.3**. Additional parameters will be calculated to contextualise the predicted carbon benefits where appropriate, including the GHG intensity of electricity generated (RenewableUK, 2025).

### 17.7.1.2 Blue Carbon Assessment

1492. The approach for the blue carbon assessment and specifically if the assessment will be qualitative or quantitative, will be assessed through the review of available public data sources and site-specific information (such as the Bellrock OfTDA environmental survey (see **Chapter 6: Intertidal and Benthic Ecology**)). If information, such as the blue carbon stock or sequestration rate of each habitat or sediment type, is publicly available to enable a quantitative assessment this will be included as one of the emissions sources associated with the Bellrock Offshore Transmission Infrastructure within the GHG assessment.

1493. The IPCC (IPCC, 2013) has determined three tiers of detail in carbon inventories, adapted from the Global Observation of Forest and Land Cover Dynamics (2009) and presented in **Table 17.10**, based on the degree of certainty or accuracy of a carbon stock inventory.

**Table 17.10: Tiers that may be used to Assess Carbon Emission Factors**

| Tier | Requirements                                                                                            | Details                                                                                                                                                                                                                                                                                                                                                       |
|------|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | IPCC default factors.                                                                                   | Tier 1 assessments have the least accuracy and certainty as they are based on simplified assumptions and published IPCC default values for activity data and emissions factors. Tier 1 assessments have a large error range of +/- 50% for aboveground pools and +/- 90% for the variable soil carbon pools.                                                  |
| 2    | Country-specific data for key factors.                                                                  | Tier 2 assessments include some country or site-specific data and therefore have increased accuracy and resolution. For example, using mean carbon stock data for different ecosystem within the country.                                                                                                                                                     |
| 3    | Detailed inventory of key carbon stocks, repeated measurements of key stocks through time or modelling. | Tier 3 assessments require highly specific data of the carbon stocks in each targeted ecosystem or land use area, and repeated measurements of key carbon stocks through time to provide estimates of change or flux of carbon into or out of the area. Note that estimates of carbon flux can be provided through direct field measurements or by modelling. |

1494. If the assessment is qualitative, it will be presented as a separate section within the GHG chapter of the Bellrock OfTDA EIA Report, and a matrix-based approach consistent with the wider EIA methodology will be adopted to assess effects.
1495. If quantitatively assessed, emission estimates of blue carbon will be included in the lifecycle emissions assessment of the Bellrock Offshore Transmission Infrastructure as outlined in **Table 17.7**, and the effect significance will be evaluated alongside other emission sources and the avoided emissions associated with the Bellrock Offshore Transmission Infrastructure. If qualitatively assessed, the sensitivity of receptors identified within the study area will be defined based on the habitat or sediment type and their ability to accommodate, adapt or recover from changes in the environment. The magnitude of the impact will be determined based on the spatial extent, duration, frequency and intensity of changes from the baseline conditions, building on the assessment conducted for intertidal and benthic ecology. Blue carbon is not currently represented in the UK GHG inventory (CCC, 2025a); therefore, the loss of blue carbon will be compared to the carbon stocks in the surficial sediments of Scotland, in place of the Carbon Budgets.

### 17.7.1.3 Assessment of the Bellrock Project as a Whole

1496. To evaluate the net contribution of the Bellrock Project to climate change, an assessment referred to as the “Bellrock Project GHG Whole Project Assessment” for GHG emissions will be undertaken. The GHG whole project assessment will comprise of:

- GHG emissions from the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure, which will be calculated in the GHG Assessment and presented in the Bellrock OfTDA EIA Report;
- GHG emissions from the construction, O&M and decommissioning of the Bellrock Wind Farm Infrastructure, as presented in the **Bellrock WFDA EIA Report**; and
- An indicative estimate of GHG emissions from the construction, O&M and decommissioning of the Bellrock Onshore Transmission Infrastructure, which will be subject to a separate consent application and EIA Report.

1497. The study area for the Bellrock Project GHG whole project assessment will encompass all GHG emitting activities, including avoided emissions, associated with the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure, Wind Farm Infrastructure and Onshore Transmission Infrastructure combined.
1498. An indicative estimate of lifecycle GHG emissions associated with the Bellrock Onshore Transmission Infrastructure will be established using project assumptions on likely emission sources available at the time of assessment, and industry benchmarks from literature where relevant, and building on the estimate established in the **Bellrock WFDA EIA Report** (Bellrock Offshore Wind Farm Limited, 2026). The indicative emissions estimate associated with the Bellrock Onshore Transmission Infrastructure will be combined with the calculated lifecycle emissions for the Bellrock Offshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure to determine the likely total emissions for the Bellrock Project. To evaluate the overall effect significance of the Bellrock Project, the assessment criteria presented in **Section 17.7.1.1** will also be used for the Bellrock Project GHG whole project assessment.
1499. The Bellrock Project GHG whole project assessment, as noted in **Section 17.1**, will be presented in the Bellrock OfTDA EIA Report, which will be an updated version of the previous assessment submitted within the **Bellrock WFDA EIA Report**. Although the assessments presented in each EIA Report will remain valid, this iterative approach will be undertaken allowing for up-to-date information (if required) to be incorporated within each submission.

## 17.7.2 Climate Change Risk Assessment

1500. The CCR assessment and subsequent resilience assessment would use sector-specific guidance and literature to determine the likely climate hazards, considering data included in the UKCP18 climate database. The CCR assessment would use the output from other topics, such as the Flood Consequence Assessment, to provide an assessment of the vulnerability of the Bellrock Offshore Transmission Infrastructure to climate change.
1501. The methodology for the assessment would be informed by IEMA guidance, EIA Guide to: Climate Change Resilience and Adaptation (IEMA, 2020) and the Natural Resources Wales guidance, CCR Assessment Framework for Public Services Boards (Natural Resources Wales, 2023). As the CCR assessment considers climate change impacts on the Bellrock Offshore Transmission Infrastructure, as opposed to the impacts of the Bellrock Offshore Transmission Infrastructure on other receptors, the assessment methodology differs from the general EIA approach presented in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**.

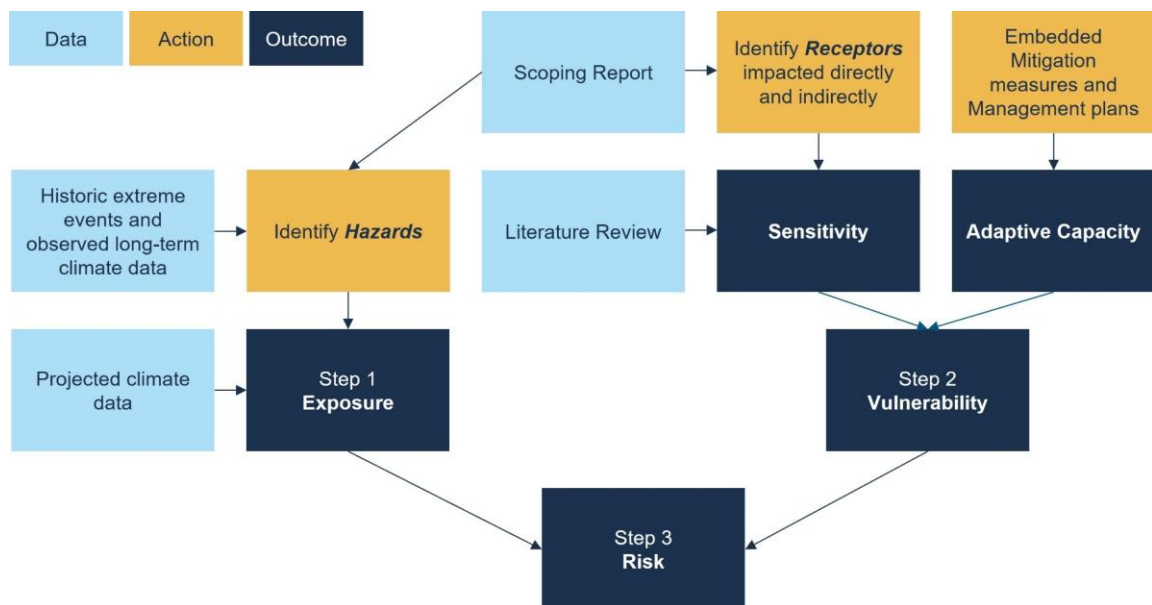


1502. A three-step methodology is adopted for the CCR assessment in line with industry good practice for assessments of CCRs:

- First, relevant future climate *Hazards* are identified using historic climate data and climate change projections, and the exposure of the Bellrock Offshore Transmission Infrastructure is assessed for the construction, O&M and decommissioning stages;
- Second, the *Vulnerability* of project *Receptors* is evaluated by considering their *Sensitivity* to climate *Hazards* and their *Adaptive Capacity*, taking account of embedded design and management measures; and
- Finally, *Exposure* and *Vulnerability* are combined to determine the climate-related *Risks* and to confirm whether additional adaptation measures are required.

1503. The step-by-step approach undertaken for the CCR assessment is set out in **Plate 17.1**.

**Plate 17.1: Three-step CCR Assessment Methodology**



## 17.8 Scoping Questions to Consultees

1504. The following questions are posed to consultees to help them frame and focus their response to the climate change scoping exercise, which will in turn inform the EIA:

- Do you agree that all the relevant data sources have been identified in **Section 17.4.2**?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 17.2**?
- Do you agree with the proposed study areas as presented in **Section 17.4.1**?
- Do you agree that the data sources will be sufficient to inform the Bellrock OfTDA EIA baseline?
- Do you agree that all receptors and potential impacts have been identified in **Section 17.5**?
- Do you agree with the GHG emission sources that have been scoped in/out of the Bellrock OfTDA EIA?
- Do you agree with the climate hazards and resulting climate change impacts that have been scoped in/out of the Bellrock OfTDA EIA?
- Do you agree with the proposed methodology for the Bellrock OfTDA GHG assessment, the iterative approach to the Bellrock Project GHG whole project assessment, and the blue carbon assessment?
- Do you agree with the proposed methodology for the Bellrock OfTDA CCR Assessment?
- Do you have any other matters or information sources that you wish to present?

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# 18 Offshore Air Quality

## 18.1 Introduction

1505. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts associated with the construction, operation and maintenance (O&M), and decommissioning of the Bellrock Offshore Transmission Infrastructure on offshore air quality.
1506. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1507. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1508. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1509. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1510. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on air quality receptors within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
1511. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 11: Shipping and Navigation;**
  - **Chapter 17: Climate Change;** and
  - **Chapter 19: Major Accidents and Disasters.**
1512. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

## 18.2 Legislation, Policy and Guidance

1513. **Table 18.1** identifies the key legislation and policy relevant to the offshore air quality assessment. It sets out the framework for informing the assessment of the potential impacts and subsequent effects on offshore air quality receptors. Overarching legislation and policy context is provided in **Chapter 2: Legislative and Policy Context**.

**Table 18.1: Legislation, Policy and Guidance Relevant to the Offshore Air Quality Assessment**

| Relevant Legislation, Policy and Guidance                                                                    | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                      |
| Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL)                 | MARPOL is the main international convention covering prevention of pollution of the marine environment by ships. Annex VI 'Prevention of Air Pollution from Ships' of MARPOL sets regulations for the prevention of air pollution from ships, including setting limits on sulphur and nitrogen oxide (SO <sub>x</sub> and NO <sub>x</sub> ) emissions and designating Emission Control Areas (ECAs). |
| Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2008 and (Amendment) Regulations 2021 | The regulations transpose the International Marine Organization (IMO) international air pollution standards into United Kingdom law, implementing several air quality measures to control SO <sub>x</sub> and NO <sub>x</sub> emissions.                                                                                                                                                             |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                             | Relevance to the Assessment                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Directive (European Union (EU)) 2016/802 of the European Parliament relating to a reduction in the sulphur content of certain liquid fuels                                                                                            | The purpose of this Directive is to reduce the emissions of sulphur dioxide resulting from the combustion of certain types of liquid fuels and thereby to reduce the harmful impacts of such emissions on man and the environment.                                      |
| Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the Reduction of National Emissions of Certain Atmospheric Pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC | EU legislation which delegates emission reduction commitments for nitrogen oxides (NO <sub>x</sub> ), sulphur dioxide (SO <sub>2</sub> ), non-methane volatile organic compounds, ammonia (NH <sub>3</sub> ), particulate matter 2.5 for 2020 to 2029 and 2030 onwards. |
| <b>Policy</b>                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                         |
| Cleaner Air for Scotland 2. Towards a Better Place for Everyone (Scottish Government, 2021)                                                                                                                                           | The air quality strategy for Scotland, which sets out the Scottish Government's air quality policy framework to improve air quality to protect human health between 2021 and 2026.                                                                                      |

## 18.3 Consultation

1514. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team (MD-LOT), Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package outlined the proposed approach to offshore air quality for the Bellrock OfTDA EIA, including the conclusion that offshore air quality impacts were anticipated to be negligible and the justification for scoping offshore air quality out of the Bellrock EIA. No consultation feedback on offshore air quality was received. No other consultation relevant to offshore air quality has taken place to date.

## 18.4 Existing Environment

1515. The primary source of offshore atmospheric emissions is likely to be from exhaust emissions associated with vessel activity generated by the construction, O&M and decommissioning of Bellrock Offshore Transmission Infrastructure. Typical pollutants related to vessel emissions include NO<sub>x</sub>, particulate matter, and SO<sub>2</sub>.
1516. The IMO has enacted regulations to reduce vessel emissions under Annex VI of MARPOL. From 1 January 2020, the IMO adopted a global limit on sulphur emissions from vessels known as the 'IMO 2020', which restricts the sulphur content of marine fuel oil to 0.5% mass by mass (m/m), which is a reduction improvement from the previous limit of 3.5%. The IMO 2020 would lead to a 77% reduction in overall SO<sub>x</sub> emissions from vessels, which is equivalent to an annual reduction of around 8.5Mt SO<sub>x</sub> (IMO, 2019).

1517. In addition, the North Sea is a designated ECA under the MARPOL Convention for SO<sub>x</sub> and NO<sub>x</sub>, which have been in effect since November 2007 and January 2021, respectively (IMO, 2026). Designated ECAs are granted higher levels of protection than other areas of the sea. Since 1 January 2015, vessels entering and transiting through the North Sea ECA must comply with a SO<sub>x</sub> limit of 0.1%. Furthermore, the IMO also adopts a progressive approach to the control of marine diesel engine NO<sub>x</sub> emissions. Vessels constructed on or after 1 January 2021 must comply with the most stringent Tier III controls on diesel engines when entering and transiting through the North Sea ECA.
1518. Air pollutant concentrations should only be compared to the relevant air quality objectives where there is representative exposure. There are no offshore human receptors that are sensitive to air quality within the Bellrock OfTDA Scoping Boundary, and marine-based ecological designations are unlikely to be sensitive to air pollution impacts (United Kingdom Centre for Ecology and Hydrology, 2024).
1519. The only receptors that may be affected by offshore air quality impacts are coastal and nearshore human and ecological receptors, where there may be isolated locations of relevant human exposure close to the shoreline, and land-based designated ecological sites. Project workers are not considered relevant air quality receptors as potential exposure is managed through relevant occupational health and safety legislation and procedures. Other offshore users, including commercial and recreational vessel operators, are not considered relevant receptors due to their transient presence and absence of locations of relevant long-term exposure.
1520. Relevant human receptors may include people occupying coastal residential settlements or commercial properties, those utilising the caravan park, beach, footpaths, and other coastal recreational areas, or those working outdoors near the coast. The Garron Point Site of Scientific Special Interest is adjacent to the Bellrock OfTDA at landfall and is principally designated for the protection of geological features which will not be affected by emissions generated by the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure. Garron Point Site of Scientific Special Interest is also designated for the protection of several biological features (maritime cliff habitat, the narrow-mouthed whorl snail *Vertigo angustior* and the Northern brown argus butterfly *Aricia artaxerxes*). These features are not sensitive to short-term changes in air quality and therefore would not be impacted by the construction, O&M and decommissioning of the Bellrock Offshore Transmission Infrastructure.

## 18.5 Potential Impacts

1521. Impacts on offshore air quality could potentially occur during construction, O&M and decommissioning, due to vessel movements associated with the Bellrock Offshore Transmission Infrastructure and to a lesser extent use of helicopters and potentially generators (if required).

### 18.5.1 Embedded Mitigation Measures

1522. Embedded mitigation has been identified, as presented in **Table 18.2** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental impacts. Consistent with the Institute of Environmental Management and Assessment

guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Given that offshore air quality is proposed to be scoped out from further assessment, these embedded measures are considered sufficient, and no further detailed assessment or identification of secondary mitigation measures through the EIA process is anticipated.

1523. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 18.2: Embedded Mitigation Measures Relevant to Offshore Air Quality**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                        |                 |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                                                                                                                                                                                         | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental effects are applied consistently throughout construction and O&M. This will help minimise emissions to air where practicable.                                  | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>▪ MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>▪ The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>▪ Consideration of guidance from the International Maritime Organization (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel O&M will promote efficient vessel performance and good environmental practice. This will help minimise fuel consumption and associated emissions to air from project vessels.                       | Tertiary        |
| ✓                          | ✓   | ✓               | Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP). The VMNSP will set out the procedures and measures to be implemented to manage project vessel operations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other                                                                                  | The VMNSP provides a framework for managing project vessel movements and operations, including use of defined transit corridors where practicable, helping to minimise unnecessary vessel activity and associated atmospheric emissions during construction, O&M, and decommissioning. | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Relevance to Assessment | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                         |                 |
|                            |     |                 | <p>sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> |                         |                 |



## 18.6 Scoping of Potential Impacts

### 18.6.1 Construction, O&M and Decommissioning Phases

1524. Vessels utilised during construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure may contribute to air pollutant emissions offshore. However, in the context of the existing vessel traffic within the North Sea, the Bellrock Offshore Transmission Infrastructure contributions are likely to be small scale and infrequent. Therefore, their associated exhaust emissions would be negligible in comparison to the total shipping activity within the region.
1525. Construction and O&M activities will be temporary in nature, particularly given the spatial extent of the Bellrock OfTDA, meaning that works within any particular area will be of relatively short duration. Existing vessel activity occurs throughout the Bellrock OfTDA, as detailed in **Chapter 11: Shipping and Navigation**, and therefore any emissions generated by temporary project activities would represent a small and transient addition to existing baseline conditions. Therefore, there would be no air quality impact upon onshore human or ecological receptors. It is noted that any potential air quality impacts on human health arising from the activities associated with the Bellrock Onshore Transmission Infrastructure will be addressed in the Bellrock Onshore Transmission Development Area Scoping Report.
1526. Given there would be a relatively low number of vessels utilised for works associated with the Bellrock Offshore Transmission Infrastructure, the short-term and transient nature of these activities, the high baseline levels of vessel activity, and the MARPOL emissions regulations that will be applied to vessels, it is considered that offshore air quality impacts would not be significant. As such, it is proposed to **scope out** offshore air quality impacts from further assessment in the Bellrock OfTDA EIA. This is in line with other recent scoping opinions such as for the Stoura Offshore Wind Farm (MD-LOT, 2025), Bellrock WFDA (MD-LOT, 2024a), Bowdun Offshore Wind Farm (MD-LOT, 2024b), Caledonia Offshore Wind Farm (Marine Scotland - Licensing Operations Team (MD-LOT), 2023) and for the Green Volt Offshore Wind Farm (MD-LOT, 2022).

### 18.6.2 Bellrock OfTDA Whole Project Assessment

1527. As project-alone offshore air quality impacts have been scoped out of the Bellrock OfTDA EIA, no offshore air quality Bellrock OfTDA Whole Project Assessment is required and is therefore **scoped out**.

### 18.6.3 Potential Cumulative Effects

1528. As project-alone offshore air quality impacts have been scoped out of the Bellrock OfTDA EIA, no offshore air quality Cumulative Effect Assessment is required. Therefore, cumulative offshore air quality impacts are proposed to be **scoped out** of the Bellrock OfTDA EIA.

### 18.6.4 Potential Transboundary Effects

1529. As project-alone offshore air quality impacts have been scoped out of further assessment; there is no potential for significant transboundary effects on offshore air quality receptors within other

European Economic Area states. Therefore, transboundary offshore air quality impacts are proposed to be **scoped out** of the Bellrock OFTDA EIA.

### 18.6.5 Summary of Potential Impacts

1530. **Table 18.3** outlines the offshore air quality impacts which are proposed to be scoped out of the Bellrock OFTDA EIA Report.

**Table 18.3: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Offshore Air Quality**

| Potential Impact                                                               | Receptors                               | Scoped In or Scoped Out (✓ or X) |     |                 |
|--------------------------------------------------------------------------------|-----------------------------------------|----------------------------------|-----|-----------------|
|                                                                                |                                         | Construction                     | O&M | Decommissioning |
| Impacts of emissions from vessels and helicopters and generators (if required) | Human receptors<br>Ecological receptors | X                                | X   | X               |
| Bellrock OFTDA Whole Project Assessment                                        | Human receptors<br>Ecological receptors | X                                | X   | X               |
| Cumulative effects                                                             | Human receptors<br>Ecological receptors | X                                | X   | X               |
| Transboundary effects                                                          | Human receptors<br>Ecological receptors | X                                | X   | X               |

## 18.7 Proposed Approach to Impact Assessment

1531. As offshore air quality is proposed to be **scoped out** from further assessment in the Bellrock OFTDA EIA Report, no proposed approach to EIA is presented.

## 18.8 Scoping Questions for Consultees

1532. The following questions are posed to consultees to help them frame and focus their response to the offshore air quality scoping exercise, which will in turn inform the EIA:

- Do you agree with the characterisation of the existing environment?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 18.2**?
- Do you agree that all the offshore air quality impacts resulting from the Bellrock OfTDA have been identified in **Section 18.5**?
- Do you agree that all offshore air quality impacts should be scoped out of the Bellrock OfTDA EIA?
- Do you have any other matters that you wish to present?

## 18.9 References

Bellrock Offshore Wind Farm Limited (2026). Bellrock WFDA Section 36 Consent and Marine Licence Applications, including the Environmental Impact Assessment Report, Report to Inform Appropriate Assessment, and Supporting Documentation (Volume I to VII). Available at: <https://marine.gov.scot/?q=node/27552>

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International Maritime Organization (IMO) (2019). IMO 2020 – cleaner shipping for cleaner air. Available at: <https://www.imo.org/en/MediaCentre/PressBriefings/Pages/34-IMO-2020-sulphur-limit-.aspx#:~:text=Known%20as%20%22IMO%202020%22%2C%20the%20reduced%20limit%20is,o%20approximately%208.5%20million%20metric%20tonnes%20of%20SOx.>

International Maritime Organization (IMO) (2026). Special Areas under MARPOL. Available at: <https://www.imo.org/en/OurWork/Environment/Pages/Special-Areas-Marpol.aspx>

Marine Directorate Licensing Operations Team (MD-LOT) (2022). Green Volt Offshore Wind Farm – Scoping Opinion. Available at: [https://marine.gov.scot/sites/default/files/scoping\\_opinion\\_9.pdf](https://marine.gov.scot/sites/default/files/scoping_opinion_9.pdf)

Marine Directorate Licensing Operations Team (MD-LOT) (2023). Caledonia Offshore Wind Farm – Scoping Opinion. Available at: <https://www.marine.gov.scot/node/23386>

Marine Directorate Licensing Operations Team (MD-LOT) (2024a). Scoping Opinion - Bellrock WFDA. Available at: <https://marine.gov.scot/node/25450>

Marine Directorate Licensing Operations Team (MD-LOT) (2024b). Scoping Opinion – Bowdun Offshore Wind Farm. Available at: [https://marine.gov.scot/sites/default/files/scoping\\_opinion\\_17.pdf](https://marine.gov.scot/sites/default/files/scoping_opinion_17.pdf)

Marine Directorate Licensing Operations Team (MD-LOT) (2025). Scoping Opinion – Stoura Offshore Wind Farm. Available at: [https://marine.gov.scot/sites/default/files/stoura\\_offshore\\_wind\\_farm\\_-\\_scop-0071\\_-\\_eia\\_scoping\\_and\\_hra\\_screening\\_-\\_scoping\\_opinion\\_-\\_final\\_draft.pdf](https://marine.gov.scot/sites/default/files/stoura_offshore_wind_farm_-_scop-0071_-_eia_scoping_and_hra_screening_-_scoping_opinion_-_final_draft.pdf)

Scottish Government (2021). Cleaner Air for Scotland 2 - Towards a Better Place for Everyone. Available at: <https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2021/07/cleaner-air-scotland-2-towards-better-place-everyone/documents/cleaner-air-scotland-2-towards-better-place-everyone/cleaner-air-scotland-2-towards-better-place-everyone/govscot%3Adocument/cleaner-air-scotland-2-towards-better-place-everyone.pdf>

United Kingdom Centre for Ecology and Hydrology (2024). Air Pollution Information System. Available at: <https://www.apis.ac.uk/>

# 19 Major Accidents and Disasters

## 19.1 Introduction

1533. This Chapter of the **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** considers the potential impacts on the environment arising from the vulnerability of the Bellrock Offshore Transmission Infrastructure to risk of major accidents and disasters during the construction, operation and maintenance (O&M), and decommissioning phases.
1534. The Bellrock OfTDA Scoping Boundary (shown in **Figure 1.1 (Appendix A (Volume 1))**) defines the area within which the Bellrock Offshore Transmission Infrastructure will be constructed, operated and maintained, and decommissioned. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process (as discussed in **Section 1.4 in Chapter 1: Introduction**) to form the boundary of the Bellrock OfTDA Marine Licence Application.
1535. For the purposes of this **Bellrock OfTDA Scoping Report**, the Bellrock OfTDA Scoping Boundary encompasses the area up to Mean High Water Springs (MHWS). The Bellrock OfTDA Scoping Boundary overlaps with the Bellrock Onshore Transmission Development Area (OnTDA) between MHWS and Mean Low Water Springs and overlaps with the full extent of the Bellrock Wind Farm Development Area (WFDA).
1536. The Bellrock Offshore Transmission Infrastructure includes:
- **Offshore substation(s) (OfSS(s)):** up to six fixed bottom substructure OfSS(s), all located within the area of the Bellrock OfTDA that overlaps with the Bellrock WFDA;
  - **Interconnector cable(s):** up to five High Voltage Alternating Current interconnector cable(s), each approximately 25 km in length, located within the Bellrock WFDA, with associated cable protection where required;
  - **Offshore export cables:** between two and six High Voltage Alternating Current or High Voltage Direct Current offshore export cable circuits, each approximately 200 km in length, with associated cable protection where required;
  - **Offshore reactive compensation station(s) (OfRCS(s)):** up to two fixed bottom substructure OfRCS(s) located within the Bellrock OfTDA, located at least 39 km from the Scottish coastline (MHWS) (not required should a High Voltage Direct Current electrical design be adopted);
  - **Scour protection:** for the OfSS(s) and the OfRCS(s);
  - **Landfall:** between two and six ducts installed by a trenchless technique, and offshore export cables installed below MHWS at Cowie, Aberdeenshire; and
  - Ancillary infrastructure including buoys.

1537. As noted in **Chapter 1: Introduction**, the scope of the potential impacts of the Bellrock Wind Farm Infrastructure (located within the Bellrock WFDA) was presented in the **Bellrock WFDA Environmental Impact Assessment (EIA) Report**, which was submitted in support of the Section 36 Consent and Marine Licence Application for the Bellrock Wind Farm Infrastructure in April 2026 (Bellrock Offshore Wind Farm Limited, 2026). The **Bellrock WFDA EIA Report** considered the potential impacts and subsequent effects of the Bellrock Wind Farm Infrastructure on the receiving environment.
1538. This Chapter provides an overview of the existing environment and sets out the proposed methodology and approach to assessing effects on the environment arising from the vulnerability of the Bellrock Offshore Transmission Infrastructure to risks of major accidents and disasters within the Bellrock OfTDA EIA Report. This Chapter has been prepared by Haskoning.
1539. This Chapter should be read in conjunction with the following chapters of the **Bellrock OfTDA Scoping Report**:
- **Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Chapter 6: Intertidal and Benthic Ecology;**
  - **Chapter 7: Fish and Shellfish Ecology;**
  - **Chapter 8: Marine Mammals;**
  - **Chapter 9: Intertidal and Offshore Ornithology;**
  - **Chapter 10: Commercial Fisheries;**
  - **Chapter 11: Shipping and Navigation;**
  - **Chapter 12: Aviation and Radar;**
  - **Chapter 13: Marine Infrastructure and Other Users;**
  - **Chapter 14: Marine Archaeology and Cultural Heritage;**
  - **Chapter 16: Socioeconomics and Tourism;** and
  - **Chapter 17: Climate Change.**
1540. This Chapter is likely to have key inter-relationships with the above receptors, which will be considered appropriately where relevant in the Bellrock OfTDA EIA Report.

### 19.1.1 Key Definitions

1541. The following definitions are relevant to this chapter of the **Bellrock OfTDA Scoping Report** (Institute of Environmental Management and Assessment (IEMA), 2020):
- An '**accident**' refers to an event that occurs unexpectedly or by chance;
  - A '**disaster**' is a sudden accident or natural catastrophe that causes great damage or loss of life. These can be natural hazards, man-made hazards (e.g. accidental loss of containment), or external hazards (e.g. act of terrorism) that result in consequences for people or the environment;

- **'Major accidents'** are 'events that threaten immediate or delayed serious environmental effects to human health, welfare, and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g. train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events;
- A **'receptor'** refers to the specific component of the environment that could be adversely affected if the source reaches it. Noting that As Low As Reasonably Practicable (ALARP) describes the level to which it would be expected to see risks controlled;
  - ALARP is used in assessment of major accidents and disasters involves 'weighing a risk against the trouble, time and money needed to control it;
- **'Risk'** is the likelihood of an impact happening, along with the resulting effects or consequences on a receptor if it does occur;
- A **'risk event'** is an identified, unplanned event relevant to the Bellrock Offshore Transmission Infrastructure that could result in a major accident or disaster, subject to assessment for significant adverse effects on an environmental receptor;
- **'Serious danger to human health'** relates to the people present in the potentially affected areas, either permanently or for prolonged periods of time. This excludes workers operating at the facility;
- **'Serious danger to the environment'** is loss or significant detrimental impact on populations of species or organisms, harm or loss of valued sites (including designated sites), valued cultural heritage sites, contamination of drinking water supplies, ground or groundwater, or permanent or long-lasting harm to environmental receptors that cannot be restored through minor clean-up or restoration efforts;
- **'Significant environmental effect'** in the context of major accident and disaster assessment includes loss of life, permanent injury, and the temporary or permanent destruction of an environmental receptor that cannot be restored through minor clean-up and restoration efforts;
- A **'source'** refers to the original cause of the hazard, which has the potential to cause harm; and
- **'Vulnerability'** describes the potential for harm because of an event, for example due to sensitivity or value of receptors, and is influenced by sensitivity, adaptive capacity and magnitude of impact. In the context of the EIA Directive, the term refers to the 'exposure and resilience' of the development to the risk of a major accident and/or disaster.

## 19.2 Legislation, Policy and Guidance

1542. The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 require significant risks to the receiving communities and environment to be considered, for example those resulting from major accidents or disasters. As such, significant effects arising from the vulnerability of the Bellrock Offshore Transmission Infrastructure to major accidents or disasters should be considered.

1543. **Table 19.1** sets out the legislation, policy and guidance that have been considered in the preparation of this Chapter and will be considered within the Bellrock OfTDA EIA Report, where appropriate. The overarching policy and legislation relevant to the Bellrock Offshore Transmission Infrastructure is described in **Chapter 2: Legislative and Policy Context**.

**Table 19.1: Summary of Relevant Legislation, Policy and Guidance for Major Accidents and Disasters**

| Relevant Legislation, Policy and Guidance                                                                                | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Legislation</b>                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Convention on the International Regulations for Preventing Collisions at Sea, 1972                                       | Adopted by the International Maritime Organization (IMO), these Regulations set out the navigation rules to be followed by ships and other vessels at sea to prevent collisions.                                                                                                                                                                                                                                                                                                                                                                                       |
| International Convention for the Safety of Life at Sea, 1974                                                             | Adopted by the IMO, this convention sets minimum safety standards in the construction, equipment, and operation of merchant ships.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Health and Safety at Work Act 1974                                                                                       | The Act defines the general duties of employers and employees for maintaining health and safety within most workplaces. It requires workplaces to provide adequate training of staff, adequate welfare provisions, a safe working environment and provision of relevant information and supervision.                                                                                                                                                                                                                                                                   |
| The Management of Health and Safety at Work Regulations 1999                                                             | The Regulations outline what employers must do to manage health and safety and apply this to work activities. The main duty of the employer is to produce risk assessments.                                                                                                                                                                                                                                                                                                                                                                                            |
| Construction (Design and Management) Regulations 2015                                                                    | The Regulations outline the actions required for the health, safety and welfare of construction projects to prevent injury and ill health, applying to all building and construction work.                                                                                                                                                                                                                                                                                                                                                                             |
| The Control of Major Accident Hazards Regulations 2015                                                                   | <p>The Control of Major Accident Hazards Regulations 2015<sup>1</sup> aims to prevent and mitigate the effects of major accidents involving dangerous substances that could pose significant risks to human health and/or the environment.</p> <p><i>General duties of operators - 5.— (1) Every operator must take all measures necessary to prevent major accidents and to limit their consequences for human health and the environment.</i></p>                                                                                                                    |
| The Civil Contingencies Act 2004 and the Civil Contingencies Act 2004 (Contingency Planning) (Scotland) Regulations 2005 | Provide a comprehensive framework for civil protection in the United Kingdom (UK) aimed at ensuring the country is prepared to respond to emergencies by assessing risks and developing emergency response plans.                                                                                                                                                                                                                                                                                                                                                      |
| Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015                                   | They implement the European Union Offshore Safety Directive, aiming to enhance the safety of offshore oil and gas operations in external waters, including the territorial sea adjacent to Great Britain and any designated area within the UK continental shelf. Key provisions include the requirement for operators to prepare and maintain safety cases, demonstrating how they identify and manage major accident hazards, and the establishment of a Corporate Major Accident Prevention Policy, outlining the company's approach to preventing major accidents. |



| Relevant Legislation, Policy and Guidance                                                                                                              | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The Marine Works (Environmental Impact Assessment) Regulations 2007 and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 | Both Regulations are used as references for the screening and assessment of major accidents and disasters. Further details of these Regulations are presented in <b>Chapter 2: Legislative and Policy Context</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78                                                                     | As a party to MARPOL, the UK is required to comply with this international convention, which aims to prevent marine pollution from ships due to operational or accidental causes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| International Convention for the Control and Management of Ships' Ballast Water and Sediments                                                          | As a member of the IMO, the UK is required to comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments, which aims to prevent the spread of harmful aquatic organisms and pathogens by controlling and managing ships' ballast water and sediment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Policy</b>                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Scotland's National Marine Plan (Scottish Government, 2015)                                                                                            | <p><b>General Policy 4: Co-existence</b></p> <p>This policy emphasises the importance of ensuring that different marine activities can coexist in a way that minimises conflicts and maximises mutual benefits. It encourages marine planners and decision makers to consider the cumulative impacts of various activities and promote synergies where possible. Proposals that bring together compatible or synergistic activities in one location are encouraged to make efficient use of space and resources.</p> <p><b>General Policy 5: Climate change</b></p> <p>This policy emphasises the need for marine planners and decision makers to act in ways that mitigate and adapt to climate change. It encourages a transition to a low carbon economy by reducing greenhouse gas emissions and ensuring that developments are designed to adapt to the impacts of a changing climate. This includes appropriate siting and design of offshore and coastal developments, considering vulnerability, scale, and longevity.</p> <p><b>General Policy 9: Natural Heritage</b></p> <p>This policy focuses on the protection and enhancement of Scotland's natural marine heritage. It requires marine planners and decision makers to ensure that development and use of the marine environment do not harm the natural heritage and, where possible, contribute to its enhancement. This includes safeguarding biodiversity, habitats, and ecosystem services, and considering compensatory habitat creation or enhancement if significant harm cannot be avoided.</p> <p>Development and use of the marine environment must:</p> <ul style="list-style-type: none"> <li>(a) Comply with legal requirements for protected areas and protected species;</li> <li>(b) Not result in significant impact on the national status of Priority Marine Features; and</li> <li>(c) Protect and, where appropriate, enhance the health of the marine area.</li> </ul> |

| Relevant Legislation, Policy and Guidance                                                                                                               | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scotland's Regional Marine Plans (Scottish Government, 2015)                                                                                            | Scotland's coastal waters out to 12 nautical miles are divided into 11 Marine Regions, for which Regional Marine Plans (RMPs) can be developed by Marine Planning Partnerships to create a local approach to marine planning. To date, there are only two adopted RMPs in Scotland (Shetland and Orkney), with the Clyde RMP in advanced stages of development. The North East RMP, relevant to the Bellrock OfTDA, has not begun development.                                                                                                              |
| National Planning Framework 4 (NPF4) (Scottish Government, 2023)                                                                                        | The NPF4 is the statutory planning policy framework for Scotland and is a material consideration for offshore wind developers. While NPF4 does not apply directly to the marine environment, it contains strong policy support for renewable energy infrastructure and emphasises resilience, risk management and sustainable development, including the need to consider the vulnerability of infrastructure to climate-related hazards and to ensure risks to human health, the environment and other receptors are appropriately identified and managed. |
| <b>Guidance</b>                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Guidelines for Environmental Risk Assessment and Management - Green Leaves III (Department for Environment, Food and Rural Affairs, 2011)               | Provides a structured and systematic approach for identifying, evaluating and mitigating environmental risks to ensure human health and environmental protection.                                                                                                                                                                                                                                                                                                                                                                                           |
| The Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations 2015 – Guidance on Regulations (Health and Safety Executive, 2015) | Provides a framework for ensuring safety and environmental protection in offshore oil and gas operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| International Organization for Standardization (ISO) 14001:2015. Environmental management system (ISO, 2015)                                            | Provides a framework for organisations to design and implement their environmental management systems and demonstrate how they are managing their environmental impacts.<br><br>Regarding emergency preparedness and response, clause 8.2 of the ISO 14001:2015 sets out guidance on the processes organisations should have in place to prevent, mitigate, prepare, respond and recover from an emergency situation.                                                                                                                                       |
| EIA Quality Mark Article: What is this MADness? (IEMA <sup>1</sup> , 2017)                                                                              | Provides guidance on how to incorporate risk assessments associated with major accidents and disasters into the EIA process.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ISO 31000:2018. Risk Management – Guidelines (ISO, 2018a)                                                                                               | ISO 31000:2018 is a comprehensive framework for managing risk effectively across organisations. This ISO standard aims to identify, assess and manage risks through a systematic process.                                                                                                                                                                                                                                                                                                                                                                   |

| Relevant Legislation, Policy and Guidance                                                                                                                                                                                    | Relevance to the Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ISO 45001:2018. Occupational health and safety management systems (ISO, 2018b)                                                                                                                                               | Specifies requirements for an occupational health and safety management system, and gives guidance for its use, to enable organisations to provide safe and healthy workplaces by preventing work-related injury and ill health, as well as by proactively improving their occupational health and safety performance.<br><br>Regarding emergency preparedness and response, clause 8.3 of the ISO 45001:2018 sets out guidelines for a structured and proactive approach to handling workplace emergencies including the identification of potential emergency situations, development of response plans, training of employees, conducting regular drills, and continuous improvement of emergency preparedness. |
| Major Accidents and Disasters in EIA: A Primer (IEMA <sup>1</sup> , 2020)                                                                                                                                                    | Provides a structured methodology for identifying, assessing and mitigating the risks of major accidents and disasters during the EIA process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Marine Guidance Note (MGN) 654 - Safety of Navigation: Offshore Renewable Energy Installations - Guidance on UK Navigational Practice, Safety and Emergency Response. (MGN 654) (Maritime and Coastguard Agency (MCA), 2021) | Provides guidance on ensuring navigational safety and effective emergency response for Offshore Renewable Energy Installations and Search and Rescue (SAR) operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>Notes:</p> <p><sup>1</sup> Currently known as the Institute of Sustainability and Environmental Professionals.</p>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## 19.3 Consultation

1544. A Scoping Information Package for the Bellrock OfTDA was provided to the Marine Directorate Licensing Operations Team, Marine Directorate Science Evidence Data and Digital, Marine Directorate Marine Analytical Unit, NatureScot, and Aberdeenshire Council in May 2026. The Scoping Information Package included information on the proposed approach to major accidents and disasters for the Bellrock OfTDA EIA. No consultation feedback relevant to major accidents and disasters was received.
1545. **Chapter 11: Shipping and Navigation** provides details of consultation with the MCA and Northern Lighthouse Board relevant to the Navigational Risk Assessment and site selection of the OfSS(s) and OfRCS(s). Feedback reviewed from consultation undertaken as part of the Bellrock WFDA EIA will also be considered where appropriate.

## 19.4 Existing Environment

1546. The existing environment has been characterised in the relevant chapters of this **Bellrock OfTDA Scoping Report**, as listed in **Section 19.1**.
1547. The receiving environment for major accidents and disasters will vary depending on the type and scale of the event in question. The scope of the major accidents and disasters chapter is determined by the nature of the potential major accidents and disasters which could be associated with the Bellrock Offshore Transmission Infrastructure.
1548. The future baseline for the Bellrock OfTDA relevant to major accidents and disasters will evolve relating to several likely factors over the lifecycle of the Bellrock Offshore Transmission Infrastructure. Climate change is likely to lead to changes in rainfall and temperature, increased occurrences of extreme weather, and rising sea levels. Predictions for changes in climate until the end of the 21st century are available from The UK Climate Projections (various dates). The impacts of climate change are set out in more detail in **Chapter 17: Climate Change**.
1549. There are likely to be advances in technology over the lifecycle of the Bellrock Offshore Transmission Infrastructure, with potential for further reductions in risks to safety and the environment, or to introduce new hazards with the introduction of novel technology. Novel technologies would be implemented following appropriate risk assessment processes.
1550. In terms of shipping and navigation risks, a Navigational Risk Assessment will be undertaken as part of the EIA process and is discussed further in **Chapter 11: Shipping and Navigation**.

## 19.5 Potential Impacts

### 19.5.1 Study Area

1551. The major accidents and disasters study area for individual hazards will be determined in relation to the impact pathways as identified in the relevant technical chapters in the EIA (as detailed in **Section 19.1**), the distances to the receptors or from examination of the scale of impacts from examples of historic incidents where available. The geographic scope may reach beyond the Bellrock OfTDA Scoping Boundary where there is potential for interaction. Professional judgement has informed the scope relating to the hazards with the potential for interaction with the Bellrock Offshore Transmission Infrastructure. The Bellrock OfTDA Scoping Boundary is provided in **Figure 1.1 (Appendix A (Volume 1))** of the **Bellrock OfTDA Scoping Report**.
1552. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the Bellrock OfTDA. The major accidents and disasters study area will be updated for the Bellrock OfTDA EIA to reflect this refinement (see **Section 1.4** in **Chapter 1: Introduction**).
1553. The temporal scope relates to the lifespan of the Bellrock OfTDA, through construction, O&M, and decommissioning, up to 40 years.

## 19.5.2 Potential Receptors

1554. The proposed potential receptors relevant to this scoping exercise and the assessment to be undertaken in the Bellrock OfTDA EIA Report are provided with definitions in **Table 19.2**. The level of harm considered to represent a major accident or disaster is also presented. The thresholds have been determined using industry best practice based upon:
- Criteria for notification of a major accident to the European Commission under Article 18(1) of Seveso III Directive and Regulation 26 of the Control of Major Accident Hazards Regulations 2015 (cited in IEMA, 2020); and
  - The Control of Major Accident Hazards Regulations 2015.

## 19.5.3 Data and Information Sources

1555. Information and parameters regarding the design, infrastructure, approach and methods for construction, O&M, and decommissioning of the Bellrock Offshore Transmission Infrastructure will be required to inform appropriate assessment of major accidents and disasters. This will be developed as the project design is refined and the EIA process progresses. Additionally, there will be a reliance of data collated for the chapters identified in **Section 19.1** to inform the assessment for this Chapter in the Bellrock OfTDA EIA Report.
1556. The major accidents and disasters assessment in the Bellrock OfTDA EIA Report will be informed by further acquisition of spatial data as well as through further consultations with industry groups, governing bodies, interest groups and local communities.
1557. It is not considered that there is any additional baseline information required to inform the assessment of major accidents and disasters.

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**Table 19.2: Potential Receptors Relevant to the Bellrock OfTDA Scoping Report**

| Receptor Group                                       | Receptors Included                                                                                                                                                                               | Major Accident or Disaster Threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Population and human health                          | Construction workers, O&M workers, and other sea users (including bathing waters as identified in <b>Chapter 5: Marine Geology, Oceanography, and Physical Processes</b> ).                      | <p>For the public and other sea users:</p> <ul style="list-style-type: none"> <li>Substantial number (five or more) of people requiring medical attention or any serious/life-changing injuries. Events of this magnitude may also involve some damage to housing, with low numbers of people being displaced. Potential for localised interruption to utilities and damage to infrastructure.</li> </ul> <p>For workers:</p> <ul style="list-style-type: none"> <li>Multiple life changing injuries or fatalities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Designated Sites (International, National and Other) | Special Areas of Conservation, Special Protection Areas, Nature Conservation Marine Protected Areas, Marine Protected Areas.                                                                     | <p>For Special Areas of Conservation, Special Protection Areas, Nature Conservation Marine Protected Areas and Marine Protected Areas, the thresholds are:</p> <ul style="list-style-type: none"> <li>Greater than 0.5 ha or 5% of the area of the site adversely affected (whichever is the lesser), or greater than 5% of an associated linear feature adversely affected; or</li> <li>Greater than 5% of a particular habitat or population of individual species adversely affected.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Particular species                                   | Particular species covers all species, both flora and fauna, found in the UK and includes common species, red data book species and other protected or priority species, including rare species. | <p>For common species, where reliable estimates of population numbers exist, the threshold is death of, or serious sub-lethal effects within 1% of any species.</p> <p>For common plant species, the threshold is the death of, or serious sub-lethal effects within, 5% of the ground cover.</p> <p>For species listed in the Habitats Directive annexes, the Annexes of the Birds Directive, the Schedules of the Wildlife and Countryside Act 1981 (and amended), all Red Data Book species and priority species under the UK Biodiversity Action Plan, the threshold may be lower than 1% or 5%, and liaison with the appropriate statutory conservation organisation should be used to determine the appropriate threshold.</p> <p>Moreover, for all species, where reliable estimates of population numbers do not exist, liaison with the statutory authority will be necessary to determine appropriate thresholds.</p> <p>Any loss of a Red Data Book species (or a Red Data Book species site).</p> |

| Receptor Group     | Receptors Included                                                                                                  | Major Accident or Disaster Threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marine environment | Non-estuarine marine waters, sub-littoral zones, benthic community adjacent to the coast and fish spawning grounds. | <p>Permanent or long-term damage to:</p> <ul style="list-style-type: none"> <li>▪ An area of two hectares (ha) or more of the littoral or sub-littoral zone, or the coastal benthic community, or the benthic community of any fish spawning ground; or</li> <li>▪ An area of 100 ha or more of the open sea benthic community.</li> </ul> <p>Or a count of:</p> <ul style="list-style-type: none"> <li>▪ 100 or more dead seabirds (not gulls); or</li> <li>▪ 500 or more dead seabirds of any species; or</li> <li>▪ Five or more dead or significantly injured/impaired sea mammals of any species.</li> </ul> |



#### 19.5.4 Embedded Mitigation Measures

1558. Embedded mitigation has been identified, as presented in **Table 19.3** and **Appendix B: Mitigation and Monitoring Register (Volume 1)**, in accordance with the mitigation hierarchy, with the aim of avoiding, preventing, reducing, and where possible, offsetting potential adverse environmental effects. Consistent with the IEMA guidance (2024), primary (inherent design measures) and tertiary (standard good practice) mitigation are embedded within the project design and are therefore considered in the assessment of effects. Secondary mitigation measures will be identified where required through the EIA process, informed by the outcomes of the initial impact assessment.
1559. The current embedded mitigation measures may be refined as the project design evolves. In addition, further embedded mitigation measures may be developed as part of the iterative design process.

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**Table 19.3: Embedded Mitigation Measures Relevant to Major Accidents and Disasters**

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Relevance to Assessment                                                                                                                                                                                                                                                                                                                    | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                            |                 |
| ✓                          | ✓   | X               | A detailed Cable Burial Risk Assessment (CBRA) will be prepared where offshore export cables and interconnector cable(s) are proposed to be buried to determine the target burial depth. The burial depths may vary and will be dependent on risk and ground conditions. The CBRA will also highlight instances where adequate burial cannot be achieved, and alternative cable protection is needed.                                                                                                                                                                                                                                                                                                                                 | The CBRA will determine appropriate cable burial depths based on local ground conditions and risk, helping to maximise cable burial and minimise the requirement for external cable protection. This will reduce the likelihood of cable exposure and associated risks to existing marine infrastructure and other users.                  | Primary         |
| ✓                          | ✓   | X               | During the construction and O&M of the Bellrock Offshore Transmission Infrastructure, periodic geophysical surveys will be required to ensure the offshore export cables and interconnector cable(s) remain buried and if they do become exposed, remedial works would be undertaken.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Periodic geophysical surveys and remedial works, where required, will support the ongoing management of the Bellrock Offshore Transmission Infrastructure and minimise the risk of hazards associated with exposed offshore export cables and interconnector cable(s).                                                                     | Primary         |
| ✓                          | ✓   | ✓               | <p>An application will be made post-consent for Safety Zones including:</p> <ul style="list-style-type: none"> <li>▪ An application for Safety Zones for up to 500 m around each OfSS and OfRCS during its construction;</li> <li>▪ An application for Safety Zones for up to 50 m around each OfSS and OfRCS when construction works have been completed but prior to commissioning, or where construction works are partially completed and a construction vessel is not present;</li> <li>▪ An application for Safety Zones for up to 500 m around each OfSS and OfRCS during major maintenance during operation;</li> <li>▪ An application (prior to commencement of decommissioning) for Safety Zones for up to 500 m</li> </ul> | The establishment of Safety Zones around the Bellrock Offshore Transmission Infrastructure during construction, major maintenance and decommissioning will provide a managed area for safe working operations. This will reduce the likelihood of unauthorised vessel interactions with the Bellrock Offshore Transmission Infrastructure. | Primary         |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                         | Relevance to Assessment                                                                                                                                                                                                                                                                                                         | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                 |                 |
|                            |     |                 | <p>around each OfSS and OfRCS during its decommissioning; and</p> <ul style="list-style-type: none"> <li>Consideration will also be given to an application for up to 500 m operational Safety Zones throughout the O&amp;M phase.</li> </ul>                                                                                                       |                                                                                                                                                                                                                                                                                                                                 |                 |
| ✓                          | ✓   | X               | <p>Development of, and adherence to, a Seabed Obstruction Mitigation Plan.</p> <p>The Seabed Obstruction Mitigation Plan will set out any potential risks to legitimate sea users and identify measures to reduce these risks.</p>                                                                                                                  | Implementation of the Seabed Obstruction Mitigation Plan will identify and manage potential hazards associated with seabed features and the Bellrock Offshore Transmission Infrastructure. This will reduce the likelihood of incidents involving vessels, fishing gear and the Bellrock Offshore Transmission Infrastructure.  | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Development of and adherence to a Cable Plan (CaP).</p> <p>The CaP will set out detailed cable installation methods and techniques (based on final project design). The CaP will confirm planned cable routing, burial (if any), and any additional protection if required, and will set out methods for post-installation cable monitoring.</p> | Implementation of the CaP will ensure cable installation, burial and protection measures are designed and managed to minimise unnecessary seabed disturbance. This will reduce the likelihood of cable exposure and associated hazards during construction and O&M.                                                             | Tertiary        |
| ✓                          | ✓   | X               | <p>Any damage, destruction, or decay of offshore export cables and/or interconnector cable(s) will be notified to the MCA, Northern Lighthouse Board, Kingfisher, and the United Kingdom Hydrographic Office.</p>                                                                                                                                   | Timely notification of any damage, destruction or decay of offshore export cables and interconnector cable(s) will ensure relevant authorities and stakeholders are informed of potential hazards. This will support the implementation of appropriate risk management measures and reduce the likelihood of further incidents. | Tertiary        |
| ✓                          | ✓   | ✓               | <p>Development and implementation of a Vessel Management and Navigational Safety Plan (VMNSP).</p> <p>The VMNSP will set out the procedures and measures to</p>                                                                                                                                                                                     | Implementation of VMNSP will support the safe and efficient management of project vessel movements. This will reduce the                                                                                                                                                                                                        | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                                                             | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                     |                 |
|                            |     |                 | <p>be implemented to manage project vessel operations during the construction, operation and maintenance (O&amp;M), and decommissioning phases of the Bellrock Offshore Transmission Infrastructure. The VMNSP will include, as appropriate, information on vessel types and anticipated numbers, indicative transit corridors, navigational safety measures (including Safety Zones, charting, construction buoyage, temporary lighting and marking), means of notifying other sea users of project activities (e.g. via Notice to Mariners with Kingfisher Bulletins or other appropriate methods), and the use of guard vessels where required.</p> <p>The VMNSP will also incorporate recognised good practice for vessel operations, including alignment with the Scottish Marine Wildlife Watching Code (Scottish Natural Heritage, 2017a) and the associated Guide to Best Practice for Watching Marine Wildlife (Scottish Natural Heritage, 2017b), where applicable. Where practicable, vessel movements will follow defined transit corridors and be limited to those necessary for safe and efficient delivery of the works.</p> | likelihood of vessel collisions, allisions and other marine incidents.                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | ✓   | X               | <p>Development of and adherence to a Marine Pollution Contingency Plan.</p> <p>The Marine Pollution Contingency Plan will outline the approach for managing and reducing risk of pollution and procedures to protect personnel and to be followed in the event of a pollution incident.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Implementation of a Marine Pollution Contingency Plan will reduce the likelihood and potential severity of pollution incidents during the construction and O&M of the Bellrock Offshore Transmission Infrastructure. This will help to reduce the potential for major accidents and disasters related to marine pollution events associated with the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | X               | An Environmental Management Plan will be prepared and implemented to set out the procedures to avoid, reduce, and manage potential environmental effects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Implementation of the Environmental Management Plan will ensure that measures to avoid, reduce and manage environmental                                                                                                                                                                                                                                                                             | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                          | Relevance to Assessment                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                         |                 |
|                            |     |                 | arising across the construction and O&M of the Bellrock Offshore Transmission Infrastructure, in accordance with relevant international and national legislation and guidance.                                                                                                                                                                       | effects are applied consistently throughout construction and O&M. This will support the effective management of environmental risks and incident prevention.                                                                                                                                                            |                 |
| ✓                          | ✓   | ✓               | Advance warning and accurate location details of construction, maintenance, and decommissioning activities, associated Safety Zones, and advisory passing distances will be given via notifications to mariners and Kingfisher Bulletins.                                                                                                            | Advance notification of construction, O&M, and decommissioning activities, Safety Zones and advisory passing distances will provide marine users with timely information to support operational planning. This will reduce the likelihood of vessel interaction with the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | X   | X               | Development of Unexploded Ordnance (UXO) Threat and Risk Assessment. All UXO detonations will be subject to a risk assessment undertaken in accordance with relevant guidance such as publication C754 Assessment and Management of UXO Risk in the Marine Environment (Construction Industry Research and Information Association, 2015).           | Undertaking a detailed UXO Threat and Risk Assessment will support the selection of appropriate clearance methods and risk controls. This will reduce the likelihood and consequences of incidents associated with UXO clearance.                                                                                       | Tertiary        |
| ✓                          | X   | X               | Where boulder and/or UXO removal is required during site preparation works or any phase of the Bellrock Offshore Transmission Infrastructure, the location of UXO and large boulders that are relocated and may pose a snagging risk for fishing gear, will be disclosed to the fishing industry within a timely manner and in an accessible format. | Timely communication of the location of relocated boulders and UXO will improve awareness of potential seabed hazards. This will reduce the risk of snagging incidents and interaction with marine users.                                                                                                               | Tertiary        |
| ✓                          | ✓   | X               | Preparation of an INNSMP to include provisions for invasive non-native species management.<br><br>The INNSMP will implement biosecurity measures in line with international and national regulations and guidance, namely:                                                                                                                           | Implementation of INNSMP will reduce the risk of introducing and spreading invasive non-native species. This will support the resilience and stability of the marine environment in which the Bellrock Offshore Transmission Infrastructure is located.                                                                 | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Relevance to Assessment                                                                                                                                                                                                                              | Mitigation Type |
|----------------------------|-----|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                      |                 |
|                            |     |                 | <ul style="list-style-type: none"> <li>International Convention for the Prevention of Pollution from Ships (MARPOL), which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive non-native species from ballast water; and</li> <li>Consideration of guidance from the IMO (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul>               |                                                                                                                                                                                                                                                      |                 |
| ✓                          | ✓   | ✓               | <p>Adherence to the following international and national regulations and guidance, namely:</p> <ul style="list-style-type: none"> <li>MARPOL, which sets out requirements, including appropriate vessel maintenance;</li> <li>The International Convention for the Control and Management of Ships' Ballast Water and Sediments, which provides an international framework for the control of transfer of potentially invasive species from ballast water; and</li> <li>Consideration of guidance from the IMO (2023) on the control and management of ships' biofouling to minimise the transfer of invasive aquatic species.</li> </ul> | Adherence to established international regulations and guidance relating to vessel maintenance, ballast water management and biofouling control will support good environmental practice and reduce risks associated with project vessel operations. | Tertiary        |
| ✓                          | ✓   | ✓               | Where appropriate, guard vessels (or other suitable methods) will be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk to surface navigation during construction, O&M, and decommissioning phases.                                                                                                                                                                                                                                                                                                                                       | Use of guard vessels, or other suitable measures, will support compliance with Safety Zones and advisory passing distances. This will reduce the likelihood of navigational incidents involving the Bellrock Offshore                                | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Relevance to Assessment                                                                                                                                                                                                                                                     | Mitigation Type |
|----------------------------|-----|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                             |                 |
|                            |     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Transmission Infrastructure and third-party vessels.                                                                                                                                                                                                                        |                 |
| X                          | ✓   | X               | All relevant Bellrock Offshore Transmission Infrastructure will be appropriately marked on all physical and electronic nautical charts as distributed by the United Kingdom Hydrographic Office.                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Marking all relevant Bellrock Offshore Transmission Infrastructure on physical and electronic nautical charts will improve awareness among marine users. This will reduce the likelihood of vessel interactions with the Bellrock Offshore Transmission Infrastructure.     | Tertiary        |
| ✓                          | ✓   | ✓               | Development of, and adherence to, an Lighting and Marking Plan (LMP). The LMP will set out the lighting and marking requirements for the Bellrock Offshore Transmission Infrastructure during the construction, O&M, and decommissioning phases, including compliance with all relevant navigation and aviation legislative requirements. The LMP will ensure that lighting is minimised, so far as reasonably practicable, whilst maintaining compliance with these requirements. Procedures will also be established for the reporting and timely rectification of lighting and marking failures, with interim hazard warnings implemented where required. | Implementation of the LMP will ensure the Bellrock Offshore Transmission Infrastructure is appropriately marked and illuminated in accordance with relevant requirements. This will improve visibility and reduce risks associated with navigation and aviation activities. | Tertiary        |
| ✓                          | ✓   | ✓               | Any dropped objects during works associated with the Bellrock OFTDA will be reported in line with the Marine Directorate Licensing Operations Team's guidance on the 'accidental deposit of an object at sea' (Marine Directorate, 2024) and objects will be recovered where they pose a hazard to other marine users and where recovery is practicable.                                                                                                                                                                                                                                                                                                     | Reporting and, where practicable, recovering dropped objects will minimise the presence of seabed hazards associated with the Bellrock Offshore Transmission Infrastructure. This will reduce risks to existing marine infrastructure and other users.                      | Tertiary        |



| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevance to Assessment                                                                                                                                                                                                                                | Mitigation Type |
|----------------------------|-----|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                        |                 |
| ✓                          | ✓   | X               | Compliance with Marine Guidance Note 654 and development and implementation of an Emergency Response Cooperation Plan (ERCoP). The Applicant will ensure compliance with Marine Guidance Note 654 and its annexes, where applicable, including consultation with the MCA, completion of a SAR checklist, and development and implementation of an ERCoP. The ERCoP will set out procedures and responsibilities for responding to emergency situations during the construction, O&M, and decommissioning phases of the Bellrock Offshore Transmission Infrastructure, as applicable. This will include arrangements to support SAR and other emergency response activities, together with emergency contacts, reporting and escalation procedures, and clearly defined roles and responsibilities. | Implementation of the ERCoP and compliance with MGN 654 will ensure appropriate emergency preparedness and response arrangements are established. This will reduce the consequences of emergency situations and support effective incident management. | Tertiary        |
| ✓                          | ✓   | X               | Marine coordination will be implemented to manage project vessels throughout construction, O&M, and decommissioning periods, including in liaison with relevant ports and harbours.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Marine coordination will support the safe and efficient management of project vessels. This will reduce the potential for vessel conflicts and marine incidents.                                                                                       | Tertiary        |
| ✓                          | ✓   | ✓               | Project vessels will ensure compliance with international marine regulations as adopted by the Flag State, including the Convention on the International Regulations for Preventing Collisions at Sea and the International Convention for the Safety of Life at Sea, thereby reducing the risk of navigational incidents, including vessel collisions, and associated risks to other sea users and the marine environment.                                                                                                                                                                                                                                                                                                                                                                        | Compliance with international maritime safety regulations will reduce the likelihood of navigational incidents involving project vessels within the marine environment.                                                                                | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                     | Relevance to Assessment                                                                                                                                                                                                                                                                                                                                 | Mitigation Type |
|----------------------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                         |                 |
| ✓                          | ✓   | ✓               | A Navigational Risk Assessment will be developed for the Bellrock OfTDA, which will include consideration of the OfSS(s) and OfRCS(s).                                                                                                                                                                                          | The Navigational Risk Assessment will identify and evaluate navigational risks associated with the Bellrock Offshore Transmission Infrastructure and inform the development of appropriate risk control measures. This will support the reduction of vessel collision and allision risks.                                                               | Tertiary        |
| X                          | X   | ✓               | Development of, and adherence to, a Decommissioning Programme.<br><br>The Decommissioning Programme will set out the framework for the safe, orderly, and environmentally acceptable decommissioning and removal of the Bellrock Offshore Transmission Infrastructure, in the interests of safety and environmental protection. | Implementation of a Decommissioning Programme will ensure decommissioning is planned and undertaken in a safe, orderly and controlled manner. This will minimise risks associated with the decommissioning of the Bellrock Offshore Transmission Infrastructure.                                                                                        | Tertiary        |
| ✓                          | ✓   | X               | Appropriate marking of the Bellrock OfTDA on aeronautical charts. This will include provision of the positions and heights of structures to Civil Aviation Authority, Ministry of Defence, and Defence Geographics Centre.                                                                                                      | Provision of Bellrock Offshore Transmission Infrastructure positions and heights for inclusion on aeronautical charts will improve awareness of the Bellrock Offshore Transmission Infrastructure among airspace users. This will reduce the likelihood of aviation safety incidents associated with the Bellrock Offshore Transmission Infrastructure. | Tertiary        |
| ✓                          | ✓   | ✓               | Lights, marks, sounds, signals, and other aids to navigation will be exhibited as required by Northern Lighthouse Board, MCA, and the Civil Aviation Authority including the buoyed construction/decommissioning areas.                                                                                                         | Provision of lights, marks, sounds, signals and other aids to navigation will improve awareness of the Bellrock Offshore Transmission Infrastructure. This will support safe navigation and reduce the risk of vessel interactions with the Bellrock Offshore Transmission Infrastructure.                                                              | Tertiary        |

| Relevant Development Phase |     |                 | Embedded Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevance to Assessment                                                                                                                                                                                                                                                                                                      | Mitigation Type |
|----------------------------|-----|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Construction               | O&M | Decommissioning |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                              |                 |
| ✓                          | X   | X               | <p>Development of, and adherence to, a Construction Method Statement.</p> <p>The Construction Method Statement will describe the methods for construction for all the consented Bellrock Offshore Transmission Infrastructure and set out the measures to be implemented to avoid or reduce adverse effects on the environment and legitimate users of the sea during the construction phase. This will include a clear definition of roles and responsibilities and reference to relevant Health and Safety protocols.</p> | <p>Implementation of a Construction Method Statement will ensure construction works are undertaken in a controlled and coordinated manner, with appropriate procedures in place to manage safety risks. This will reduce the likelihood of incidents arising during construction.</p>                                        | Tertiary        |
| X                          | ✓   | X               | <p>Regular and periodic inspections and maintenance of the Offshore Transmission Infrastructure will be undertaken over its operational life to identify and remediate any damage and deterioration and maintain good working conditions (including any debris entangled with the Offshore Transmission Infrastructure).</p> <p>This will include but not be limited to surveys of subsea infrastructure.</p> <p>These will be included in the Operation and Maintenance Plan.</p>                                          | <p>Regular inspection and maintenance will help maintain the integrity of the Bellrock Offshore Transmission Infrastructure throughout its operational life. This will reduce the likelihood of incidents associated with the deterioration, damage or malfunction of the Bellrock Offshore Transmission Infrastructure.</p> | Tertiary        |

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## 19.6 Scoping of Potential Impacts

1560. It is proposed the following hazard types will be **scoped in** for further assessment in the Bellrock OfTDA EIA:

- Fire;
- Extreme temperature (heat wave, cold snaps)/high winds/storm;
- Electromagnetic fields;
- Extreme weather events;
- Electricity failure;
- Exposure to high voltage;
- Industrial accidents;
- Natural disasters;
- Building/structure collapse/design error;
- Vessel collision or allision;
- Helicopter collision;
- Exposed cables leading to vessel snagging;
- Disturbance of UXO within the Bellrock OfTDA; and
- Workplace accidents.

1561. It should be noted that effects from accidental releases of pollution are proposed to be **scoped out** of the Bellrock OfTDA EIA (see **Chapter 5: Marine Geology, Oceanography, and Physical Processes**) due to implementation of mitigation measures to reduce risk of this as far as is reasonably practicable.

### 19.6.1 Bellrock OfTDA Whole Project Assessment

1562. The Bellrock OfTDA Whole Project Assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment** and will consider how potential combined interactions between the Bellrock Offshore Transmission Infrastructure, the Bellrock Onshore Transmission Infrastructure and the Bellrock Wind Farm Infrastructure may have the potential to alter the likelihood or consequence of identified major accidents and disaster scenarios and the significance of any resulting environmental effects. Refer to **Plate 4.3 (Chapter 4: Approach to Scoping and Environmental Impact Assessment)** for the approach and methodology that will be followed for the Bellrock OfTDA Whole Project Assessment.

1563. Given the offshore location and nature of the Bellrock OfTDA, interactions with the Bellrock WFDA are anticipated to represent the most relevant consideration for the Bellrock OfTDA Whole Project Assessment. Potential interactions with the Bellrock OnTDA will be considered where relevant;

however, the physical separation and differing nature of the Bellrock OfTDA and Bellrock OnTDA are anticipated to limit the potential for interaction between major accident and disaster scenarios.

### 19.6.2 Potential Cumulative Effects

1564. The Bellrock OfTDA Cumulative Effects Assessment will be undertaken in accordance with the methodology set out in **Section 4.7** of **Chapter 4: Approach to Scoping and Environmental Impact Assessment**. An overview of the Bellrock OfTDA assessment process, including the relationship between the Bellrock OfTDA Whole Project Assessment and the Cumulative Effects Assessment, is provided in **Plate 4.3**.
1565. However, due to the nature of major accidents and disasters, cumulative effects with other plans and projects are not anticipated. Major accidents and disasters are generally discrete events associated with a specific activity or infrastructure, and the likelihood and consequences of such events are assessed on a project-specific basis. Therefore, cumulative assessment of major accidents and disasters is proposed to be scoped out of the Bellrock OfTDA EIA.

### 19.6.3 Potential Transboundary Effects

1566. The transboundary assessment will follow the general methodology set out in **Chapter 4: Approach to Scoping and Environmental Impact Assessment**. However, due to the discrete nature of major accidents and disasters and the nature, scale, and location of the Bellrock OfTDA, no credible major accident and disaster scenarios have been identified that are anticipated to result in significant environmental effects extending beyond UK waters. Therefore, transboundary impacts are proposed to be scoped out of the Bellrock OfTDA EIA.

### 19.6.4 Summary of Potential Impacts

1567. A summary of potential impacts scoped in and scoped out from further assessment in the Bellrock OfTDA EIA Report is provided in **Table 19.4**.

**Table 19.4: Summary of Potential Impacts Scoped In (✓) or Scoped Out (X) for Major Accidents and Disasters**

| Potential Hazard                                              | Receptor(s)                                   | Scoped In or Scoped Out (✓ or X) |     |                 |
|---------------------------------------------------------------|-----------------------------------------------|----------------------------------|-----|-----------------|
|                                                               |                                               | Construction                     | O&M | Decommissioning |
| Fire                                                          | Bellrock Offshore Transmission Infrastructure | ✓                                | ✓   | ✓               |
| Extreme temperature (heat wave, cold snaps)/high winds/storm; |                                               | ✓                                | ✓   | ✓               |
| Electromagnetic fields;                                       |                                               | ✓                                | ✓   | ✓               |
| Extreme weather events;                                       |                                               | ✓                                | ✓   | ✓               |
| Electricity failure;                                          |                                               | ✓                                | ✓   | ✓               |
| Exposure to high voltage;                                     |                                               | ✓                                | ✓   | ✓               |
| Industrial accidents                                          |                                               | ✓                                | ✓   | ✓               |
| Natural disasters (such as earthquakes)                       |                                               | ✓                                | ✓   | ✓               |
| Building/structure collapse/design error                      |                                               | ✓                                | ✓   | ✓               |
| Vessel collision or allision                                  |                                               | ✓                                | ✓   | ✓               |
| Helicopter collision                                          |                                               | ✓                                | ✓   | ✓               |
| Exposed cables leading to vessel snagging                     |                                               | ✓                                | ✓   | ✓               |
| Disturbance of UXO within the Bellrock OfTDA                  |                                               | ✓                                | ✓   | ✓               |
| Workplace accidents.                                          |                                               | ✓                                | ✓   | ✓               |
| Bellrock OfTDA Whole Project Assessment                       | Bellrock Project                              | ✓                                | ✓   | ✓               |
| Cumulative effects                                            | N/A                                           | X                                | X   | X               |
| Transboundary effects                                         | N/A                                           | X                                | X   | X               |

## 19.7 Proposed Approach to Impact Assessment

1568. Whilst there is no standard methodology for the assessment of major accidents and disasters within the Bellrock OfTDA EIA Report, IEMA (now the Institute of Sustainability and Environmental Professionals) have prepared 'Major Accidents and Disasters in EIA: A Primer' (IEMA, 2020) which provides guidance on a risk-based approach. The Bellrock OfTDA EIA Report will assess the likelihood of the significant threat or hazard occurring, and the embedded mitigation to ensure a risk is ALARP (or avoided completely). The hazards will be identified in respect of the potential vulnerability of the Bellrock Offshore Transmission Infrastructure to disasters, and the potential of the Offshore Transmission Infrastructure to cause major accidents or disasters.
1569. Where required, additional mitigation measures will be proposed to manage the identified risks to the environment.
1570. The following steps will be undertaken during the risk assessment:
- **Step 1: Hazard Identification** – identify hazards from a long list of potential major accident and disaster scenarios. Major accidents with little or no relevance to the Bellrock Offshore Transmission Infrastructure will not be included (e.g. volcanic eruptions). Sources will include the UK Government National Risk Register – 2025 edition (UK Government, 2025) and further relevant sources. This step will also involve identification of the receptors in the existing environment;
  - **Step 2: Hazard Screening** – Screen identified hazards to determine those relevant to the Bellrock Offshore Transmission Infrastructure and requiring further assessment;
  - **Step 3: Risk Evaluation** – Evaluate the risks associated with the identified hazards, including consideration of the likelihood of occurrence, potential impacts and consequences for receptors, and the identification of prevention, minimisation, and mitigation measures; and
  - **Step 4: Residual Risk** – Determine whether identified risks has been reduced to ALARP and identify any residual risks and their potential consequences for receptors should a major accident or disaster occur.
1571. Where a pathway or linkage is established, an assessment will be carried out to determine whether embedded design measures or legal requirements, codes and standards adequately control the potential major accidents and disasters. Reference will be made to other technical chapters of the Bellrock OfTDA EIA Report where appropriate and where additional studies have been carried out.
1572. The scope of the major accidents and disasters chapter of the Bellrock OfTDA EIA Report will be determined by the nature of the potential major accidents that could be associated with the Bellrock Offshore Transmission Infrastructure, having regard to the potential impacts associated with relevant environmental disciplines in this **Bellrock OfTDA Scoping Report** as set out in **Section 19.1**.
1573. The potential for significant adverse effects from the Bellrock Offshore Transmission Infrastructure on the environment deriving from its vulnerability to risks of relevant major accidents and disasters will be assessed in line with requirements set out under the EIA Directive.



## 19.8 Scoping Questions for Consultees

1574. The following questions are posed to consultees to help them frame and focus their response to the major accidents and disasters scoping exercise, which will in turn inform the EIA:

- Do you agree that all the relevant data sources have been identified in **Section 19.5.3**?
- Do you agree that all the relevant legislation, policy and guidance have been identified in **Section 19.2**?
- Do you agree with the proposed approach to defining the study area as presented in **Section 19.5.1**?
- Do you agree with the scope proposed for the major accidents and disasters chapter of the Bellrock OfTDA EIA Report?
- Do you agree that all potential hazards or major accident and disaster scenarios that should be assessed in the Bellrock OfTDA EIA have been identified by the Applicant?
- Do you have any other matters or information sources that you wish to present?

## 19.9 References

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UK Government (2025). National Risk Register – 2025 Edition. Available at: [https://assets.publishing.service.gov.uk/media/67b5f85732b2aab18314bbe4/National\\_Risk\\_Register\\_2025.pdf](https://assets.publishing.service.gov.uk/media/67b5f85732b2aab18314bbe4/National_Risk_Register_2025.pdf)

UK Climate Projections (UKCP) (various dates). UK Climate Projections (UKCP18) guidance and reports. Available at: <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/guidance-reports>

## 20 Summary and Next Steps

1575. This **Bellrock Offshore Transmission Development Area (OfTDA) Scoping Report** accompanies a request for a formal Scoping Opinion from the Marine Directorate - Licensing Operations Team (MD-LOT), acting on behalf of the Scottish Ministers, in relation to the construction, operation and maintenance and decommissioning of the Bellrock Offshore Transmission Infrastructure.
1576. The purpose of this **Bellrock OfTDA Scoping Report** is to provide stakeholders with sufficient information on the Bellrock Offshore Transmission Infrastructure and allow for engagement with stakeholders on the key issues to be addressed in the Bellrock OfTDA Environmental Impact Assessment (EIA), as well as the baseline data sources and assessment methodologies to be used. This **Bellrock OfTDA Scoping Report** contains the information required under the Marine Works (Environmental Impact Assessment) Regulations 2007 and the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017, as set out in **Section 1.6** in **Chapter 1: Introduction**.
1577. For clarity, the Bellrock OfTDA Scoping Boundary has been defined to allow flexibility during the ongoing site selection process. The Bellrock OfTDA Scoping Boundary will be refined on completion of the site selection process to form the Bellrock OfTDA upon which the OfTDA Marine Licence Application will be based (see **Section 1.4** of **Chapter 1: Introduction**). The Bellrock OfTDA EIA will be based on the refined Bellrock OfTDA.
1578. Within this **Bellrock OfTDA Scoping Report**, the potential environmental impacts associated with the Bellrock Offshore Transmission Infrastructure have been identified for each technical topic and have undergone a scoping assessment to determine whether they should be scoped in or scoped out of further assessment in the Bellrock OfTDA EIA. Impacts have been proposed to be scoped out where there is no source-pathway-receptor relationship, or where the impact is not considered to have the potential to result in likely significant environmental effects. A summary of the scoping assessment and conclusions for each technical topic is provided within each technical chapter:
- **Section 5.6.5 of Chapter 5: Marine Geology, Oceanography, and Physical Processes;**
  - **Section 6.6.7 of Chapter 6: Intertidal and Benthic Ecology;**
  - **Section 7.6.7 of Chapter 7: Fish and Shellfish Ecology;**
  - **Section 8.6.7 of Chapter 8: Marine Mammals;**
  - **Section 9.6.7 of Chapter 9: Intertidal and Offshore Ornithology;**
  - **Section 10.6.5 of Chapter 10: Commercial Fisheries;**
  - **Section 11.6.5 of Chapter 11: Shipping and Navigation;**
  - **Section 12.6.5 of Chapter 12: Aviation and Radar;**
  - **Section 13.6.7 of Chapter 13: Marine Infrastructure and Other Users;**
  - **Section 14.6.7 of Chapter 14: Marine Archaeology and Cultural Heritage;**

- **Section 15.6.8 of Chapter 15: Seascape, Landscape and Visual Impact:**
- **Section 16.6.5 of Chapter 16: Socioeconomics and Tourism;**
- **Section 17.6.6 of Chapter 17: Climate Change;**
- **Section 18.6.5 of Chapter 18: Offshore Air Quality; and**
- **Section 19.6.4 of Chapter 19: Major Accidents and Disasters.**

1579. The embedded mitigation measures currently proposed for the Bellrock Offshore Transmission Infrastructure are presented in **Appendix B: Mitigation and Monitoring Register (Volume 1)**. These comprise primary mitigation measures, incorporated through project design, and tertiary mitigation measures, reflecting standard industry practice. As the project design evolves and the EIA progresses, the embedded mitigation measures may be refined and additional embedded mitigation measures identified. Where the preliminary impact assessment identifies the need for further mitigation to reduce the magnitude of potential impacts, secondary mitigation measures will also be developed. The Bellrock OfTDA EIA Report will include an updated Mitigation and Monitoring Register to record all mitigation measures and identify how they will be implemented and, where appropriate, secured through the consenting process.
1580. The Applicant invites consultees to consider the information presented in this **Bellrock OfTDA Scoping Report**, the **Bellrock OfTDA Habitats Regulations Appraisal Screening Report (Volume 2)**, and the **Bellrock OfTDA Marine Protected Area Screening Report (Volume 3)**, and to provide comments on the proposed approach and scoping conclusions. Responses submitted by statutory and non-statutory consultees to MD-LOT will inform the Scoping Opinion. The Applicant will have regard to the Scoping Opinion when undertaking the Bellrock OfTDA EIA.
1581. This **Bellrock OfTDA Scoping Report** is available on MD-LOT's website and also on the Bellrock Project's website: [www.bellrockwind.co.uk/](http://www.bellrockwind.co.uk/).



[www.bellrockwind.co.uk](http://www.bellrockwind.co.uk)