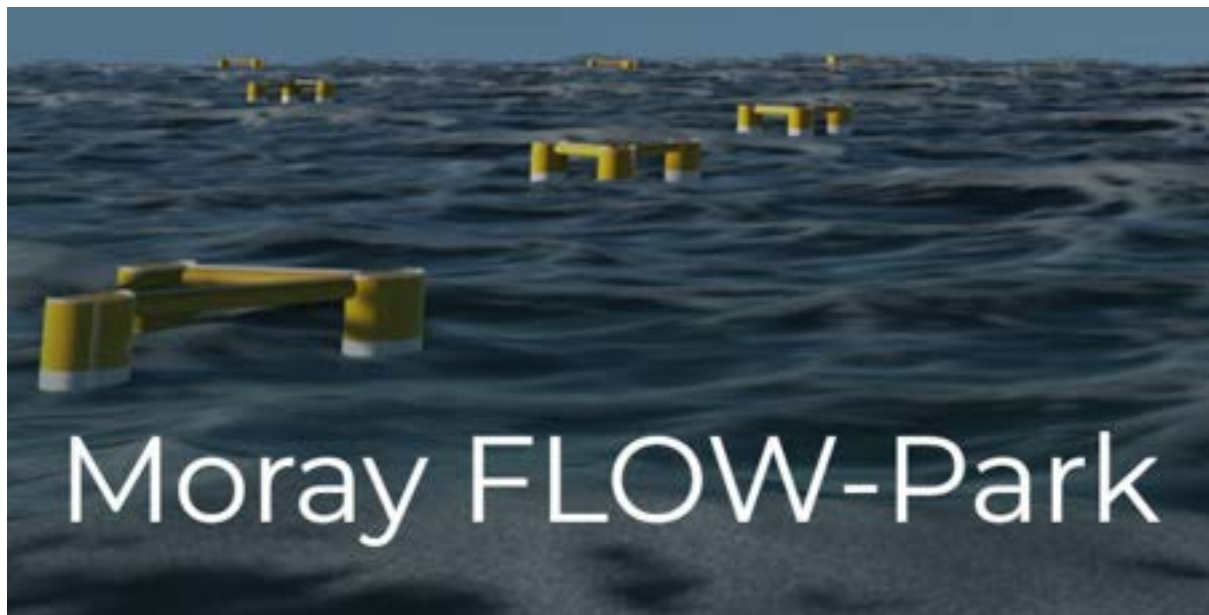




## Moray FLOW-Park

### Habitats Regulations Appraisal Screening Assessment

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## Glossary

| Term                                     | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (The) Developer                          | Organisation or consortium responsible for planning, constructing, and operating a project under the terms of a lease or agreement with Crown Estate Scotland (Offshore Solution Group Limited).                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Competent Authority                      | The public body or organisation legally responsible for ensuring compliance with the Habitat Regulations. For the Project's Inshore Habitats Regulations Appraisal (HRA) Screening Report, the Competent Authority is the Scottish Ministers.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Design Envelope                          | Project parameters that are used in the Environmental Impact Assessment (EIA) for the Moray FLOW-Park. This comprises a description of the range of possible elements that make up the project design options under consideration, as set out in detail in the project description when the exact engineering parameters are not yet known. This is often referred to as a Rochdale Envelope" approach.                                                                                                                                                                                                                                                                 |
| Environmental Impact Assessment (EIA)    | A statutory process whereby planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements on the EIA Directive and EIA Regulations, including the publication of an Environmental Impact Assessment (EIA) Report.                                                                                                                                                                                                                                                                                                             |
| European Protected Species (EPS) Licence | Species of plants and animals (other than birds) that are protected under Annex IV of the EU Habitats Directive (Directive 92/43/EEC) due to their rarity or threatened status across Europe. These species are afforded strict protection within all EU Member States, including prohibitions on deliberate capture, killing, disturbance, or destruction of their breeding sites or resting places.                                                                                                                                                                                                                                                                   |
| Floating Foundations                     | Floating substructure, moored to the seabed by anchoring systems, designed to support the WTG.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Foundation Anchors                       | The structure which anchors the moorings to the seabed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Foundation Moorings                      | The chains/synthetics that connect the FLOW foundations to the Foundation Anchors to maintain floater station.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Habitats Regulations Appraisal (HRA)     | A process required under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), the Conservation of Habitats and Species Regulations 2017, and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (commonly known as the Habitat Regulations), which helps determine likely significant effects and (where appropriate) assesses adverse impacts on the integrity of European conservation sites and Ramsar sites. The process consists of up to four stages of assessment: screening, appropriate assessment, assessment of alternative solutions and assessment of imperative reasons of over-riding public interest (IROPI). |

| Term                                                    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Habitats Regulations                                    | A term commonly used to refer to the Conservation (Natural Habitats, &c,) Regulations 1994 (as amended), the Conservation of Habitats and Species Regulations 2017; and the Conservation of Offshore Marine Habitats and Species Regulations 2017, which transpose the EU Habitats and Birds Directives into Scots law. These Regulations provide the legal framework for the protection of European sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), and underpin the Habitats Regulations Appraisal (HRA) process. The Regulations apply to both terrestrial and offshore areas under Scottish jurisdiction and are particularly relevant to assessing the impacts of developments such as offshore wind farms. |
| Likely Significant Effect (LSE)                         | In the context of Habitats Regulations Assessment (HRA). A Likely Significant Effect (LSE) refers to the result of the screening exercise that determines if the Project “would be likely to have a significant effect” on a European site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Marine Directorate                                      | The Directorate responsible for the integrated management of Scottish waters. Acts on behalf of the Scottish Ministers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Marine Directorate – Licensing Operations Team (MD-LOT) | The Marine Directorate responsible for marine licensing within the Scottish inshore region (between 0 and 12 nautical miles (nm)) and in the Scottish offshore region (between 12 and 200 nm). MD-LOT acts on behalf of the Scottish Ministers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Marine Licence                                          | Licence granted under the Marine (Scotland) Act 2010 and/or the Marine and Coastal Access Act 2009 where relevant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Maximum Design Scenario                                 | The maximum design parameters for each inshore project design asset considered to be a worst case for any given assessment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Moray FLOW-Park Area                                    | The area in which the floating foundations infrastructure for Moray FLOW-Park will be located.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| National Site Network                                   | A network of protected sites across the UK established post-Brexit, equivalent to the former Natura 2000 network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Inshore Project Boundary                                | The boundary within which all inshore development will take place.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Inshore Scoping Opinion                                 | The Scoping Opinion that will be provided by Marine Directorate - Licensing Operations Team (MD-LOT) under the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017, setting out the Scottish Ministers’ opinion on the content of the Inshore EIAR including those issues that will or will not need to be addressed in the Inshore EIA.                                                                                                                                                                                                                                                                                                                                                                                             |
| O&M – Operations and Maintenance                        | The term used within this HRA Screening Report and Inshore EIAR, relates to the operation of the FLOW Park and the maintenance of the permanently installed infrastructure at the FLOW-Park, this specifically excludes any maintenance activities on FLOW Foundations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Term                         | Definition                                                                                                                                                                                                                                  |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Order Limits                 | The Inshore limits within which Moray FLOW-Park may be carried out.                                                                                                                                                                         |
| Project                      | The Moray FLOW-Park comprising all associated permanently installed infrastructure, and the operation of the site.                                                                                                                          |
| Red Line Boundary            | The boundary within which all inshore development will take place.                                                                                                                                                                          |
| Wind Turbine Generator (WTG) | The wind turbines that generate electricity consisting of tubular towers and blades attached to a nacelle housing mechanical and electrical generating equipment. There will not be any fully integrated WTG's stored within the FLOW-Park. |

## Acronyms and Abbreviations

| Term   | Definition                                                    |
|--------|---------------------------------------------------------------|
| AA     | Appropriate Assessment                                        |
| BDMPS  | Biologically Defined Minimum Population Scale                 |
| CES    | Coastal East Scotland                                         |
| CJEU   | Court of Justice of the European Union                        |
| cSAC   | candidate Special Area of Conservation                        |
| DECC   | Department of Energy and Climate Change                       |
| DTA    | David Tyldesley Associates                                    |
| EIA    | Environmental Impact Assessment                               |
| EU     | European Union                                                |
| FCS    | Favourable Conservation Status                                |
| FLOW   | Floating Offshore Wind                                        |
| GNS    | Greater North Sea                                             |
| HRA    | Habitats Regulations Appraisal                                |
| IAMMWG | Inter-Agency Marine Mammal Working Group                      |
| INNS   | Invasive Non Native Species                                   |
| INTOG  | Innovation and Targeted Oil and Gas                           |
| IROPI  | Imperative Reasons of Overriding Public Interest              |
| JNCC   | Joint Nature Conservation Committee                           |
| LSE    | Likely Significant Effect                                     |
| MCA    | Maritime and Coastguard Agency                                |
| MDS    | Maximum Design Scenario                                       |
| MD-LOT | Marine Directorate Licensing Operations Team                  |
| MHWS   | Mean High Water Springs                                       |
| MPA    | Marine Protected Area                                         |
| MSL    | Mean Sea Level                                                |
| MU     | Management Unit                                               |
| NS     | North Sea                                                     |
| O&M    | Operation and Maintenance of the site and site infrastructure |
| OSG    | Offshore Solutions Group Ltd                                  |
| OWF    | Offshore Wind Farms                                           |

| Term | Definition                              |
|------|-----------------------------------------|
| QI   | Qualifying Interest                     |
| RIAA | Report to Inform Appropriate Assessment |
| SAC  | Special Area of Conservation            |
| SCI  | Sites of Community Importance           |
| SNH  | Scottish Natural Heritage               |
| SPA  | Special Protection Area                 |
| SSC  | Suspended Sediment Concentration        |
| TTS  | Temporary Threshold Shift               |
| UXO  | Unexploded Ordnance                     |
| WTG  | Wind Turbine Generator                  |
| ZoI  | Zone of Influence                       |

## Units

| Unit            | Definition         |
|-----------------|--------------------|
| km <sup>2</sup> | Kilometres squared |
| nm              | Nautical mile      |
| km              | Kilometres         |
| m               | metre              |

## 1 Introduction

### 1.1 Background

- 1.1.1.1 Offshore Solutions Group Ltd (OSG), acting on behalf of FLOW Park Investment Ltd, is developing the Moray FLOW-Park (the 'Project') within the Moray Firth. This document serves as the Inshore Habitats Regulations Appraisal (HRA) Screening Report for the Project, submitted alongside the Inshore Scoping Report to the Marine Directorate Licensing Operations Team (MD-LOT).
- 1.1.1.2 The Project endeavours to address a logistical need within the offshore wind industry by providing inshore storage areas for Floating Offshore Wind (FLOW) foundations. This capability is necessary to manage port constraints and weather-related delays associated with the installation of large numbers of FLOW units required for ScotWind and Innovation and Targeted Oil and Gas (INTOG) projects. For further details, see Chapter 1: Introduction of the Inshore Scoping Report.
- 1.1.1.3 The Project Boundary is summarised below:
  - The Moray FLOW-Park: the location where the FLOW Foundations and Security Monitoring Buoys will be moored. The Moray FLOW-Park project area is 18 km<sup>2</sup> and approximately 1.06 km from the shore at its closest point (see Figure 1-1):
- 1.1.1.4 Further details of the Project Design Envelope and activities are provided in Chapter 3: Project Description of the Inshore Scoping Report.
- 1.1.1.5 The FLOW Foundations will generally be stored over the 'off' season (autumn/winter/spring) where weather and metocean conditions do not allow for the safe towing of fully integrated FLOW Units out to a Developer's final location. Further information on seasonality of the Project is provided in Section 3.
- 1.1.1.6 This HRA Screening Report considers all temporary and permanent infrastructure and activities associated with the Project construction, Operation and Maintenance (O&M) and decommissioning seaward of Mean High Water Springs (MHWS).

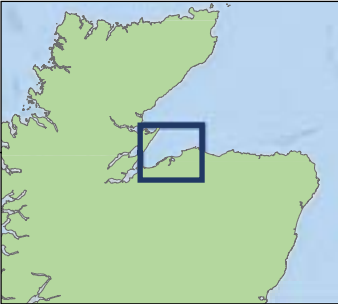


Moray FLOW-Park  
HRA Screening

Location of the Project

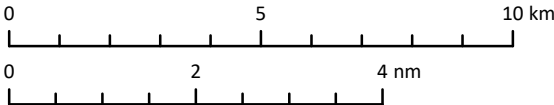
Legend

Moray FLOW-Park



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Coordinate System:  
WGS 1984 UTM Zone 30N



|               |            |          |            |             |
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| Scale         | Date       | Drawn by | Checked by | Approved by |
| 1:150,000 @A3 | 12/01/2026 | EV       | BPHB       | CC          |

Offshore Solutions Group  
4th Floor,  
205 Regent Street,  
London,  
W1B 4HB

www.offshoresolutionsgroup.com  
+44 208 123 3783



Figure 1-1

## 1.2 Purpose of the Report

- 1.2.1.1 The purpose of this HRA Screening Report is to inform the HRA process for the Project, as required under The Conservation (Natural Habitats, &c.) Regulations 1994 ('the Habitat Regulations') for projects up to 12 nautical miles (nm) from land.
- 1.2.1.2 The report provides information to enable the screening of the marine elements associated with the Project as undertaken by the competent authority, in this case MD-LOT on behalf of the Scottish Ministers. The aim of the screening exercise ('Screening') is to test whether no Likely Significant Effect (LSE) can be demonstrated on 'European sites' which encompasses sites within the National Site Network (the United Kingdom [UK]'s framework of protected areas) and Natura 2000 (the European Union (EU)-wide network of protected areas), in addition to Ramsar sites (as designated under the Ramsar Convention), either alone or in-combination with other plans or projects.
- 1.2.1.3 The assessment provided in this report is based on the current proposed scope and nature of the Project and current understanding of the impact ranges and protected Qualifying Interests (QIs) of European and Ramsar sites. Screening is undertaken through the review of information associated with the Project, scientific evidence, and site-specific/other regional information currently available.
- 1.2.1.4 As the design parameters, ongoing baseline site-specific and regional level environmental surveys are complete and analysed, ongoing consultation will take place with respect to the assessment of the potential for LSE on European/Ramsar sites. This will further inform any future Report to Inform Appropriate Assessment (RIAA).
- 1.2.1.5 A review of the Inshore Scoping Opinion will also be used to identify any further requirements of the RIAA, ensuring the assessment is aligned with the expectations of MD-LOT and other statutory consultees.

## 1.3 Consultation

- 1.3.1.1 Consultation is ongoing for the Project. In February 2026 an EIA Screening Request was sent to MD-LOT (OSG, 2025). In April 2026, an EIA Screening Opinion was received (Scottish Government, 2026) confirming that the Project constituted an EIA project under The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 and identified potential significant effects on protected sites. Comments received have been taken into consideration and actioned where appropriate and applicable during the development of this Inshore HRA Screening Report.
- 1.3.1.2 Consultation of relevance to HRA is presented in Table 1-1.

Table 1-1: Consultation Responses relevant for HRA

| Date and Document                         | Consultee | Topic                                               | Comment Received                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | How and Where addressed in This Document                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------|-----------|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07 April 2026<br>EIA Screening<br>Opinion | MD-LOT    | Protected Sites                                     | The Proposed Works are wholly within the Moray Firth Special Protection Area (“SPA”) and the Moray Firth Special Area of Conservation (“SAC”); and are adjacent to the Moray and Nairn Coast SPA/Ramsar site, the Culbin Bar SAC, the Culbin Sands, Culbin Forest and Findhorn Bay Site of Special Scientific Interest (“SSSI”). In addition, due to proximity, the Proposed Works also has connectivity to the Dornoch Firth and Morrich More SAC. NatureScot advised that there are a number of impact pathways which may lead to significant effects on one or more of these protected sites.                                                                                                                             | The Moray Firth SAC, Moray Firth SPA, Culbin Bar SAC and Dornoch Firth and Morrich More SAC are considered in this document. Moray Firth SAC has been screened in for potential LSE for marine coastal processes, benthic, subtidal and intertidal ecology and marine mammals receptors. See Table 5-1 for screening outcomes for marine coastal processes, Table 5-2 for screening outcomes for benthic, subtidal and intertidal ecology and Table 5-4 for screening outcomes marine mammals). |
|                                           | MD-LOT    | Protected sites/Inshore and intertidal ornithology  | NatureScot advised that large footprint of the Proposed Works is likely to result in the displacement of SPA waterbirds through structural displacement pressures, alterations to benthic forging habitats, and increased or displaced vessel activity. The Proposed Works therefore has the potential to adversely affect the condition status of SPA birds that are currently in unfavourable or declining condition.                                                                                                                                                                                                                                                                                                      | This Screening Report has considered inshore and intertidal ornithological receptors with the screening outcomes presented in Table 5-7.<br><br>Disturbance and displacement has been screened in to the Stage 2 Appropriate Assessment for the Moray Firth SPA and Ramsar, Inner Moray Firth SPA/Ramsar, Moray and Nairn Coast SPA and Ramsar and East Caithness Cliffs SPA. The full screening assessment is presented in Sections 4.6 and 5.6.                                               |
|                                           | MD LOT    | Protected Sites/Marine Mammals                      | In relation to the Moray Firth SAC, NatureScot advised that the Proposed Works may cause potential impacts to qualifying features due to underwater noise from piling, increased vessel related disturbance, risk of collision or entanglement (including from unattached mooring lines), displacement and disruption of movement or migratory patterns. Additionally, NatureScot stated that the Proposed Works may impact prey species through underwater noise and habitat loss. NatureScot further advised that as the Proposed Works overlap with the subtidal sandbank feature of the Moray Firth SAC there is potential for impact as this feature is sensitive to physical disturbance and changes in water quality. | The potential impacts of underwater noise, vessel disturbance, collision risk with vessels and the platforms, entanglement (direct and secondary) and indirect effects to prey have been scoped into the screening assessment (see Table 4-8). All of these potential effects have been identified as having the potential for LSE for the Moray Firth SAC and therefore will be considered in the Stage 2 Appropriate Assessment (see Table 5-4).                                              |
|                                           | MD LOT    | Protected Sites/ Inshore and Intertidal Ornithology | In relation to the Moray and Nairn Coast SPA/Ramsar Site, NatureScot advised that the osprey breeding season runs from 1 April to 31 August and the Proposed Works may overlap with the sensitive period in which osprey forage in coastal waters and that surface marker buoys may cause displacement of osprey from important foraging areas. NatureScot further advised some qualifying features of the Moray and Nairn Coast SPA and Ramsar Site, regularly forage in subtidal waters and may be subject to displacement impacts from the Proposed Works                                                                                                                                                                 | The Moray and Nairn Coast SPA has been screened in for disturbance and displacement for the following QIs (see Table 5-7): <ul style="list-style-type: none"> <li>• Bar-tailed godwit;</li> <li>• Dunlin;</li> <li>• Greylag goose;</li> <li>• Oystercatcher;</li> <li>• Pink-footed goose;</li> <li>• Redshank;</li> <li>• Wigeon;</li> <li>• Red-breasted merganser; and</li> <li>• Osprey.</li> </ul>                                                                                        |

| Date and Document                         | Consultee  | Topic                                        | Comment Received                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | How and Where addressed in This Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------|------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | MD-LOT     | Protected Sites/Marine and Coastal Processes | NatureScot also advised that the Proposed Works may lead to changes in current speeds, wave energy or turbulence resulting in changes to existing sediment transport systems and therefore impacting the shifting sand dune feature of the Culbin Bar SAC and the coastal geomorphology feature of the Culbin Sands, Culbin Forest and Findhorn Bay SSSI which are supported by the sediment transport systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | The Culbin Bar SAC has been screened in to the Stage 2 Appropriate Assessment for the following potential impacts (see Table 5-1): <ul style="list-style-type: none"> <li>• Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&amp;M)</li> <li>• Changes to Physical Processes (O&amp;M)</li> </ul>                                                                                                                                                                                                                                                                                            |
|                                           | MD-LOT     | Protected Sites/marine Mammals               | In relation to the Dornoch Firth and Morrich More SAC, NatureScot highlighted that the Proposed Works lie 700 m from the designated haul-out site located at Findhorn which is used by the harbour seal feature of the Dornoch Firth and Morrich More SAC. NatureScot advised that potential impacts to harbour seal are consistent with those identified for bottlenose dolphin, with the additional requirement to consider the pupping period which runs from June to July. NatureScot advised the pupping period represents a particularly sensitive phase in the species' annual cycle and therefore disturbance, displacement, collision risk and vessel-related pressures during this period will require careful assessment.                                                                                                                                                                                                                                                                                                                                               | Dornoch Firth and Morrich More SAC has been screened in to the Stage 2 Appropriate Assessment (see Table 5-4) for the following potential impacts for the harbour seal QI; <ul style="list-style-type: none"> <li>• Underwater noise;</li> <li>• Vessel disturbance;</li> <li>• Vessel collision risk;</li> <li>• Changes to prey;</li> <li>• Habitat loss;</li> <li>• Entanglement (Direct);</li> <li>• Entanglement (Secondary);</li> <li>• Barrier effect;</li> <li>• Collision risk with floating foundations; and</li> <li>• Changes in water quality.</li> </ul>                                                                                                               |
| 07 April 2026<br>EIA Screening<br>Opinion | NatureScot | Moray Firth SPA                              | Due to the size, location and characteristics of this development, combined with its potential impacts, there is a likelihood that we may object to this proposal in context to this Protected Area.<br><br>This is a large and novel development, sitting wholly within this SPA, which is internationally important for its non-breeding waterbirds and breeding shag. It is proposed to subsume approximately 1% of this SPA by direct footprint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | This comment is noted. Disturbance and displacement effects and habitat loss has been screened in to the Stage 2 Appropriate Assessment for the Mory Firth SPA (see Table 5-7) for all relevant QIs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                           | NatureScot | Moray Firth SPA                              | This development sits within this SPA and in proximity to areas (e.g. Culbin coast, Findhorn river mouth outflow and Burghead Bay) that can be favoured by SPA species, such a velvet scoter, common scoter and long tailed duck, etc. The large development footprint is likely to result in displacement effects to SPA waterbirds (day and/or night), potentially making the development site unattractive for future use by these birds. This could include structural displacement pressures, changes to benthic foraging habitats, potential increases in/displacement of vessel activity and subsequent disturbances. Where SPA birds are currently in 'unfavourable' or 'declining' condition, the objectives of management should ideally be focussed on restoration, rather than creating additional pressures/impacts within the SPA. Therefore, the potential pressures of this proposal may affect the 'condition status' of SPA birds, see <a href="https://sitelink.nature.scot/site/10490">https://sitelink.nature.scot/site/10490</a> for up-to date information. | The Moray Firth SPA has been screened into the Stage 2 Appropriate Assessment for the following QIs for all phases of the Project (See Table 5-7): <ul style="list-style-type: none"> <li>• Red-throated diver.</li> <li>• Common scoter;</li> <li>• Eider;</li> <li>• Goldeneye;</li> <li>• Great northern diver;</li> <li>• Long-tailed duck;</li> <li>• Red-breasted merganser;</li> <li>• Scaup;</li> <li>• Slavonian grebe; and</li> <li>• Velvet scoter.</li> </ul> For the following potential impacts: <ul style="list-style-type: none"> <li>• Disturbance and displacement (auditory, visual, and presence of flow foundations);</li> <li>• Vessel disturbance;</li> </ul> |

| Date and Document | Consultee  | Topic           | Comment Received                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How and Where addressed in This Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |            |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Indirect impacts on prey;</li> <li>Entanglement (secondary); and</li> <li>Habitat loss.</li> </ul> <p>Shag are also screened in for indirect impacts on prey and entanglement (secondary).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                   | NatureScot | Moray Firth SPA | We note the transit routes to and from the FLOW-Park are excluded from this screening exercise. However, we advise that vessel activity involved in towing base units is an inevitable part of this proposal, especially if these transits deviate from normal vessel activity and routes. Therefore, this aspect should also be included within a shadow HRA process (EIA) to assess potential impacts. We can provide more guidance on this aspect during EIA scoping, or we are happy to provide additional advice during this pre-application stage. | <p>Details on the assembly locations and vessel transit routes for incoming and outgoing FLOW Foundations are not known at this stage. The FLOW-Park will be a multi-use facility for multiple developers, and/or installation contractors, with FLOW foundations being delivered to the FLOW-Park through multiple routes and transport methods. Potential supply location options include local ports, ports located around the UK Coastline, European ports, or Worldwide import. The method of transport can vary from individual FLOW foundations being towed, to multiple foundations being delivered from Heavy Lift Vessels.</p> <p>The locations and methods for transit to and from the FLOW-Park are currently unknown, and relevant details may not be confirmed with greater certainty until the developers confirm their project execution plans and build strategy.</p> <p>It is acknowledged that vessel and FLOW foundation transit issues within the FLOW-Park boundary should be considered within the EIA/HRA. However, vessel and FLOW foundation movements to and from the FLOW-Park cannot be accurately assessed within the Project EIAR/HRA due to the uncertainty and limited availability of information at this stage.</p> <p>It is considered that relevant ports and operators eventually selected by the FLOW developers, will review these potential transit effects within their own licencing arrangements. The Project can then consider these issues post EIA consent, when the required level of detail is known, and incorporate into the Project Vessel Management Plan.</p> <p>Vessel disturbance from the construction, maintenance and decommissioning phases associated with the Project (installation and servicing of anchor points, mooring lines and buoys) has been screened into the assessment (See Table 5-7). The vessel and FLOW Foundation transit routes associated with other developers to and from FLOW-Park during the O&amp;M phase do not form part of this Project and are not assessed in this HRA Screening.</p> |

| Date and Document | Consultee  | Topic           | Comment Received                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | How and Where addressed in This Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | NatureScot | Moray Firth SPA | Unfortunately, no alternative options have been provided during this screening stage, even though 'avoidance' is considered high priority within the mitigation hierarchy. There may be an alternative option outwith this SPA, coinciding with minimal vessel activity, but further into the centre of the Moray Firth (in slightly deeper water), which has potential to reduce adverse impacts. We are happy to discuss this further during this pre-application stage.                                                                             | Information on site selection is provided in Chapter 3: Project Description of the Moray Flow Park Inshore Scoping Report.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                   | NatureScot | Moray Firth SAC | The proposed FLOW Park sits wholly within this SAC. As identified by the developer, the potential impacts to bottlenose dolphin during construction, decommissioning, operation and maintenance include underwater noise from piling, mooring lines, increased vessel related disturbance, risk of collision/entanglement (including when mooring lines are not attached to FLOW foundations) and displacement through disruption of movement/migratory patterns. There may also be impacts to prey species through underwater noise and habitat loss. | The Moray Firth SAC has been screened into the Stage 2 Appropriate Assessment for the following potential impacts to the Bottlenose dolphin QI (see Table 5-4); <ul style="list-style-type: none"> <li>• Underwater noise ;</li> <li>• Vessel disturbance;</li> <li>• Vessel collision risk;</li> <li>• Changes to prey;</li> <li>• Habitat loss;</li> <li>• Entanglement (Direct);</li> <li>• Entanglement (Secondary);</li> <li>• Barrier effect;</li> <li>• Collision risk with floating foundations; and</li> <li>• Changes in water quality.</li> </ul>          |
|                   | NatureScot | Moray Firth SAC | This proposal also has the potential to impact on the subtidal sandbank feature of this SAC as the footprint of the FLOW Park overlaps with part of this feature. Subtidal sandbanks can be sensitive to physical disturbance and changes in water quality. Advice to support management of this SAC is to remove or avoid pressures associated with new anchorage/mooring areas where seagrass beds and horse mussels are present. Benthic surveys will therefore be required to inform any appropriate assessment.                                   | The Moray Firth SAC has been screened in for the Stage 2 Appropriate Assessment for the following potential impacts to the subtidal sands QI (see Table 5-2); <ul style="list-style-type: none"> <li>• Increase in SSC and deposition (temporary);</li> <li>• Accidental pollution (temporary);</li> <li>• Physical habitat loss/disturbance (temporary and permanent);</li> <li>• Increased risk of introduction and/or spread of INNS (temporary);</li> <li>• Colonisation of hard substrates; and</li> <li>• Changes in physical processes (permanent).</li> </ul> |
|                   | NatureScot | Moray Firth SAC | These habitats can also have low resilience to the introduction or spread of invasive non-native species. A robust biosecurity plan will therefore be an important part of any future application. The high impact marine invasive species slipper limpet ( <i>Crepidula fornicata</i> ) is present within the Moray Firth. Any biosecurity plan will therefore need to consider how to avoid the spread of this species.                                                                                                                              | The Moray Firth SAC has been screened in for the Stage 2 Appropriate Assessment for the potential impact of increased risk of introduction or spread of INNS to the subtidal sands QI (see Table 5-2).                                                                                                                                                                                                                                                                                                                                                                |

| Date and Document | Consultee  | Topic                                 | Comment Received                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | How and Where addressed in This Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | NatureScot | Moray and Nairn Coast SPA/Ramsar site | Although FLOW foundations are not expected to require storage during the summer, the osprey breeding season is 1 April – 31 August so storage may overlap with this sensitive period during which osprey connected with this SPA/Ramsar will forage in coastal waters. In addition, if surface marker buoys are used to mark the end of mooring lines when the FLOW Park is empty, it is possible that osprey may experience displacement impacts from potentially important foraging areas, such as at the mouth of the River Findhorn. | The Moray and Nairn Coast SPA has been screened in for disturbance and displacement to Osprey (see Table 5-7).                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                   | NatureScot | Moray and Nairn Coast SPA/Ramsar site | Non-breeding red-breasted merganser are also a protected feature of this SPA. Unlike the other wading birds protected by this SPA, which forage in intertidal areas, red-breasted merganser will also regularly forage in subtidal waters so may experience displacement impacts because of this development. Red-breasted merganser is also a feature of the Moray Firth SPA (see above comments).                                                                                                                                      | The Moray and Nairn Coast SPA has been screened in for disturbance and displacement for the following QIs: <ul style="list-style-type: none"> <li>• Bar-tailed godwit;</li> <li>• Dunlin;</li> <li>• Greylag goose;</li> <li>• Oystercatcher;</li> <li>• Pink-footed goose;</li> <li>• Redshank; and</li> <li>• Wigeon.</li> <li>• Red-breasted merganser.</li> </ul> As shown in Table 5-7.                                                                                                                                                                           |
|                   | NatureScot | Culbin Bar SAC                        | We consider that this proposal has the potential to impact the shifting sand dune feature of this SAC and the coastal geomorphology feature of this SSSI. As identified by the developer, moored FLOW foundations, mooring lines and anchors may lead to changes in current speeds, wave energy or turbulence leading to changes in existing sediment transport systems, all of which support these protected features. We can provide further advice on these issues at EIA scoping.                                                    | The Culbin Bar SAC has been screened in to the Stage 2 Appropriate Assessment (see Table 5-1) for the following potential impacts: <ul style="list-style-type: none"> <li>• Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&amp;M)</li> <li>• Changes to Physical Processes (O&amp;M)</li> </ul>                                                                                                                                                                              |
|                   | NatureScot | Dornoch Firth and Morrich More SAC    | Harbour seal connected to this SAC will use the designated haul out at Findhorn, which, as the developer has identified, lies approximately 700m from the proposed FLOW Park. The potential impacts to harbour seal are the same as those identified above for bottlenose dolphin with the addition of the seal pupping period (June – July), which will require consideration as it is a particularly sensitive time for this species.                                                                                                  | Dornoch Firth and Morrich More SAC has been screened in to the Stage 2 Appropriate Assessment (see Table 5-4) for the following potential impacts for the harbour seal QI; <ul style="list-style-type: none"> <li>• Underwater noise;</li> <li>• Vessel disturbance;</li> <li>• Vessel collision risk;</li> <li>• Changes to prey;</li> <li>• Habitat loss;</li> <li>• Entanglement (Direct);</li> <li>• Entanglement (Secondary);</li> <li>• Barrier effect;</li> <li>• Collision risk with floating foundations; and</li> <li>• Changes in water quality.</li> </ul> |

## 2 Methodology and Guidance

### 2.1 HRA Legislative Context

#### 2.1.1 Habitats Directives and Habitat Regulations

- 2.1.1.1 A network of protected areas for specific habitats and species of importance (known as European sites) has been established by European Union (EU) member states under the Habitats and Birds Directives (Council Directive 92/43/EEC and Directive 2009/147/EC). In Scotland, these are implemented through the Conservation (Natural Habitats &c.) Regulations 1994, the Conservation of Habitats and Species Regulations 2017 (for reserved activities) and the Conservation of Offshore Marine Habitats and Species Regulations 2017. The three-stage process of determining the absence of adverse effects on European sites under the Habitats Directives/Regulations is known as an HRA. This Project is wholly within 12 nm of the Scottish Coast, therefore only The Conservation (Natural Habitats, &c.) Regulations 1994 applies.
- 2.1.1.2 The relevant sections of the Habitats Directive are Articles 6(3) and 6(4) (as implemented in Scottish waters by the Habitats Regulations). Under the Regulations, an Appropriate Assessment (AA) is required where a plan or project is likely to have a significant effect upon a European/Ramsar site either individually or in combination with other plans or projects. European/Ramsar sites (in the context of the HRA assessment) include the following:
- Special Areas of Conservation (SACs) designated for their habitats and/or species (except birds) of European importance;
  - Special Protection Areas (SPAs) designated for rare, vulnerable, and regularly occurring bird species; and
  - Ramsar sites designated under The Convention on Wetlands.
- 2.1.1.3 Of note, the assessment also considers candidate Special Areas of Conservation (cSACs), Sites of Community Importance (SCIs), and potential Special Protection Areas (pSPAs). These sites are treated with the same level of protection as fully designated SACs and SPAs during the assessment process to avoid any adverse effects before formal designation.

- 2.1.1.4 The Habitats Regulations specify, amongst other issues, how development control decisions which could directly or indirectly affect European sites are to be reached. Regulation 48 of the Habitat Regulations (1994) states:

*"A competent authority, before deciding to undertake, or give any consent, permission or other authorization for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives".*

- 2.1.1.5 It is therefore necessary, in the first instance, to determine whether it is possible to conclude that there is no LSE on the site. Only where it is not possible to conclude this, does an AA need to be carried out by the competent authority. The European Court of Justice ruling in the case of Waddenzee (Case C-127/02), stated that an AA of a project is necessary

*"if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site".*

- 2.1.1.6 It is therefore clear that if it cannot be objectively ruled out, then an effect is likely. The test is therefore negative and embeds precaution within it.
- 2.1.1.7 The Habitats Regulations require that a competent authority shall make an AA before any decision to give consent for any plan or project that is not directly connected with or necessary to the (conservation) management of a European site and which could likely have a significant effect on that site (either alone or in combination with other known plans or projects). An AA is therefore required for all plans or projects 'likely to have a significant effect' on a European site in view of the conservation objectives of the European site. The competent authority can only agree to the plan or project having ascertained that it will not adversely affect the integrity of the European site. To ascertain this, the competent authority must give regard to the manner in which the plan or project is proposed to be carried out or to any conditions or restrictions proposed for the consent or permission.
- 2.1.1.8 As the Project is not directly connected with or necessary to the management of a European site, an HRA is required.

## 2.1.2 Post EU Exit Amendment

2.1.2.1 The UK withdrew from the EU in January 2020, and since the beginning of January 2021, the UK is no longer bound by EU legislation; however, The Scottish Parliament and the UK passed recent EU-Exit legislation to ensure that Scotland's nature remains protected to at least the same standard as EU environmental standards with a further longer-term ambition to exceed these. This did result in some aspects of the Habitats Regulations being amended in Scotland, but these amendments were only to those necessary to ensure that the Habitats Regulations remained operable and to ensure that the requirements of the Habitats and Birds Directives must continue to apply to how European sites are designated and protected.

2.1.2.2 The amendments to the Habitats Regulations are summarised within 'EU Exit: The Habitats Regulations in Scotland' (Scottish Government, 2020) and include:

- European sites in the UK are no longer part of the EU's Natura 2000 network. Instead, they form a UK-wide network of protected sites, referred to as the "National Site Network" (although the 1994 Regulations use the term "UK site network") and they retain the same protections;
- Management objectives are established for the national site network. For such sites in Scotland (including those in Scotland's inshore and offshore waters), the Scottish Ministers must work in co-operation with the other UK administrations to manage, and where necessary, adapt the National Site Network to contribute to the achievement of these objectives;
- The objectives in relation to the National Site Network are to:
  - Maintain or restore certain habitats and species listed in the Habitats Directive to Favourable Conservation Status (FCS); and
  - Contribute to ensuring the survival and reproduction of certain species of wild bird in their area of distribution and to maintaining their populations at levels which correspond to ecological, scientific, and cultural requirements, while taking account of economic and recreational requirements.
- European marine sites and European offshore marine sites continue to contribute to Scotland's Marine Protected Area (MPA) network. The network also includes Nature Conservation MPAs, Sites of Special Scientific Interest (SSSIs) and Ramsar sites; and

- The European Commission no longer plays a role in the designation process, or provision of opinion in certain circumstances on whether there were Imperative Reasons of Overriding Public Interest (IROPI) for granting consent for a plan or project despite a competent authority being unable (following completion of an HRA) to ascertain no adverse effect on site integrity. This now all falls under the remit of the Scottish Ministers (for sites in Scotland), with advice from NatureScot and the Joint Nature Conservation Committee (JNCC).

## 2.2 The HRA Stages

- 2.2.1.1 The European Commission's guidance on Planning for the Protection of European Sites: Appropriate Assessment (European Commission, 2001) identifies a staged process to the assessment of the effects of plans or projects on European sites. Cumulatively, these stages are referred to as an HRA, to clearly distinguish the whole process from the second stage within it, which is referred to as AA.
- 2.2.1.2 Each stage (except the last) defines the requirement for and scope of the next. This Screening Report comprises HRA Stage 1, where the identification of LSE is reported. Within NatureScot (formerly Scottish Natural Heritage (SNH)) guidance (David Tyldesley Associates (DTA), 2015) paragraph 4.3 defines LSE as 'one that cannot be ruled out based on objective information. The test is a 'likelihood' of effects rather than a 'certainty' of effects'. LSE should therefore 'not simply be interpreted as 'probable' or 'more likely than not', but rather 'whether a significant effect can objectively be ruled out'. The HRA process is applied to effects from the project alone (Section 5), and 'in-combination' effects with other plans and projects, which is assumed if potential for LSE is confirmed alone on the basis of the definition of LSE. Screening of potential projects and plans to be considered is carried out within HRA Stage Two.
- 2.2.1.3 If, based on the best scientific information available, potential for an LSE to a European site(s) cannot be discounted, then an AA of the effect-pathway(s) to the site is required at HRA Stage 2, where the implications for Adverse Effect on Site Integrity are considered. Importantly, mitigation measures cannot be considered at HRA Stage 1; however, such measures are an integral element of the assessment at HRA Stage 2.
- 2.2.1.4 There are potentially up to three HRA stages:
  - Stage 1: Screening;
  - Stage 2: AA; and
  - Stage 3: Derogation

- 2.2.1.5 HRA Stage 3 becomes relevant if the AA cannot exclude an Adverse Effect on Site Integrity. This stage will be addressed in the event there is a negative outcome to HRA Stage 2 (AA).
- 2.2.1.6 Key guidance documents that have been used to inform this Screening Report include:
- SNH (2000). Natura Casework Guidance: Consideration of Proposals affecting SPA and SAC. Guidance Note Series;
  - SNH Guidance Note (undated). The handling of mitigation in Habitats Regulations Appraisal - the People Over Wind Court of Justice of the European Union (CJEU) judgement;
  - Department of Energy and Climate Change (DECC) (2016). Guidance on when new marine Natura 2000 sites should be considered in offshore renewable energy consents and licences. May 2016;
  - European Commission. (2001). Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological Guidance on the provisions of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC. November 2001;
  - DTA (2021a). The Habitat Regulations Assessment Handbook. <https://www.dtapublications.co.uk/>; and
  - DTA (2021b). Advice to Marine Scotland. Policy Guidance Document on demonstrating the absence of Alternative Solutions and IROPI under the Habitats Regulations for Marine Scotland. November 2021. Draft for Comment.

## 3 The Project

### 3.1 Project Location

- 3.1.1.1 The Project is located within Scottish inshore territorial waters (less than 12 nautical miles (nm) from the coast), in the Moray Firth region. The Moray Firth FLOW-Park is approximately 18 km<sup>2</sup> in size, located about 1.06 km from the shore at its closest point.
- 3.1.1.2 The boundary within which all infrastructure for the Project will be situated is shown in Figure 1-1.

### 3.2 Project Description

- 3.2.1.1 The Moray FLOW-Park Area will be the wet storage location for the FLOW foundations. The FLOW foundations will typically have a spacing of approximately 600 m to allow access to each of the individual FLOW foundations, for security and for towing in and out of the storage site. This spacing may be changed (increased or decreased) to allow safe and clear access for emergency response and lifesaving as agreed following further consultation with the Maritime and Coastguard Agency (MCA) and are likely to be laid out in a grid formation. This HRA Screening Report assesses the construction, operation and maintenance, and decommissioning of the FLOW Park but excludes the maintenance activities associated with the platforms using the FLOW Park as this will be assessed separately by the infrastructure owners.
- 3.2.1.2 Details on the assembly locations and vessel transit routes for incoming and outgoing FLOW Foundations are not known at this stage. The FLOW-Park will be a multi-use facility for multiple developers, and/or installation contractors, with FLOW foundations being delivered to the FLOW-Park through multiple routes and transport methods. Potential supply location options include local ports, ports located around the UK Coastline, European ports, or Worldwide import. The method of transport can vary from individual FLOW foundations being towed, to multiple foundations being delivered from Heavy Lift Vessels.
- 3.2.1.3 The locations and methods for transit to and from the FLOW-Park are currently unknown, and relevant details may not be confirmed with greater certainty until the developers confirm their project execution plans and build strategy.

- 3.2.1.4 It is acknowledged that vessel and FLOW foundation transit issues within the FLOW-Park boundary should be considered within the EIA and HRA. However, vessel and FLOW foundation movements to and from the FLOW-Park cannot be accurately assessed within the Project EIAR and HRA due to the uncertainty and limited availability of information at this stage.
- 3.2.1.5 It is considered that relevant ports and operators eventually selected by the FLOW developers, will review these potential transit effects within their own licencing arrangements. The Project can then consider these issues post EIA consent, when the required level of detail is known, and incorporate into the Project Vessel Management Plan.
- 3.2.1.6 Chapter 3 Project Description provides a full description of the Project.
- 3.2.1.7 There are two types of infrastructure considered within the Design Envelope:
- Permanently Installed Infrastructure:
    - Mooring and anchoring systems to connect the floating substructures to the seabed; and
    - Safety and Security Buoys.
  - Temporarily Installed Infrastructure:
- 3.2.1.8 The Moray FLOW-Park will only contain the FLOW Foundations . The FLOW Park will not be used for storage of FLOW units with rotor, nacelle or tower components of a WTG installed on the foundation.
- 3.2.1.9 An indicative summary of the Maximum Design Scenario (MDS) for the Moray FLOW Park Area, the FLOW Foundations, mooring and anchoring and safety and security buoys is presented in Table 3-1. It is important to note that this Design Envelope will likely be altered and further refined as the design process progresses.

Table 3-1: Indicative Inshore Maximum Design Scenario of the Project.

| Moray Firth FLOW Park                     |                         |
|-------------------------------------------|-------------------------|
| Design Parameter                          | Maximum Design Scenario |
| Moray FLOW-Park Area                      | 18 km <sup>2</sup>      |
| Minimum distance to shore                 | 1.06 km                 |
| Maximum number of FLOW Foundations        | Up to 30                |
| Maximum distance between FLOW Foundations | 600 m                   |
| FLOW Foundation dimension                 | 130 m x 130 m           |
| FLOW Foundation height                    | 45 m                    |

| Moray Firth FLOW Park                               |                                                                 |
|-----------------------------------------------------|-----------------------------------------------------------------|
| Design Parameter                                    | Maximum Design Scenario                                         |
| FLOW Foundation height (above Mean Sea Level [MSL]) | 30 m                                                            |
| Maximum number of mooring lines per foundation      | 6                                                               |
| Mooring line types                                  | Catenary;<br>Taut;<br>Semi-taut; or<br>Hybrid                   |
| Maximum mooring line radius                         | 300 m                                                           |
| Maximum number of anchors                           | 6 <sup>1</sup>                                                  |
| Anchor types                                        | Pile;<br>Suction;<br>Gravity;<br>Helical Pile; or<br>Micropile. |
| Maximum number of security buoys                    | 4                                                               |
| Buoy dimensions (length x width)                    | 5.2 m x 2.2 m                                                   |
| Maximum Buoy height                                 | 15 m                                                            |
| Mooring type                                        | 3 point spread mooring                                          |
| Anchor type                                         | Pile;<br>Helical Pile; or<br>Micropile                          |

## 3.3 Summary of Potential Impacts

### 3.3.1 Introduction

3.3.1.1 The potential for LSE is considered using a source-pathway-receptor model;

- 'Source' is defined as the individual elements of the proposed works that have the potential to affect the identified ecological receptors both within and outside the European Site;
- 'Pathway' is defined as the means or route by which a source can affect the ecological receptor; and
- 'Ecological receptor' is defined as the QIs of Ramsar's, SPAs or SACs for which conservation objectives have been set.

3.3.1.2 Each element can exist independently; however an effect is created when there is a link between the source, pathway and receptor.

<sup>1</sup> Up to 8 at each anchor location if Micropile technology is selected.

- 3.3.1.3 The following section outlines those sources and potential impact pathways that can potentially affect each receptor group. It should be noted that the impacts identified here do not correlate to LSE; these are potential impacts that may arise as a result of the construction, O&M and decommissioning of the Project (which only have potential for LSE where temporal and spatial overlap occurs). The potential for LSE is explored subsequently, in relation to relevant sites and QI(s) in Sections 4 and 5.

### 3.3.2 Marine and Coastal Processes

- 3.3.2.1 Potential impacts and impact pathways on QIs sensitive to Marine and Coastal Process changes, resulting from activities related to the Project during construction, O&M and decommissioning, are outlined in Table 3-2.

Table 3-2: Potential Impact Pathways Regarding Marine and Coastal Processes Changes which may Lead to Impacts on QIs of Designated Sites.

| Potential Impact                                                                    | Pathway                                                                                                                                                     | Activities and Infrastructure Potentially Resulting in Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                |                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     |                                                                                                                                                             | Construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operation & Maintenance                                        | Decommissioning                                                                                                                                                                                                                                                         |
| Increases in suspended sediment concentrations (SSCs) and changes to seabed levels. | Sediment disturbance and dispersal may result in changes to seabed levels and changes to surficial sediment type, altering habitats of sites/QIs (indirect) | Temporary elevations in SSCs due to construction (i.e., anchor installation) activities. This could in turn result in changes to the underlying seabed/coastal bed levels, through deposition of the suspended material and changes to the surficial sediment type. Increases in SSC and associated deposition may have indirect, adverse impacts upon other receptor groups including, Benthic Subtidal and Intertidal Ecology (Chapter 8), Fish and Shellfish Ecology (including megafauna) (Chapter 9), Marine Mammals (Chapter 10) and Commercial Fisheries (Chapter 12). | Maintenance activities; and catenary action of mooring chains. | Decommissioning activities, such as anchor removal, can cause increase of SSC as a result of seabed disturbance. The transport of the disturbed material and the eventual deposition could in turn result in variations in bed levels and changes to the sediment type. |

| Potential Impact                                                                        | Pathway                                                                                                         | Activities and Infrastructure Potentially Resulting in Impact                                                   |                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                        |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                         |                                                                                                                 | Construction                                                                                                    | Operation & Maintenance                                                                                                                                                                                                                                                                                                            | Decommissioning                                                                                                                                        |
| Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions). | Installation of infrastructure disrupts seabed morphology, potentially altering habitats of sites/QIs (direct). | Activities such as anchor installation could have a potential direct and localised impact on seabed morphology. | There is the potential for the introduction of localised seabed abrasion associated with the Project infrastructure that moves, for example anchor or mooring chains, under the influence of waves, currents, and movement of the WTGs (Maxwell <i>et al.</i> , 2022). This could result in localised change to seabed morphology. | Decommissioning activities relating to the removal of infrastructure (if required) have the potential to directly disturb the local seabed morphology. |
| Seabed scouring (permanent)                                                             | Seabed scouring around installed structures (e.g., anchors) leading to habitat alterations (direct).            | -                                                                                                               | The Project infrastructure has the potential to cause localised seabed scouring, resulting in bathymetric changes and localised alterations to sediment transport patterns. This is likely to occur around anchors and clump weights that may be part of the mooring system.                                                       | -                                                                                                                                                      |

| Potential Impact                                                                                                                      | Pathway                                                                                                                                                                                                                                                                 | Activities and Infrastructure Potentially Resulting in Impact |                                                                                                                                                                                                                                                                                                    |                 |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                                                                                                                       |                                                                                                                                                                                                                                                                         | Construction                                                  | Operation & Maintenance                                                                                                                                                                                                                                                                            | Decommissioning |
| Modifications to the wave and tidal regime, and associated impacts to morphological QIs (permanent).                                  | Presence of infrastructure (e.g., foundations), and the baseline metocean regime tides may result in localised changes to tidal current speeds and turbulence. These changes may, in turn, impact on adjacent physical features, offshore, inshore and along the coast. | -                                                             | The interaction between foundations and the baseline metocean regime (waves; tides) may result in localised changes to tidal current speeds, wave energy and turbulence. These changes may, in turn, impact on adjacent physical QIs inshore & offshore.                                           | -               |
| Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). | Presence of infrastructure (e.g., foundations), and the baseline metocean regime tides may result in localised changes to tidal current speeds and turbulence. These changes may, in turn, impact on littoral transport and                                             | -                                                             | The interaction between foundations and the baseline metocean regime (waves; tides) may result in localised changes to tidal current speeds and wave energy. These changes may, especially on wave regime as the main sediment transport factor, in turn, impact the littoral transport being wave | -               |

| Potential Impact                                                | Pathway                                                                                                                                                                                                  | Activities and Infrastructure Potentially Resulting in Impact |                                                                                                                                                                                                                                    |                 |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                                                 |                                                                                                                                                                                                          | Construction                                                  | Operation & Maintenance                                                                                                                                                                                                            | Decommissioning |
|                                                                 | consequently on coastal behaviour.                                                                                                                                                                       |                                                               | dominated and the coastal erosion.                                                                                                                                                                                                 |                 |
| Modification to stratification and frontal features (permanent) | Physical presence of foundations could impact water column stratification, potentially affecting site QIs (e.g., QIs related to Benthic Subtidal and Intertidal Ecology and Fish and Shellfish Ecology). | -                                                             | Physical presence of foundations; The Project is located close to the shore, approximately 1 km, where the study area is defined as well-mixed waters through the year (Connor <i>et al.</i> , 2006; Miller <i>et al.</i> , 2014). | -               |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

### 3.3.3 Benthic Subtidal and Intertidal Ecology

- 3.3.3.1 Potential impacts on Benthic Subtidal and Intertidal Ecology QIs, resulting from the Project during construction, O&M and decommissioning are outlined in Table 3-3.

Table 3-3: Potential Impacts Considered for Benthic Subtidal and Intertidal Ecology QIs of Designated Sites.

| Potential Impact                                                                               | Pathway                                                                           | Activities and Infrastructure Potentially Resulting in Impact                                                                                                                    |                                                                                                                                                                                                                   |                                                                                                                        |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                                                                |                                                                                   | Construction                                                                                                                                                                     | Operation & Maintenance                                                                                                                                                                                           | Decommissioning                                                                                                        |
| Increase in SSC and deposition (temporary)                                                     | Sediment disturbance and dispersal through the water column to reach the site/QI. | Installation of foundation anchors and moorings; seabed preparation; and other construction activities.                                                                          | Maintenance activities; and catenary action of mooring chains (if catenary, minimal or no impact if semi-taut).                                                                                                   | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Accidental pollution (temporary)                                                               | Pollution dispersing through the water column to reach the site/QI.               | Accidental release or spill of materials or chemicals; and release of contaminants from suspended sediment (via all activities listed for increase in SSC and deposition above). | Accidental release or spill of materials or chemicals from operating vessels; and release of contaminants from suspended sediment (via maintenance activities listed above that may increase SSC and deposition). | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Physical habitat loss and disturbance (temporary and permanent)                                | Direct physical interaction between the site/QI and the Project.                  | Seabed preparation; installation of foundation anchors and moorings; and vessel movements/anchoring.                                                                             | Physical presence of foundations; .                                                                                                                                                                               | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Increased risk of introduction and/or spread of Invasive Non Native Species (INNS) (temporary) | Presence of works/structures allowing non-native species to                       | Vessel movements and floating foundation movements on, off and within site.                                                                                                      | Vessel movements and floating foundation movements on, off and within site; and physical presence of infrastructure.                                                                                              | Scope of works currently unknown; however, anticipated to be similar to and no greater than                            |

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| Potential Impact                            | Pathway                                                                                         | Activities and Infrastructure Potentially Resulting in Impact |                                   |                            |
|---------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------|----------------------------|
|                                             |                                                                                                 | Construction                                                  | Operation & Maintenance           | Decommissioning            |
|                                             | travel between sites and QIs.                                                                   |                                                               |                                   | those during construction. |
| Colonisation of hard substrates (permanent) | Presence of structures allowing species to colonise, facilitating travel between sites and QIs. | -                                                             | Physical presence of foundations. | -                          |
| Changes in physical processes (permanent)   | Via changes to water movements and transitional rates.                                          | Installation of anchors.                                      | Physical presence of foundations. | -                          |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

### 3.3.4 Fish and Shellfish Ecology

- 3.3.4.1 Potential impacts and impact pathways on Fish and Shellfish Ecology QIs, resulting from activities related to the Project during construction, O&M and decommissioning are outlined in Table 3-4.

Table 3-4: Potential Impacts to Consider for the Fish and Shellfish Ecology QIs of Designated sites.

| Potential Impact                                                                                                                               | Pathway                                                                                            | Activities and Infrastructure Potentially Resulting in Impact                                                                                                                      |                                                                              |                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                |                                                                                                    | Construction                                                                                                                                                                       | Operation & Maintenance                                                      | Decommissioning                                                                                                        |
| Mortality, injury (Temporary Threshold Shift (TTS)), and behavioural impacts and auditory masking arising from noise and vibration (temporary) | Noise propagation and vibration through the water column within the site/range of the QI (direct). | Pre-construction geophysical surveys; seabed preparation; Unexploded Ordnance (UXO) clearance; installation of foundation anchors and moorings; and other construction activities. | -                                                                            | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Increases in SSC and deposition (temporary)                                                                                                    | Sediment disturbance and dispersal through the water column to reach the site/QI (direct).         | Boulder clearance; installation of foundation anchors and moorings; and other construction activities.                                                                             | Maintenance activities; and catenary action of mooring chains (if catenary). | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary)                                                 | Seabed contaminants dispersing through the water column within the site/range of the QI (direct).  | Release of contaminants from disturbed sediment (see suspended sediment/deposition pathway in row above).                                                                          | -                                                                            | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

| Potential Impact                                                               | Pathway                                                                                                                                                    | Activities and Infrastructure Potentially Resulting in Impact                                                                                    |                                                                                                                                     |                                                                                                                        |
|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                                                |                                                                                                                                                            | Construction                                                                                                                                     | Operation & Maintenance                                                                                                             | Decommissioning                                                                                                        |
| Habitat loss and disturbance (temporary and permanent)                         | Direct physical interaction between the habitat of the site/QI and the Project (direct).                                                                   | Seabed preparation; scour protection; installation of foundation anchors and moorings; strimming effects of mooring lines; and vessel anchoring. | Movement of foundations in and out of the site and mooring system maintenance.                                                      | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Direct damage and disturbance (for example crushing) (temporary and permanent) | Direct physical interaction between the site/QI and the Project (direct).                                                                                  | Boulder clearance; installation of foundation anchors and moorings; and other construction activities.                                           | -                                                                                                                                   | -                                                                                                                      |
| Increased risk of introduction and/or spread of INNS (temporary).              | Vessel movements, floating foundation movements and presence of installed infrastructure, facilitating the introduction and/or spread of INNS to the site. | Vessel movements.                                                                                                                                | Vessel movements and floating foundation movements on, off and within site; and presence of infrastructure that could be colonised. | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

| Potential Impact                            | Pathway                                                                                                   | Activities and Infrastructure Potentially Resulting in Impact                                                                                                                                      |                                                                                                                                                                                                |                                                                                                                        |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                             |                                                                                                           | Construction                                                                                                                                                                                       | Operation & Maintenance                                                                                                                                                                        | Decommissioning                                                                                                        |
| Colonisation of hard substrates (permanent) | Presence of structures allowing species to colonise, facilitating travel between sites and QIs (indirect) | -                                                                                                                                                                                                  | Presence of infrastructure that could be colonised.                                                                                                                                            | -                                                                                                                      |
| Accidental pollution (temporary)            | Pollution dispersing through the water column to reach the site/ QI (direct).                             | Accidental release or spills of chemicals or materials during construction activities (for example vessel fuel spills, drilling fluid release, leaching of anti-fouling / anti-abrasion coatings). | Accidental release or spills of chemicals or materials during site O&M activities (for example vessel fuel spills, drilling fluid release, leaching of anti-fouling / anti-abrasion coatings). | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

### 3.3.5 Marine Mammals

- 3.3.5.1 Potential impacts and impact pathways on Marine Mammal QIs, resulting from activities related to the Project during construction, O&M and decommissioning are outlined in Table 3-5.

Table 3-5: Potential Impacts Considered for the Marine Mammals QIs of Designated Sites.

| Potential Impact                                                                                                                                                                  | Pathway                                                                                 | Activities and Infrastructure Potentially Resulting in Impact                                                                                                |                                                                                                |                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                   |                                                                                         | Construction                                                                                                                                                 | Operation & Maintenance                                                                        | Decommissioning                                                                                                        |
| Mortality, injury, behavioural impacts, and auditory masking from underwater noise of temporary duration (hereafter referred to as underwater noise) (permanent and/or temporary) | Noise propagation through the water column within the site/range of the QI (direct).    | Pre-construction geophysical surveys; seabed preparation; UXO clearance; installation of foundation anchors and moorings; and other construction activities. | Operational noise, including from floating foundation infrastructure; and site O&M activities. | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Vessel disturbance (temporary)                                                                                                                                                    | Vessel movement within the site/range of the QI (direct).                               | Vessel movements and noise associated with construction.                                                                                                     | Vessel movements and noise associated with Project maintenance.                                | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Vessel collision risk (permanent)                                                                                                                                                 | Vessel movement within the site/range of the QI (direct).                               | Vessel movements associated with construction.                                                                                                               | Vessel movements associated with Project maintenance.                                          | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Accidental pollution (temporary)                                                                                                                                                  | Pollution dispersing through the water column within the site/range of the QI (direct). | Accidental release or spills of chemicals or materials, and release of contaminants from disturbed sediments, during construction activities.                | Accidental release or spills of chemicals or materials and release of contaminants from        | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

| Potential Impact                         | Pathway                                                                   | Activities and Infrastructure Potentially Resulting in Impact                                           |                                                                                                     |                                                                                                                        |
|------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                          |                                                                           | Construction                                                                                            | Operation & Maintenance                                                                             | Decommissioning                                                                                                        |
|                                          |                                                                           |                                                                                                         | disturbed sediments, during site O&M activities.                                                    |                                                                                                                        |
| Changes to prey (temporary or permanent) | Impacts site/QI by impacting lower trophic level organisms (indirect).    | All construction activities and infrastructure that can affect prey species (e.g., fish and shellfish). | All site O&M activities and infrastructure that can affect prey species (e.g., fish and shellfish). | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Habitat loss (temporary or permanent)    | Habitat alterations caused by development works (direct).                 | Loss of supporting habitat during installation of structures.                                           | Habitat loss in footprint of foundations and mooring system.                                        | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Entanglement (direct)                    | Physical presence of structures within the site/range of the QI (direct). | -                                                                                                       | Presence of mooring and anchoring lines.                                                            | -                                                                                                                      |
| Entanglement (secondary)                 | 'Ghost'/lost fishing gear entanglement with mooring lines.                | -                                                                                                       | Fishing gear within mooring lines.                                                                  | -                                                                                                                      |
| Barrier effect (permanent)               | Physical presence of structures within the site/range of the QI (direct). | -                                                                                                       | Presence of floating infrastructure and mooring and anchoring lines.                                | -                                                                                                                      |

| Potential Impact                                     | Pathway                                                                   | Activities and Infrastructure Potentially Resulting in Impact |                                                                            |                                                                                                                        |
|------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                                      |                                                                           | Construction                                                  | Operation & Maintenance                                                    | Decommissioning                                                                                                        |
| Collision risk with floating foundations (permanent) | Physical presence of structures within the site/range of the QI (direct). | -                                                             | Presence of novel infrastructure.                                          | -                                                                                                                      |
| Changes in water quality (temporary)                 | Sediment disturbance may temporarily affect water quality (direct).       | Activities such as sediment disturbance during construction.  | Activities such as sediment disturbance during mooring system maintenance. | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

### 3.3.6 Inshore and Intertidal Ornithology

- 3.3.6.1 Potential impacts and impact pathways on Inshore and Intertidal Ornithology QIs, resulting from activities related to the Project during construction, O&M and decommissioning are outlined in Table 3-6.
- 3.3.6.2 Note that some impact pathways included in Table 3-6 are scoped out entirely or for certain species groups in the following sections.

Table 3-6: Potential Impacts Considered for the Inshore and Intertidal Ornithology QIs of Designated Sites.

| Potential Impact                                                                          | Pathway                                                                                                                             | Activities and Infrastructure Potentially Resulting in Impact                      |                                                                                   |                                                                                                              |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                                                                                           |                                                                                                                                     | Construction                                                                       | Operation & Maintenance                                                           | Decommissioning                                                                                              |
| Collision Risk from wet storage FLOW foundations                                          | Collision/ Migratory collision (permanent) - Physical presence of structures within the movement/ migratory zones for QIs (direct). | -                                                                                  | Physical presence of floating foundations.                                        | -                                                                                                            |
| Barrier effects from FLOW foundations                                                     | Barrier to commuting and migrating birds - Physical presence of structures within the movement/ migratory zones for QIs (direct).   | -                                                                                  | Physical presence of floating foundations.                                        | -                                                                                                            |
| Disturbance and displacement (auditory, visual and physical presence of FLOW foundations) | Physical presence of structures present within the movement/ migratory zones for QIs (direct).                                      | Distributional responses from construction activity (temporary)                    | Distributional responses from physical infrastructure (temporary/permanent)       | Distributional responses from decommissioning activity (temporary) – Equal to or lower than the construction |
| Vessel disturbance                                                                        | Vessel associated disturbance.                                                                                                      | Disturbance from vessel movements associated with Project construction (temporary) | Disturbance from vessel movements associated with Project maintenance (temporary) | Disturbance from vessel movements during Project decommissioning (temporary)                                 |

| Potential Impact                     | Pathway                                                                                | Activities and Infrastructure Potentially Resulting in Impact                              |                                                                                 |                                                                                                                        |
|--------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                                                        | Construction                                                                               | Operation & Maintenance                                                         | Decommissioning                                                                                                        |
| Indirect impacts via effects on prey | Impacts site/ QI by impacting lower trophic level organisms (indirect).                | Installation activities                                                                    | Mooring system maintenance activities; and physical presence of the foundations | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |
| Entanglement (direct)                | Physical presence of structures within the movement/ migratory zones for QIs (direct). | -                                                                                          | Mooring lines.                                                                  | -                                                                                                                      |
| Entanglement (secondary)             | 'Ghost'/lost fishing gear entanglement with mooring lines.                             | -                                                                                          | Fishing gear within mooring lines.                                              | -                                                                                                                      |
| Impacts from artificial lighting     | Introduction of artificial lighting used during all phases of the Project.             | Installation activities may require lighting; and vessel lighting                          | Mooring system maintenance activities may require lighting; and vessel lighting | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction  |
| Accidental pollution                 | Potential release of pollutants may impact marine species and habitats.                | Installation activities have the potential to lead to the accidental release of pollutants | -                                                                               | Decommissioning have the potential to lead to the accidental release of pollutants                                     |

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| Potential Impact | Pathway                                                                                  | Activities and Infrastructure Potentially Resulting in Impact                                        |                                   |                                                                                                                        |
|------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                  |                                                                                          | Construction                                                                                         | Operation & Maintenance           | Decommissioning                                                                                                        |
| Habitat loss     | Direct physical interaction between the habitat of the site/QI and the Project (direct). | Seabed preparation; installation of foundation anchors and moorings; and vessel movements/anchoring. | Physical presence of foundations. | Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction. |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

## 4 Inshore Scoping

### 4.1 Scoping Process

#### 4.1.1 Site Scoping

4.1.1.1 Given the nature and location of the Project and the number of European sites that could potentially be affected, the HRA screening is fronted by an initial selection process, to identify which sites and QIs require consideration within the screening process. This is achieved through a receptor-based approach with a source-pathway-receptor methodology, where a receptor can only be impacted by an effect if a pathway exists through which the effect can be transmitted between the source activity and the receptor.

4.1.1.2 This step to the process essentially provides a long list of designated sites identified based on potential spatial connectivity to the Project, to be taken forward for consideration of no LSE. The potential impacts associated with the construction, O&M and decommissioning of the Project are presented in Section 3.3. Where some designated sites are designated for QIs covering multiple receptor groups, the site has been repeated in all relevant sections below, with only the QIs relevant to the specific receptor group presented in the relevant section. The site selection process is described below on a receptor group basis.

#### 4.1.2 Impact Scoping

4.1.2.1 Impact scoping involves evaluating the potential impacts of the Project on designated sites and their associated QIs. This will conclude what QIs have the potential to be affected by the considered impacts, and if no protected sites with these QIs fall within the Zone of Influence (Zoi) of the impact, that impact will be scoped out of the assessment. This process further examines how different aspects of the development might negatively affect the integrity of a site, establishing whether the considered impact is capable of resulting in an LSE.

## 4.2 Marine and Coastal Processes

### 4.2.1 Site Scoping

- 4.2.1.1 An initial site scoping range of 5 km (Tidal Excursion Zol) from the boundary of the Project (extending into inlets and bays where appropriate) was applied to identify all designated sites with QIs potentially impacted by changes to Marine and Coastal Processes. This scoping range is based on the maximum spring tidal excursion (ABPmer, 2008), which represents the distance away from the Project over which suspended sediment plumes may be advected (and meaningfully interact with potentially sensitive receptors). This range will be confirmed (or updated, if necessary) through subsequent technical reporting (specifically, through numerical modelling and analysis of the evidence base undertaken to inform the Marine and Coastal Processes Environmental Impact Assessment (EIA)).
- 4.2.1.2 In order to consider potential impacts on littoral processes and coastal sediment transport pathways, an additional site scoping area (Sediment Transport Processes Zol) was applied based on consideration of the coastal sediment sub-cell information set out in Ramsay and Brampton (2000) (as shown in Figure 5-1).
- 4.2.1.3 Table 4-1 shows the designated sites and QIs within the scoping range identified for Marine and Coastal Processes.

Table 4-1: Designated Sites Relevant for Marine and Coastal Processes.

| Designated Site                 | Relevant QI(s)                                                                                            | Distance from Site (km) |
|---------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------|
| Moray Firth SAC                 | Sandbanks which are slightly covered by sea water all the time (hereafter Subtidal Sandbanks).            | 0 km                    |
| Culbin Bar SAC                  | Atlantic salt meadows;<br>Coastal shingle vegetation outside the reach of waves;<br>and<br>Shifting Dunes | 2.1 km                  |
| Lower River Spey – Spey Bay SAC | Coastal shingle vegetation outside the reach of waves                                                     | 18.82 km                |

## 4.2.2 Impact Scoping

- 4.2.2.1 With consideration of the QIs scoped in within Table 4-1 above, Table 4-2 outlines the potential impacts and their Zol, determining whether the identifying species or QIs should be carried forward for screening for LSE.

Table 4-2: Impact Scoping Zol for Marine and Coastal Processes.

| Potential Impact                                                                                                                            | C | O&M | D | QI(s)                                                                                                   | Zone of Influence                | Scoped In/ Out                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------|---|-----|---|---------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------|
| Increases in SSCs and changes to seabed levels                                                                                              | ✓ | ✓   | ✓ | Subtidal Sandbanks                                                                                      | 5 km tidal excursion Zol         | Scoped In                                                                                                      |
| Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions)                                                      | ✓ | ✓   | ✓ | Subtidal Sandbanks                                                                                      | 5 km tidal excursion Zol         | Scoped In                                                                                                      |
| Seabed scouring (permanent) (O&M)                                                                                                           | - | ✓   | - | Subtidal Sandbanks                                                                                      | 5 km tidal excursion Zol         | Scoped In                                                                                                      |
| Modifications to the wave and tidal regime, and associated impacts to morphological features (permanent) (O&M)                              | - | ✓   | - | Subtidal Sandbanks                                                                                      | Sediment transport processes Zol | Scoped In                                                                                                      |
| Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&M) | - | ✓   | - | Subtidal Sandbanks                                                                                      | Sediment transport processes Zol | Scoped Out – Changes in littoral transport and coastal behaviour is not expected to impact subtidal sandbanks. |
|                                                                                                                                             |   |     |   | Atlantic salt meadows;<br>Coastal shingle vegetation outside the reach of waves; and<br>Shifting dunes. | Sediment transport processes Zol | Scoped In                                                                                                      |

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| Potential Impact                                                | C | O&M | D | QI(s)              | Zone Influence | of | Scoped In/ Out                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------|---|-----|---|--------------------|----------------|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modification to stratification and frontal features (permanent) | - | ✓   | - | Subtidal Sandbanks | 5 km           |    | <b>Scoped Out</b> - Modification to stratification and frontal features (permanent) is not expected to impact subtidal sandbanks. In addition, the Project is located close to the shore, approximately 1 km, where the Zol is defined as well-mixed waters through the year (Connor <i>et al.</i> , 2006; Miller <i>et al.</i> , 2014). |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

## 4.3 Benthic Subtidal and Intertidal Ecology

### 4.3.1 Site Scoping

- 4.3.1.1 An initial site scoping range of 5 km (Tidal Excursion Zol) from the boundary of the Project (extending into bays and inlets where appropriate) was applied to identify all designated sites with QIs related to Benthic Subtidal and Intertidal Ecology (Table 4-3). This scoping range is based on the maximum spring tidal excursion (ABPmer, 2008), which represents the distance away from the Project over which suspended sediment plumes may be advected (and meaningfully interact with potentially sensitive receptors). Therefore, a precautionary buffer of 5 km has been assumed based on experience from other projects in the wider region and expert judgement as a reasonable distance within which indirect effects (for example, resulting from increased SSC and associated deposition) will occur. This range will be confirmed (or updated, if necessary) through subsequent technical reporting (specifically, through empirical assessments and analysis of the evidence base undertaken to inform the Marine and Coastal Processes EIA).
- 4.3.1.2 In order to consider potential impacts on coastal habitats, an additional site scoping area (Sediment Transport Processes Zol) was applied based on consideration of the coastal sediment sub-cell information set out in Ramsay and Brampton (2000) (as shown in Figure 5-2).

#### 4.3.1.3

Table 4-3: Designated Sites Relevant for Benthic Subtidal and Intertidal Ecology.

| Designated Site                 | Relevant QI(s)                                                                                            | Distance from Site (km) |
|---------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------|
| Moray Firth SAC                 | Subtidal sandbanks                                                                                        | 0 km                    |
| Culbin Bar SAC                  | Atlantic salt meadows;<br>Coastal shingle vegetation outside the reach of waves;<br>and<br>Shifting dunes | 2.1 km                  |
| Lower River Spey – Spey Bay SAC | Coastal shingle vegetation outside the reach of waves.                                                    | 18.8 km                 |

#### 4.3.2 Impact Scoping

With consideration of the QIs scoped in within Table 4-3Table 4-3 above, Table 4-4 outlines the potential impacts and their Zol, determining whether the identifying species or QIs should be carried forward for screening for LSE.

Table 4-4: Impact Scoping Zol for Benthic Subtidal and Intertidal Ecology.

| Potential Impact                                                 | C | O&M | D | QI(s)                                                                                            | Zone of Influence                | Scoped In/ Out |
|------------------------------------------------------------------|---|-----|---|--------------------------------------------------------------------------------------------------|----------------------------------|----------------|
| Increase in SSC and deposition (temporary)                       | ✓ | ✓   | ✓ | Subtidal sandbanks                                                                               | 5 km (tidal excursion Zol)       | Scoped In      |
| Physical habitat loss and disturbance (temporary and permanent)  | ✓ | ✓   | ✓ | Subtidal sandbanks                                                                               | 5 km (tidal excursion Zol)       | Scoped In      |
| Increased risk of introduction and/or spread of INNS (temporary) | ✓ | ✓   | ✓ | Subtidal sandbanks                                                                               | 5 km (tidal excursion Zol)       | Scoped In      |
| Colonisation of hard substrates (permanent)                      | - | ✓   | - | Subtidal sandbanks                                                                               | 5 km (tidal excursion Zol)       | Scoped In      |
| Changes in physical processes (permanent)                        | ✓ | ✓   | - | Subtidal sandbanks                                                                               | Sediment transport processes Zol | Scoped In      |
|                                                                  | - | ✓   | - | Atlantic salt meadows; Coastal shingle vegetation outside the reach of waves; and Shifting dunes | Sediment transport processes Zol | Scoped In      |

| Potential Impact                 | C | O&M | D | QI(s) | Zone of Influence | Scoped In/ Out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------|---|-----|---|-------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accidental pollution (temporary) | - | -   | - | None  | -                 | <b>Scoped Out</b><br>Accidental pollution events are expected to be limited in scale and duration, with effects confined to the local area. The likelihood of a major incident occurring that could impact benthic populations at a significant level is considered extremely low. Furthermore, all vessel operations will comply with the Annex I Regulations for the Prevention of Pollution by Oil under the International Convention for the Prevention of Pollution from Ships MARPOL Convention. This is a legal requirement to comply with, which ensures that the risk of pollution is extremely small and effectively negligible for all species, and is not considered mitigation. |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage

## 4.4 Fish and Shellfish Ecology

### 4.4.1 Site Scoping

4.4.1.1 A site scoping range of 50 km from the boundary of the Project has been applied, reflecting the maximum potential extent of impacts arising from the Project on designated sites with QIs related to Fish and Shellfish Ecology. This scoping range has been assumed based on experience from other projects in the wider region and expert judgement as a reasonable distance within which indirect effects from underwater noise (the impact with results in the greatest range of effect on fish and shellfish receptors, are likely to occur. The extent of the scoping range will be confirmed (or updated, if necessary) to take account of subsequent underwater noise modelling.

4.4.1.2 There are three European sites with QIs related to Fish and Shellfish Ecology within the 50 km scoping range (Table 4-5).

Table 4-5: Designated Sites Relevant for Fish and Shellfish Ecology.

| Designated Site          | Relevant QI(s)                                            | Distance from Site (km)                                                                                                                                              |
|--------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>SACs within 50 km</i> |                                                           |                                                                                                                                                                      |
| River Oykel SAC          | Atlantic salmon; freshwater pearl mussel                  | 44.47                                                                                                                                                                |
| River Spey SAC           | Atlantic salmon; freshwater pearl mussel; and sea lamprey | 26.26                                                                                                                                                                |
| River Moriston SAC       | Atlantic salmon; freshwater pearl mussel                  | The mouth of the River Ness, which the River Moriston flows into, lies 38.25 km from the site by sea (avoiding any land crossings), and 37.59 km in a straight line. |

### 4.4.2 Impact Scoping

4.4.2.1 With consideration of the QIs scoped in within Table 4-5 above, Table 4-6 outlines the potential impacts and their respective ZoI, determining whether the identified species should be carried forward for screening for LSE.

Table 4-6: Impact Scoping Zol for Fish and Shellfish Ecology.

| Potential Impact                                                                                             | C | O&M | D | QI(s)                                                      | Zone of Influence                                                                                                                                                                                                                                                                                                                                           | Scoped In/ Out                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------|---|-----|---|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary) | ✓ | -   | ✓ | Atlantic salmon; freshwater pearl mussel; and sea lamprey. | 50 km underwater noise scoping range, considering impacts arising from underwater noise during the construction and decommissioning phases. (Although the freshwater pearl mussel is unlikely to be directly affected by underwater noise, its lifecycle depends on Atlantic salmon. Therefore, any impact on salmon could indirectly affect this species). | <b>Scoped In</b>                                                                                                                                                                                                                                                                                  |
| Increases in SSC and deposition (temporary)                                                                  | ✓ | ✓   | ✓ | Atlantic salmon; freshwater pearl mussel; and sea lamprey. | Impact restricted to within the tidal excursion range (5 km from the Moray FLOW-Park Area), which reflects the maximum potential distance that suspended sediments might travel following disturbance.                                                                                                                                                      | <b>Scoped In</b><br>A Zol of 5 km from increases in SSC has the potential to partially obstruct the Moray Firth at its narrowest point, creating a partial barrier of the Moray Firth to migratory receptors, which transit the Moray Firth and project area, to reach rivers designated as SACs. |

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| Potential Impact                                                                               | C | O&M | D | QI(s)                                                      | Zone of Influence                                                                                                                                                                                                                                                                                                            | Scoped In/ Out                                                                                                   |
|------------------------------------------------------------------------------------------------|---|-----|---|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary) | ✓ | -   | ✓ | Atlantic salmon; freshwater pearl mussel; and sea lamprey. | The release of contaminants may arise as a result of suspended sediment.) The Impact will be restricted to within the tidal excursion range (5 km from the Moray FLOW-Park Area), which reflects the maximum potential distance that suspended sediments (and subsequently contaminants) might travel following disturbance. | <b>Scoped In</b>                                                                                                 |
| Habitat loss and disturbance (temporary and permanent)                                         | - | -   | - | None                                                       | Restricted to within the Moray FLOW-Park Area.                                                                                                                                                                                                                                                                               | <b>Scoped Out</b><br>No overlap between Zol and designated sites with QIs related to Fish and Shellfish Ecology. |
| Direct damage and disturbance (temporary and permanent)                                        | - | -   | - | None                                                       | Restricted to within the Moray FLOW-Park Area.                                                                                                                                                                                                                                                                               | <b>Scoped Out</b><br>No overlap between Zol and designated sites with QIs related to Fish and Shellfish Ecology. |
| Increased risk of introduction and/or spread of INNS (temporary)                               | - | -   | - | None                                                       | Restricted to within the Moray FLOW-Park Area.                                                                                                                                                                                                                                                                               | <b>Scoped Out</b><br>No overlap between Zol and designated sites with QIs related to Fish and Shellfish Ecology. |

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| Potential Impact                            | C | O&M | D | QI(s) | Zone of Influence                              | Scoped In/ Out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------|---|-----|---|-------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Colonisation of hard substrates (permanent) | - | -   | - | None  | Restricted to within the Moray FLOW-Park Area. | <b>Scoped Out</b><br>No overlap between ZOI and designated sites with QIs related to Fish and Shellfish Ecology.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Accidental pollution (temporary)            | - | -   | - | None  | -                                              | <b>Scoped Out</b><br>Accidental pollution events are expected to be limited in scale and duration, with effects confined to the local area. The likelihood of a major incident occurring that could impact fish and shellfish populations at a significant level is considered extremely low. Furthermore, all vessel operations will comply with the Annex I Regulations for the Prevention of Pollution by Oil under the International Convention for the Prevention of Pollution from Ships MARPOL Convention. This is a legal requirement to comply with, which ensures that the risk of pollution is extremely small and effectively negligible for all species, and is not considered mitigation. |

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| Potential Impact | C | O&M | D | QI(s) | Zone of Influence | Scoped In/ Out                                      |
|------------------|---|-----|---|-------|-------------------|-----------------------------------------------------|
|                  |   |     |   |       |                   | This impact is therefore proposed to be scoped out. |

## 4.5 Marine Mammals

### 4.5.1 Site Scoping

- 4.5.1.1 The site selection process is concerned with the four Annex II marine mammal species which have SAC designation. These are bottlenose dolphin (*Tursiops truncatus*), harbour porpoise (*Phocoena phocoena*), grey seal (*Halichoerus grypus*), and harbour seal (*Phoca vitulina*). An initial scoping exercise was conducted to identify relevant designated European sites that support these marine mammal species.
- 4.5.1.2 The approach used for scoping sites for cetacean species is to consider the species-specific Management Unit (MU) (Inter-Agency Marine Mammal Working Group; IAMMWG, 2023) that the Project is located in. The spatial extent of the MU is used to determine potential connectivity between the Project and designated sites for the relevant species. All designated SACs with cetacean QIs within the species-specific MUs are taken forward to the screening stage for the identified species. The relevant MUs for the identified species are:
- Harbour porpoise: North Sea (NS) MU;
  - Bottlenose dolphin: Coastal East Scotland (CES) MU; and
  - Bottlenose dolphin: Greater North Sea (GNS) MU.
- 4.5.1.3 To note, the location of the Project falls within the CES MU for bottlenose dolphin, however the ZOI extends into the GNS MU, hence this MU is also considered.
- 4.5.1.4 The approach used for scoping sites for seal species is to consider a scoping buffer or range. NatureScot recommends a scoping buffer of 50 km for harbour seal and 20 km for grey seal, to reflect their at-sea distribution relative to their haul out sites during the breeding season, as informed by telemetry data. This advice has been adopted in previous Scottish Offshore Wind Farm (OWF) HRAs (e.g. Caledonia Offshore Wind Farm Limited, 2022; Muir Mhòr Offshore Wind Farm Limited, 2023). A 50 km radius is applied to harbour seal due to their year-round site fidelity, with no significant seasonal variation in their presence or movements (Carter et al., 2022; SCOS 2022). For grey seal, the 20 km buffer is appropriate as they rarely travel beyond this distance from the colony during the breeding season (Carter et al., 2022). Although telemetry data show that grey seals may undertake wide-ranging foraging trips of 100 km or more offshore (Jones et al., 2015; Carter et al., 2022), these occur outside the breeding season and, therefore, do not affect the conservation objectives for grey seal SACs, which focus specifically on the breeding season.

- 4.5.1.5 The scoping buffer will be applied to the Project area plus the maximum Zol arising from impact pathways. It is anticipated that the underwater noise impact pathway will lead to the greatest Zol, however the exact Zol is not yet known as it will be informed by the outputs of the underwater noise modelling which has not yet been undertaken. Therefore, for the purpose of HRA Screening, the scoping buffer for seals has been applied to the Project area only. The list of sites screened in will be reviewed following the underwater noise modelling to ensure that all sites within the scoping buffer of the Zol are included in the assessment.
- 4.5.1.6 There are no SACs designated for grey seals within the species-specific scoping buffer distances from the Project. For harbour seals, there is one SAC designated within 50 km of the Project.
- 4.5.1.7 There are 36 SACs designated for harbour porpoise within the NS MU and one SAC designated for bottlenose dolphin within the CES MU. There are no designated sites for bottlenose dolphins within the GNS MU.
- 4.5.1.8 Therefore, only the designated sites as stated above (SACs) for harbour porpoise, bottlenose dolphin and harbour seal are taken forward to the screening stage.
- 4.5.1.9 The designated sites relevant for Marine Mammals are listed in Table 4-7.

*Table 4-7: Designated Sites relevant for Marine Mammals. QIs highlighted with an '\*\*' identifies species screened out as the site is out with the relevant MUs for this species.*

| Designated Site                    | Relevant QI(s)                                    | Distance from Site (km) |
|------------------------------------|---------------------------------------------------|-------------------------|
| Moray Firth SAC                    | Bottlenose dolphin                                | 0.00                    |
| Dornoch Firth and Morrich More SAC | Harbour seal                                      | 28.23                   |
| Southern North Sea SAC             | Harbour porpoise                                  | 397.02                  |
| Vlaamse Banken SAC                 | Harbour porpoise<br>Grey seal**<br>Harbour seal** | 844.51                  |
| SBZ 1/ZPS 1 SAC                    | Harbour porpoise                                  | 889.98                  |
| SBZ 2/ZPS 2 SAC                    | Grey seal**                                       | 875.54                  |
| SBZ 3/ZPS 3 SAC                    | Harbour seal**                                    | 876.02                  |
| Vlakte van de Raan SAC             | Harbour porpoise<br>Grey seal**<br>Harbour seal** | 861.21                  |
| Gule Rev SAC                       | Harbour porpoise                                  | 687.93                  |
| Knudegrund SAC                     | Harbour porpoise                                  | 812.59                  |
| Jyske Rev, Lillefiskerbanke SAC    | Harbour porpoise                                  | 627.90                  |

| Designated Site                                            | Relevant QI(s)                                  | Distance from Site (km) |
|------------------------------------------------------------|-------------------------------------------------|-------------------------|
| Lønstrup Rødgrund SAC                                      | Harbour porpoise                                | 791.03                  |
| Sandbanker ud for Thorsminde SAC                           | Harbour porpoise                                | 716.79                  |
| Skagens Gren og Skagerrak SAC                              | Harbour porpoise<br>Harbour seal*               | 817.74                  |
| Store Rev SAC                                              | Harbour porpoise                                | 769.31                  |
| Sydlig Nordsø SAC                                          | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 696.14                  |
| Sylter Außenriff SCI                                       | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 692.79                  |
| Thyborøn Stenvolde SAC                                     | Harbour porpoise                                | 700.70                  |
| Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde SAC | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 788.36                  |
| Doggerbank SAC                                             | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 518.11                  |
| Klaverbank SAC                                             | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 581.49                  |
| Noordzeekustzone SAC                                       | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 756.39                  |
| Waddenzee SAC                                              | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 777.00                  |
| Westerschelde & Saeftinghe SAC                             | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 871.52                  |
| Borkum-Riffgrund SCI                                       | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 755.52                  |
| Hamburgisches Wattenmeer SAC                               | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 857.14                  |
| Helgoland mit Helgoländer Felssockel SAC                   | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 822.22                  |
| Nationalpark Niedersächsisches Wattenmeer SAC              | Harbour porpoise<br>Grey seal*<br>Harbour seal* | 798.04                  |

| Designated Site                                                                                                | Relevant QI(s)                                                         | Distance from Site (km) |
|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|
| NTP S-H Wattenmeer und angrenzende Küstengebiete SAC                                                           | Harbour porpoise<br>Harbour seal*                                      | 791.39                  |
| Unterelbe SAC                                                                                                  | Harbour porpoise<br>Harbour seal*                                      | 886.54                  |
| Steingrund SAC                                                                                                 | Harbour porpoise<br>Grey seal*<br>Harbour seal*                        | 823.88                  |
| Baie de Canche et couloir des trois estuaires SAC                                                              | Harbour porpoise<br>Grey seal*<br>Harbour seal*                        | 941.57                  |
| Bancs des Flandres SAC                                                                                         | Harbour porpoise<br>Grey seal*<br>Harbour seal*                        | 864.42                  |
| Baie de Seine occidentale SAC                                                                                  | Harbour porpoise<br>Bottlenose dolphin*<br>Grey seal*<br>Harbour seal* | 1124.61                 |
| Baie de Seine orientale SAC                                                                                    | Harbour porpoise<br>Bottlenose dolphin*<br>Grey seal*<br>Harbour seal* | 1096.23                 |
| Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant SAC | Harbour porpoise<br>Bottlenose dolphin*<br>Grey seal*<br>Harbour seal* | 905.58                  |
| Recifs Gris-Nez Blanc-Nez SAC                                                                                  | Harbour porpoise<br>Grey seal*<br>Harbour seal*                        | 894.57                  |
| Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC                                                   | Harbour porpoise<br>Grey seal*<br>Harbour seal*                        | 903.43                  |

## 4.5.2 Impact Scoping

4.5.2.1 With consideration of the sites and QIs scoped in within Table 4-7 above, Table 4-8 outlines the potential impacts and their Zol, determining whether the identified QIs should be carried forward for screening for LSE.

Table 4-8: Impact Zol for Marine Mammals.

| Potential Impact   | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                     | Scoped In/ Out |
|--------------------|---|-----|---|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| Underwater noise   | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | Scoped In      |
|                    | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | Scoped In      |
|                    | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | Scoped In      |
| Vessel disturbance | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | Scoped In      |
|                    | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | Scoped In      |
|                    | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | Scoped In      |

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| Potential Impact      | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                     | Scoped In/ Out                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|---|-----|---|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vessel collision risk | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                              |
|                       | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                              |
|                       | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                              |
| Accidental pollution  | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | <b>Scoped Out</b> - All vessel operations will comply with the Annex I Regulations for the Prevention of Pollution by Oil under the International Convention for the Prevention of Pollution from Ships MARPOL Convention. This is a legal requirement to comply with, which ensures that the risk of pollution is extremely small and effectively negligible for all species. This impact is |

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| Potential Impact | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                                | Scoped In/ Out                       |
|------------------|---|-----|---|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
|                  |   |     |   |                    |                                                                                                                                                                                  | therefore proposed to be scoped out. |
|                  | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.            | <b>Scoped Out</b> – as above         |
|                  | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.                     | <b>Scoped Out</b> – as above         |
| Changes to prey  | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                           | <b>Scoped In</b>                     |
|                  | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.            | <b>Scoped In</b>                     |
|                  | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.                     | <b>Scoped In</b>                     |
| Habitat loss     | ✓ | ✓   | ✓ | Harbour porpoise   | Direct impacts of habitat loss are negligible. Indirect impacts of habitat loss are considered in changes to prey assessment. No harbour porpoise SACs overlap with the Project. | <b>Scoped Out</b>                    |

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| Potential Impact         | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                            | Scoped In/ Out |
|--------------------------|---|-----|---|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
|                          | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.        | Scoped In      |
|                          | ✓ | ✓   | ✓ | Harbour seal       | Direct impacts of habitat loss are negligible. Indirect impacts of habitat loss are considered in changes to prey assessment. No harbour seal SACs overlap with the Project. | Scoped Out     |
| Entanglement (Direct)    | - | ✓   | - | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                       | Scoped In      |
|                          | - | ✓   | - | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.        | Scoped In      |
|                          | - | ✓   | - | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.                 | Scoped In      |
| Entanglement (secondary) | - | ✓   | - | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                       | Scoped In      |
|                          | - | ✓   | - | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which                                                                                                       | Scoped In      |

| Potential Impact                         | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                     | Scoped In/ Out   |
|------------------------------------------|---|-----|---|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                                          |   |     |   |                    | overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.                                                                        |                  |
|                                          | - | ✓   | - | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | <b>Scoped In</b> |
| Barrier effect (floating only)           | - | ✓   | - | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | <b>Scoped In</b> |
|                                          | - | ✓   | - | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | <b>Scoped In</b> |
|                                          | - | ✓   | - | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | <b>Scoped In</b> |
| Collision risk with floating foundations | - | ✓   | - | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | <b>Scoped In</b> |
|                                          | - | ✓   | - | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | <b>Scoped In</b> |

| Potential Impact         | C | O&M | D | QI(s)              | Zone of Influence                                                                                                                                                     | Scoped In/ Out   |
|--------------------------|---|-----|---|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|                          | - | ✓   | - | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | <b>Scoped In</b> |
| Changes in water quality | ✓ | ✓   | ✓ | Harbour porpoise   | Harbour porpoise are highly mobile and range throughout the NS MU; as such they may be exposed to the Zol from the pathway for effect.                                | <b>Scoped In</b> |
|                          | ✓ | ✓   | ✓ | Bottlenose dolphin | Bottlenose dolphin may be present throughout the Moray Firth SAC which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect. | <b>Scoped In</b> |
|                          | ✓ | ✓   | ✓ | Harbour seal       | Harbour seal may be present up to 50 km from their SAC, which overlaps with the Project; as such they may be exposed to the Zol from the pathway for effect.          | <b>Scoped In</b> |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

## 4.6 Inshore and Intertidal Ornithology

### 4.6.1 Site Scoping

4.6.1.1 An initial scoping exercise was conducted to identify all European sites designated for relevant ornithological QIs. A precautionary approach was followed to ensure that all sites with potential connectivity to the Project, in relation to possible impacts on inshore and intertidal ornithological QIs, are captured for further consideration in the screening process.

4.6.1.2 Table 4-9 presents ornithological QI categories grouped by shared sensitivity to key impact pathways. These groups are used throughout to scope species in for specific impacts based on their sensitivity.

Table 4-9: Ornithological QI Categories Used in the Rest of This Document.

| QI category                             | Relevant QI(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seabirds<br>(breeding and non-breeding) | <p>Auks:</p> <ul style="list-style-type: none"> <li>Atlantic puffin (hereafter ‘puffin’) <i>Fratercula arctica</i>;</li> <li>Black guillemot <i>Cephus grylle</i>;</li> <li>Common guillemot (hereafter ‘guillemot’) <i>Uria aalge</i>; and</li> <li>Razorbill <i>Alca torda</i>.</li> </ul> <p>Gulls, terns and skuas:</p> <ul style="list-style-type: none"> <li>Arctic skua <i>Stercorarius parasiticus</i>;</li> <li>Arctic tern <i>Sterna paradisaea</i>;</li> <li>Black-headed gull <i>Chroicocephalus ridibundus</i>;</li> <li>Black-legged kittiwake (hereafter ‘kittiwake’) <i>Rissa tridactyla</i>;</li> <li>Common gull <i>Larus canus</i>;</li> <li>Common tern <i>S. hirundo</i>;</li> <li>Great black-backed gull <i>L. marinus</i>;</li> <li>Great skua <i>Stercorarius skua</i>;</li> <li>Herring gull <i>L. argentatus</i>;</li> <li>Lesser black-backed gull <i>L. fuscus</i>;</li> <li>Little gull <i>Hydrocoloeus minutus</i>;</li> <li>Little tern <i>Sternula albifrons</i>;</li> <li>Mediterranean gull <i>Ichthyaetus melanocephalus</i>;</li> <li>Roseate tern <i>Sterna dougallii</i>; and</li> <li>Sandwich tern <i>Thalasseus sandvicensis</i>.</li> </ul> <p>Pelagic seabirds with large foraging ranges:</p> <ul style="list-style-type: none"> <li>European storm petrel (hereafter ‘storm petrel’) <i>Hydrobates pelagicus</i>;</li> <li>Leach’s storm petrel <i>H. leucorhous</i>;</li> </ul> |

| QI category                                                                                                                                                                | Relevant QI(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Manx shearwater <i>Puffinus puffinus</i>;</li> <li>Northern fulmar (hereafter 'fulmar') <i>Fulmarus glacialis</i>; and</li> <li>Northern gannet (hereafter 'gannet') <i>Morus bassanus</i>.</li> </ul> <p>Other:</p> <ul style="list-style-type: none"> <li>European shag (hereafter 'shag') <i>Gulosus aristotelis</i>; and</li> <li>Great cormorant (hereafter 'cormorant') <i>Phalacrocorax carbo</i>.</li> </ul>                                                                                                                                                                                                                                                                                                        |
| Red-throated diver*                                                                                                                                                        | <ul style="list-style-type: none"> <li>Red-throated diver <i>Gavia stellata</i>.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Other divers, seaducks and grebes                                                                                                                                          | <ul style="list-style-type: none"> <li>Black-throated diver <i>G. arctica</i>;</li> <li>Common eider (hereafter 'eider') <i>Somateria mollissima</i>;</li> <li>Common goldeneye (hereafter 'goldeneye') <i>Bucephala clangula</i>;</li> <li>Common scoter <i>Melanitta nigra</i>;</li> <li>Goosander <i>Mergus mergus</i>;</li> <li>Great crested grebe <i>Podiceps cristatus</i>;</li> <li>Greater scaup (hereafter 'scaup') <i>Aythya marila</i>;</li> <li>Great northern diver <i>G. immer</i>;</li> <li>Little grebe <i>Tachybaptus ruficollis</i>;</li> <li>Long-tailed duck <i>Clangula hyemalis</i>;</li> <li>Red-breasted merganser <i>M. serrator</i>;</li> <li>Slavonian grebe <i>P. auritus</i>; and</li> <li>Velvet scoter <i>M. fusca</i>.</li> </ul> |
| Intertidal birds                                                                                                                                                           | <ul style="list-style-type: none"> <li>All birds that carry out all or most activities (e.g. foraging, roosting, loafing and preening) in the intertidal zone. Includes waders and herons (including egrets).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Migratory birds (flying)                                                                                                                                                   | <ul style="list-style-type: none"> <li>All potentially migratory bird species including all those above.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Osprey*                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Osprey <i>Pandion haliaetus</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>* - As red-throated diver and osprey require different disturbance/displacement buffer requirements to other species, these QI are presented in their own category.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

- 4.6.1.3 In line with the defined scope of the assessment, only SPAs situated within the UK coastal and marine environment (i.e. not those situated inland or within the Republic of Ireland) were considered. As the designated QIs of inland and Irish sites are considered to have no ecological connectivity with the Project site, there is no plausible impact pathway and therefore no LSE. See Table 4-11 for impact scoping and justification for excluding migratory QIs.
- 4.6.1.4 As outlined in Section 4.6.1 species-specific connectivity parameters, based on known foraging ranges and ecological sensitivity, are used to determine the full extent of potential connectivity, particularly for seabird QIs. Table 4-10 presents the designated sites located within 265.4 km of the Project areas. Based on the screening outcomes in Section 5.6.3, the species with the largest foraging range was used to define the initial spatial boundary in which to identify sites that have ecological connectivity to the Project. In this instance, the largest foraging range is 265.4 km (mean-max plus one standard deviation (MMFR+1SD) for puffin (Woodward *et al.*, 2017) (see Table 5-6).
- 4.6.1.5 This approach ensures that all sites with a realistic potential for ecological connectivity are appropriately assessed, while maintaining a proportionate, transparent and evidence-based screening process.

Table 4-10: Sites of Ornithological Relevance of the Moray FLOW-Park Project Areas.

| Designated sites                         | Designated QIs                                                                                                                                                                                                                                                                                                | Straight line distance from Project area (km) |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Moray Firth SPA                          | Common scoter, red-throated diver, red-breasted merganser, great-northern diver, eider, scaup, Slavonian grebe, goldeneye, long-tailed duck, velvet scoter, shag.                                                                                                                                             | 0.00                                          |
| Moray and Nairn Coast SPA/Ramsar         | Redshank <i>Tringa totanus</i> , bar-tailed godwit <i>Limosa lapponica</i> , dunlin <i>Calidris alpina</i> , wigeon <i>Marecca penelope</i> , oystercatcher <i>Haematopus ostralegus</i> , red-breasted merganser, greylag goose <i>Anser anser</i> , pink-footed goose <i>Anser brachyrhynchus</i> , osprey. | 0.92                                          |
| Inner Moray Firth SPA/Ramsar             | Redshank, common tern, teal <i>Anas crecca</i> , Wigeon, oystercatcher, curlew <i>Numenius arquata</i> , cormorant, red-breasted merganser, scaup, goldeneye, goosander, greylag goose, osprey.                                                                                                               | 16.79                                         |
| Dornoch Firth and Loch Fleet SPA/Ramsar* | Redshank, bar-tailed godwit, dunlin, teal, wigeon, oystercatcher, curlew, scaup, greylag goose                                                                                                                                                                                                                | 18.09                                         |

| Designated sites                                   | Designated QIs                                                                                                                                                                                    | Straight line distance from Project area (km) |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Cromarty Firth SPA/Ramsar                          | Redshank, common tern, bar-tailed godwit, Dunlin, pintail <i>Anas acuta</i> , wigeon, oystercatcher, curlew, red-breasted merganser, scaup, greylag goose, knot <i>Calidris canutus</i> , osprey. | 18.25                                         |
| East Caithness Cliffs SPA                          | Guillemot, fulmar, cormorant, razorbill, kittiwake, great black-backed gull, shag, herring gull                                                                                                   | 43.63                                         |
| Troup, Pennan and Lion's Heads SPA                 | Guillemot, fulmar, razorbill, kittiwake, herring gull                                                                                                                                             | 70.87                                         |
| Caithness Lochs SPA                                | Greenland white-fronted goose <i>Anser albifrons</i> , greylag goose                                                                                                                              | 85.84                                         |
| North Caithness Cliffs SPA                         | Guillemot, fulmar, puffin, razorbill, kittiwake                                                                                                                                                   | 95.26                                         |
| Loch of Strathbeg SPA                              | Sandwich tern, teal, goldeneye, greylag goose, pink-footed goose                                                                                                                                  | 97.21                                         |
| Ythan Estuary, Sands of Forvie and Meikle Loch SPA | Little tern, sandwich tern, redshank, common tern, lapwing, eider, pink-footed goose                                                                                                              | 98.50                                         |
| Buchan Ness to Collieston Coast                    | Guillemot, fulmar, kittiwake, shag, herring gull                                                                                                                                                  | 104.09                                        |
| Priest Island (Summer Isles) SPA                   | Storm petrel                                                                                                                                                                                      | 110.37                                        |
| Handa SPA                                          | Guillemot, fulmar, razorbill, kittiwake                                                                                                                                                           | 113.32                                        |
| Pentland Firth Islands SPA                         | Arctic tern                                                                                                                                                                                       | 114.03                                        |
| Hoy SPA                                            | Guillemot, red-throated diver, fulmar, puffin, kittiwake, great black-backed gull                                                                                                                 | 116.65                                        |
| Fowlsheugh SPA                                     | Guillemot, fulmar, razorbill, kittiwake, herring gull                                                                                                                                             | 117.48                                        |
| Cape Wrath SPA                                     | Guillemot, fulmar, puffin, razorbill, kittiwake                                                                                                                                                   | 118.75                                        |
| Scapa Flow SPA                                     | Red-throated diver, red-breasted merganser, great-northern diver, eider, Slavonian grebe, black-throated diver, long-tailed duck, shag                                                            | 119.11                                        |
| Montrose Basin SPA                                 | Redshank, dunlin, wigeon, oystercatcher, shelduck, eider, greylag goose, knot, pink-footed goose                                                                                                  | 122.21                                        |
| Copinsay SPA                                       | Guillemot, fulmar, kittiwake, great black-backed gull                                                                                                                                             | 137.30                                        |

| Designated sites                                    | Designated QIs                                                                                                                                                                                                                                                                                                                             | Straight line distance from Project area (km) |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Firth of Tay & Eden Estuary SPA                     | Marsh harrier, little tern, redshank, bar-tailed godwit, black-tailed godwit, dunlin, grey plover oystercatcher, shelduck, cormorant, sanderling red-breasted merganser, eider, goldeneye, long-tailed duck, velvet scoter, goosander, greylag goose, pink-footed goose                                                                    | 140.21                                        |
| Outer Firth of Forth and St Andrews Bay Complex SPA | Gannet, guillemot, common tern, arctic tern, red-throated diver, puffin, razorbill, red-breasted merganser, eider, Slavonian grebe, goldeneye, long-tailed duck, velvet scoter, kittiwake, Manx shearwater, little gull, shag, herring gull, black-headed gull, common gull                                                                | 140.63                                        |
| North Orkney SPA                                    | Red-throated diver, great-northern diver, Slavonian grebe, velvet scoter                                                                                                                                                                                                                                                                   | 141.17                                        |
| Sule Skerry and Sule Stack SPA                      | Gannet, guillemot, puffin, storm-petrel, shag                                                                                                                                                                                                                                                                                              | 152.77                                        |
| Marwick Head SPA                                    | Guillemot, kittiwake                                                                                                                                                                                                                                                                                                                       | 153.25                                        |
| The Shiant Isles SPA                                | Guillemot, fulmar, puffin, razorbill, kittiwake, shag                                                                                                                                                                                                                                                                                      | 154.60                                        |
| Auskerry SPA                                        | Arctic tern, storm-petrel                                                                                                                                                                                                                                                                                                                  | 156.51                                        |
| Rousay SPA                                          | Guillemot, Arctic tern, fulmar, kittiwake                                                                                                                                                                                                                                                                                                  | 160.39                                        |
| Rum SPA                                             | Guillemot, red-throated diver, Manx shearwater                                                                                                                                                                                                                                                                                             | 161.55                                        |
| Lewis Peatlands SPA                                 | Dunlin, red-throated diver, black-throated diver, greenshank, merlin, golden plover                                                                                                                                                                                                                                                        | 166.24                                        |
| Firth of Forth SPA                                  | Redshank, bar-tailed godwit, great crested grebe, dunlin, knot, ringed plover, grey plover, red-throated diver, lapwing, wigeon, oystercatcher, curlew, shelduck, cormorant, ruddy turnstone, red-breasted merganser, eider, scaup, Slavonian grebe, goldeneye, long-tailed duck, velvet scoter, mallard, pink-footed goose, golden plover | 168.40                                        |
| Calf of Eday SPA                                    | Guillemot, fulmar, cormorant, kittiwake, great black-backed gull                                                                                                                                                                                                                                                                           | 172.92                                        |
| West Westray SPA                                    | Guillemot, arctic tern, fulmar, razorbill, kittiwake                                                                                                                                                                                                                                                                                       | 174.23                                        |
| Forth Islands SPA                                   | Gannet, guillemot, lesser black-backed gull, sandwich tern, roseate tern, common tern, arctic tern, cormorant, puffin, razorbill, kittiwake, shag, herring gull                                                                                                                                                                            | 175.21                                        |
| East Sanday Coast SPA                               | Bar-tailed godwit, ruddy turnstone, purple sandpiper                                                                                                                                                                                                                                                                                       | 176.60                                        |

| Designated sites                                                | Designated QIs                                                                                                                   | Straight line distance from Project area (km) |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Canna and Sanday SPA                                            | Guillemot, puffin, kittiwake, shag, herring gull                                                                                 | 177.64                                        |
| Glas Eileanan SPA                                               | Common tern                                                                                                                      | 178.64                                        |
| Loch Lomond SPA                                                 | Greenland white-fronted goose                                                                                                    | 183.89                                        |
| West Coast of the Outer Hebrides SPA                            | Red-throated diver, red-breasted merganser, great-northern diver, eider, Slavonian grebe, black-throated diver, long-tailed duck | 186.13                                        |
| Imperial Dock Lock, Leith SPA                                   | Common tern                                                                                                                      | 190.15                                        |
| Coll and Tiree SPA                                              | Great-northern diver, eider                                                                                                      | 193.60                                        |
| Inner Clyde Estuary SPA                                         | Common redshank                                                                                                                  | 196.20                                        |
| North Rona and Sula Sgeir SPA                                   | Gannet, guillemot, fulmar, puffin, razorbill, kittiwake, storm-petrel, great black-backed gull                                   | 198.18                                        |
| Coll SPA                                                        | Greenland white-fronted goose                                                                                                    | 199.86                                        |
| North Uist Machair and Islands SPA                              | Common redshank, dunlin, ringed plover, oystercatcher, ruddy turnstone, purple sandpiper                                         | 206.25                                        |
| Treshnish Isles SPA                                             | European storm-petrel                                                                                                            | 206.45                                        |
| St Abb's Head to Fast Castle SPA                                | Guillemot, razorbill, kittiwake, shag, herring gull                                                                              | 211.77                                        |
| South Uist Machair and Lochs SPA                                | Little tern, redshank, dunlin, ringed plover, oystercatcher, sanderling                                                          | 218.01                                        |
| Sleibhtean agus Cladach Thiriodh (Tiree Wetlands and Coast) SPA | Redshank, dunlin, ringed plover, oystercatcher, ruddy turnstone, Greenland white-fronted goose                                   | 222.07                                        |
| Fair Isle SPA                                                   | Gannet, guillemot, arctic tern, fulmar, puffin, razorbill, kittiwake, shag                                                       | 225.06                                        |
| North Colonsay and Western Cliffs SPA                           | Guillemot, kittiwake                                                                                                             | 225.68                                        |
| Sound of Gigha SPA                                              | Red-breasted merganser, great-northern diver, eider, Slavonian grebe                                                             | 228.00                                        |
| Monach Isles SPA                                                | Little tern                                                                                                                      | 231.67                                        |
| Flannan Isles SPA                                               | Guillemot, fulmar, puffin, razorbill, kittiwake                                                                                  | 234.38                                        |
| Seas off St Kilda SPA                                           | Gannet, guillemot, fulmar, puffin, storm-petrel                                                                                  | 235.17                                        |

| Designated sites          | Designated QIs                                                                                                                                                                                                                     | Straight line distance from Project area (km) |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Northumbria Coast SPA     | Little tern, Arctic tern, ruddy turnstone, purple sandpiper                                                                                                                                                                        | 237.21                                        |
| Northumberland Marine SPA | Guillemot, little tern, sandwich tern, roseate tern, common tern, arctic tern, puffin                                                                                                                                              | 237.73                                        |
| Lindisfarne SPA           | Little tern, redshank, roseate tern, bar-tailed godwit, dunlin, ringed plover, grey plover, wigeon, shelduck, light-bellied brent goose, sanderling, red-breasted merganser, eider, long-tailed duck, greylag goose, golden plover | 239.82                                        |
| Seas off Foula SPA        | Guillemot, fulmar, puffin                                                                                                                                                                                                          | 249.93                                        |
| Mingulay and Berneray SPA | Guillemot, fulmar, puffin, razorbill, kittiwake, shag                                                                                                                                                                              | 250.85                                        |
| Gruinart Flats, Islay SPA | Greenland white-fronted goose                                                                                                                                                                                                      | 253.18                                        |
| Farne Islands SPA         | Guillemot, Sandwich tern, roseate tern, common tern, Arctic tern                                                                                                                                                                   | 257.65                                        |
| Rinns of Islay SPA        | Hen harrier, Greenland white-fronted goose                                                                                                                                                                                         | 258.21                                        |

\*Site is within the defined Zol/connectivity buffer but is not considered further due to no realistic ecological pathway or expected usage.

## 4.6.2 Impact Scoping

- 4.6.2.1 With consideration of the QIs within Table 4-10 above, Table 4-11 outlines the potential impacts, pathways of effect and connectivity distance for relevant QIs, determining whether the identified species should be carried forward for screening for LSE. Where species listed in Table 4-10 are not included within Table 4-11 it is concluded that there is no potential pathway for effect on that QI and will not be considered further.
- 4.6.2.2 Furness and Wade (2012), Bradbury *et al.* (2014), Wade *et al.*, (2016), and Deakin *et al.* (2022) have been referred to when considering sensitivity of species to potential impacts.
- 4.6.2.3 Assemblages are included under relevant impacts below, but impacts will only be assessed if a species within the assemblage, not already considered individually as a separate qualifying QI of the same site, is potentially affected. The nature of assemblages is that they are present to conserve the diversity of a site, and as such it is considered highly unlikely for there to be the potential for LSE.

- 4.6.2.4 Only species listed in the specified species lists are considered relevant to the respective impact pathway. Further justifications for the pathways considered relevant are provided below in Table 4-11.
- 4.6.2.5 Where the ZOI is referenced in Table 4-11 and elsewhere in the ornithology sections of this report, it refers to the spatial extent within which potential impacts from the Project may reasonably be expected to occur. The ZOI differs between impact pathways.
- 4.6.2.6 In contrast, connectivity refers to the likelihood that designated site QIs (i.e. species) may interact with those impacts. Connectivity is determined by species-specific behavioural and ecological characteristics, such as foraging range, migratory patterns, or habitat use, over relevant spatial scales. These parameters, as outlined in Table 5-6, are used to assess whether a designated QI is likely to be affected by the Project.
- 4.6.2.7 This distinction ensures that both the spatial reach of impacts and the ecological relevance to designated QIs are appropriately considered in the screening process.

Table 4-11: Impact pathways, ZOI and defined connectivity ranges for key impacts for Inshore and Intertidal Ornithology.

| Potential Impact                                 | Zone of influence     | C | O&M | D | Species/QI                                                                  | Connectivity | Scoped In/Scoped Out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------|-----------------------|---|-----|---|-----------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collision risk from wet storage FLOW foundations | Development footprint | - | ✓   | - | All designated QIs sensitive to collision impacts, including migratory QIs. | -            | <b>Scoped Out</b><br>As there are no turbines wet-stored, there is no risk of collision, this impact is therefore proposed to be scoped out.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Barrier effects from FLOW foundations            | Development footprint | - | ✓   | - | All designated QI categories.                                               | -            | <b>Scoped Out</b><br>The Moray FLOW-Park Project areas occupy a small area compared to the scale of migratory flyways. Birds have ample space to adjust their flight paths without incurring substantial detours, making large-scale barrier effects unlikely. Furthermore, Masden <i>et al.</i> (2009; 2010; 2012) and Speakman <i>et al.</i> (2009) calculated that the costs of one-off avoidances during migration were small, accounting for less than 2% of available fat reserves barrier effects are included within the Disturbance and displacement assessment for QIs of SPAs in proximity to the Project. This |

| Potential Impact                                                                          | Zone of influence | C | O&M | D | Species/QI                                                      | Connectivity                                                                                          | Scoped In/Scoped Out                                                                                                                                                   |
|-------------------------------------------------------------------------------------------|-------------------|---|-----|---|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                           |                   |   |     |   |                                                                 |                                                                                                       | impact is therefore proposed to be scoped out.                                                                                                                         |
| Disturbance and displacement (auditory, visual and physical presence of FLOW foundations) | 2-10 km           | ✓ | ✓   | ✓ | Seabirds (breeding and non-breeding) – auks only.               | Foraging range of designated species (following individual species' preferred metric from Table 5-6). | <b>Scoped In</b>                                                                                                                                                       |
|                                                                                           |                   |   |     |   | Seabirds (breeding and non-breeding) – all other subcategories. | -                                                                                                     | <b>Scoped Out</b><br>See explanatory summary in Paragraph 4.6.2.8.                                                                                                     |
|                                                                                           |                   |   |     |   | Red-throated diver.                                             | Sites within 10 km of Project areas.                                                                  | <b>Scoped In</b>                                                                                                                                                       |
|                                                                                           |                   |   |     |   | Other divers, seaducks and grebes.                              | Sites within 4 km of Project areas.                                                                   | <b>Scoped In</b>                                                                                                                                                       |
|                                                                                           |                   |   |     |   | Intertidal birds and Wildfowl (non-seaducks).                   | Sites within a maximum of 650 m (Goodship and Furness, 2022) of Project areas.                        | <b>Scoped Out</b><br>No works or FLOW foundations are expected to occur within the maximum disturbance range of intertidal birds (650 m) (Goodship and Furness, 2022). |

| Potential Impact   | Zone of influence | C | O&M | D | Species/QI         | Connectivity                                                                     | Scoped In/Scoped Out                                                                                                                                                                                                                                                                                     |
|--------------------|-------------------|---|-----|---|--------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                   |   |     |   |                    |                                                                                  | This impact is therefore proposed to be scoped out.                                                                                                                                                                                                                                                      |
|                    |                   |   |     |   | Osprey             | Sites within 20 km foraging range, (Scottish Natural Heritage, 2016).            | <b>Scoped In</b>                                                                                                                                                                                                                                                                                         |
| Vessel disturbance | 2 – 10 km         | ✓ | ✓   | ✓ | Migratory birds    | Development footprint only.                                                      | <b>Scoped Out</b><br>As these birds will be flying over/around any activities and FLOW foundations that may be occurring within the development footprint, the exposure to any adverse effects resulting from these impacts is considered to be low. This impact is therefore proposed to be scoped out. |
|                    |                   |   |     |   | Red-throated diver | Sites within 10 km of Project areas (Dierschke et al., 2017; JNCC et al., 2022). | <b>Scoped In</b>                                                                                                                                                                                                                                                                                         |

| Potential Impact | Zone of influence | C | O&M | D | Species/QI                                                      | Connectivity                                           | Scoped In/Scoped Out                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|-------------------|---|-----|---|-----------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                   |   |     |   | Other divers, seaducks and grebes                               | Sites within 4 km of Project areas (JNCC/SNCBs, 2017). | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                  |                   |   |     |   | Seabirds (breeding and non-breeding)                            | -                                                      | <b>Scoped Out</b><br>Evidence suggests all seabird species in this category are unlikely to be severely affected by vessel activity beyond insignificant levels of disturbance as they are able to exploit a wider array of prey-supporting habitats and operate over wider spatial scales than those QIs that are considered to be affected by vessel disturbance (divers and seaducks). This impact is therefore proposed to be scoped out. |
|                  |                   |   |     |   | Other seabirds - cormorant and shag (breeding and non-breeding) | Sites within 2 km of the Project areas.                | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                  |                   |   |     |   | Intertidal birds and Wildfowl                                   | Sites within a maximum of 650 m (for                   | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Potential Impact                     | Zone of influence                        | C | O&M | D | Species/QI                                                                     | Connectivity                                                          | Scoped In/Scoped Out                                                                                                                                                |
|--------------------------------------|------------------------------------------|---|-----|---|--------------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                                          |   |     |   |                                                                                | curlew)<br>(Goodship and Furness, 2022)<br>of Project areas.          |                                                                                                                                                                     |
|                                      |                                          |   |     |   | Osprey                                                                         | Sites within 20 km foraging range, (Scottish Natural Heritage, 2016). | <b>Scoped in</b>                                                                                                                                                    |
| Indirect impacts via effects on prey | A maximum of 20 km for all QI categories | ✓ | ✓   | ✓ | All seabirds, red-throated divers, other divers, seaducks and grebes, ospreys. | Designated species of sites within 20 km of the Project.              | <b>Scoped In</b>                                                                                                                                                    |
| Entanglement (direct)                | Development footprint                    | - | ✓   | - | All designated QI categories.                                                  | Designated species of sites within 20 km of the Project.              | <b>Scoped Out</b><br>Entanglement with mooring lines is highly unlikely due to the size and visibility of the lines. Further information outlined in Section 4.6.2. |
| Entanglement (secondary)             | Development footprint                    | - | ✓   | - | Seabirds (auks, shags and cormorant), red-throated divers, other divers,       | Designated species of sites within 20 km of the Project.              | <b>Scoped In</b>                                                                                                                                                    |

| Potential Impact                 | Zone of influence     | C | O&M | D | Species/QI                    | Connectivity | Scoped In/Scoped Out                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------|-----------------------|---|-----|---|-------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |                       |   |     |   | seaducks and grebes, osprey.  |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Impacts from artificial lighting | Development footprint | ✓ | ✓   | ✓ | All designated QI categories. | -            | <b>Scoped Out</b><br>Primarily, nocturnal seabirds such as storm petrels and shearwaters are known to be impacted by artificial lighting (NatureScot, 2020). Evidence from past survey work around the Moray Firth suggests these taxa will be infrequently present at the Project areas (E.g. Moray OWF (East) Ltd., 2018; MacArthur Green, 2023). Due to the lack of designated QIs that are sensitive to artificial lighting, exposure from such impacts to these QIs is expected to be insignificant. This impact is therefore proposed to be scoped out. |
| Accidental pollution             | 2km                   | ✓ | -   | ✓ | All designated QI categories. | -            | <b>Scoped Out</b><br>Accidental pollution events are expected to be limited in scale and duration, with effects confined to the local area. The likelihood of a major incident occurring that could impact                                                                                                                                                                                                                                                                                                                                                    |

| Potential Impact | Zone of influence     | C | O&M | D | Species/QI                    | Connectivity                | Scoped In/Scoped Out                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|-----------------------|---|-----|---|-------------------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  |                       |   |     |   |                               |                             | bird populations at a significant level is considered extremely low. Furthermore, all vessel operations will comply with the Annex I Regulations for the Prevention of Pollution by Oil under the International Convention for the Prevention of Pollution from Ships MARPOL Convention. This is a legal requirement to comply with, which ensures that the risk of pollution is extremely small and effectively negligible for all species. This impact is therefore proposed to be scoped out. |
| Habitat loss     | Development footprint | ✓ | ✓   | ✓ | All designated QI categories. | Development footprint only. | <b>Scoped In</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

A dash (-) signifies the absence of impact pathway at the relevant developmental stage.

4.6.2.8 The bullets below outline the scoped-in impacts and identifies which groups of marine bird QIs are to be screened in for further assessment. This provides additional context to the information presented in the preceding table.

- **Disturbance and displacement** (from auditory, visual, presence of FLOW foundations and vessel activity) – Within the seabirds category, only auks (please see Table 4-9) and diver and seaduck species are considered to be affected by this impact pathway. Gulls are highly mobile surface feeders and are thus not considered to be sensitive to disturbance and displacement impacts. In addition, cormorant and shag show no evidence of being repelled from OWFs or offshore infrastructure (JNCC/SNCBs, 2017). The same scenario is expected for FLOW Park. All other bird QI categories (other than migratory birds) are proposed to be scoped in for assessments on disturbance/displacement related impacts.
- **Indirect impacts via effects on prey** – All designated QIs of sites within 20 km of the Project areas only (other than for intertidal birds and migratory birds) are proposed to be scoped into further assessments. Indirect effects on prey are expected to diminish rapidly with distance from the source. Beyond 20 km, prey availability is unlikely to be measurably affected, and birds are expected to be able to access alternative foraging areas without significant energetic cost. Therefore, it is not considered that there is a pathway for significant effect beyond 20 km. All other bird QI categories other than intertidal and migratory birds are proposed to be considered for indirect impacts via effects on prey, as these QIs will not be occupying habitats for foraging, or feeding on prey, which have the capability to be impacted from works within the Moray FLOW Park areas.
- **Entanglement** – Entanglement has been defined as direct – where birds become entangled with mooring lines, and secondary, where lost or 'ghost' fishing gear becomes entangled with mooring lines, creating a risk for birds being caught. All ornithology receptors have been scoped out of direct entanglement with mooring lines. The lines are highly visible at a diameter of over 100 mm and therefore can be avoided by all species and present a very low risk. Within the seabirds category, only pursuit diving birds (auks, shag and cormorant) are considered to be susceptible to secondary entanglement. Terns, gulls (including kittiwake) and gannets have a low sensitivity to entanglement, as these QIs are highly mobile surface feeders. Pursuit diving seabirds, red-throated diver, and other divers, seaducks and grebes are proposed to be scoped in for assessments on secondary entanglement (Northridge *et al.*, 2020). The probability of SPA feature entanglement beyond 20 km is considered highly unlikely; therefore, SPAs located more than 20 km away have no realistic pathway to LSE.
- **All impacts** – Due to limited evidence of any reliance or visitation to the inner Moray Firth waters where the Project areas are located, pelagic

seabirds with large foraging ranges (please see Table 4-9) are all proposed to be scoped out of any assessments (Moray OWF (East) Ltd., 2018; MacArthur Green, 2023).

- **Habitat loss** -Defined as a loss or reduction in the area available to wild birds, as a direct result of the physical presence of the project infrastructure and vessels, for foraging, roosting, moulting and all other activities, and includes the sea surface area, water column (three dimensional) and sea floor habitats. All designated QIs of sites within the footprint of the Project are scoped in for direct habitat loss for all phases of the Project.

4.6.2.9 While kittiwake and gannet are recommended for inclusion in NatureScot (2023c) Guidance Note 8 when assessing distributional responses, displacement, and barrier effects in marine developments, their relevance to the Moray FLOW-Park is considered limited. This is due to the comparatively smaller scale of the Project and its inshore location within the more enclosed area of the Moray Firth. As such, it is unlikely that these species regularly frequent the Project area, and any distributional or displacement effects are expected to be negligible and not exceed background levels.

## 5 Screening undertaken for the Project

### 5.1 Screening Process

5.1.1.1 In Section 4, a list of relevant European sites and their QIs was identified based on potential impacts arising from activities associated with the Project. This section evaluates the potential for LSEs on the designated sites and relevant QIs scoped in from Section 4, with justification provided for each assessment.

### 5.2 Marine and Coastal Processes

#### 5.2.1 Impacts

5.2.1.1 The impacts scoped into the screening assessment are detailed in Table 4-2. The impacts considered for Marine and Coastal Processes QIs are:

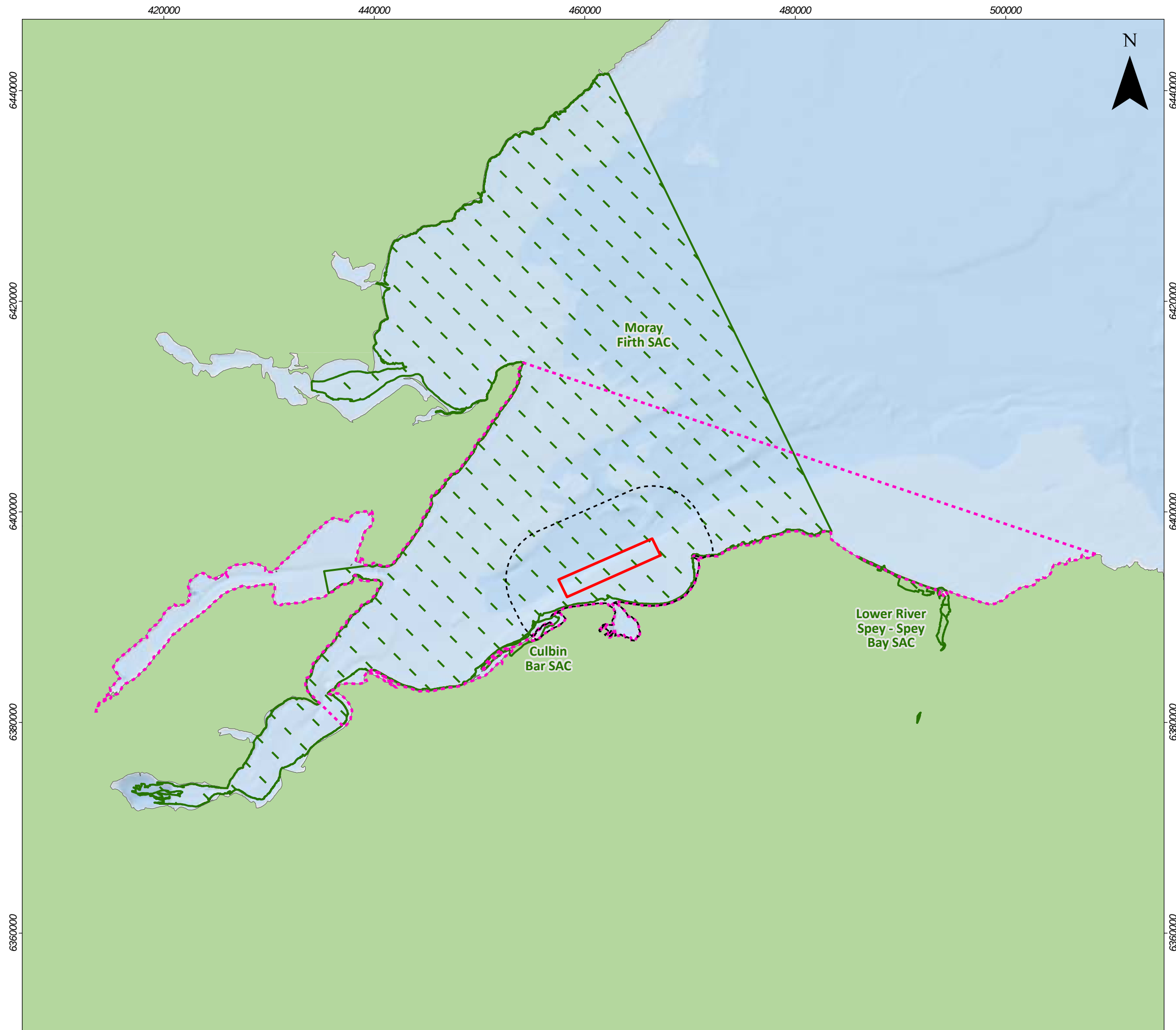
- Increase in SSCs and change to seabed levels (temporary);
- Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions) (temporary);
- Modifications to the wave and tidal regime, and associated impacts to morphological features (permanent) (O&M) for the subtidal sandbanks QI;
- Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&M) for the and
- Seabed scouring (permanent) (O&M).

#### 5.2.2 Screening of sites

5.2.2.1 Table 5-1 and Figure 5-1 clarifies the screening results of the Project for Marine and Coastal Processes receptor group.

Table 5-1: Screening Results of the Project for Marine and Coastal Processes Receptors.

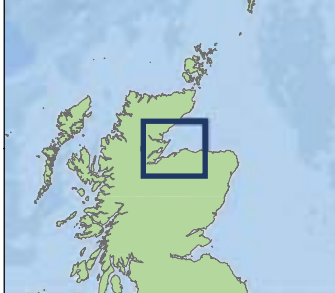
| Designated Site                 | Relevant QI(s)                                                                                   | Distance to Project (km) | Potential for Likely Significant Effects (per Phase of Development)                                                                                      |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                          | Can LSE be Screened out? (yes/no) |
|---------------------------------|--------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                                 |                                                                                                  |                          | Construction                                                                                                                                             | Operation & Maintenance                                                                                                                                                                                                                                                                                      | Decommissioning                                                                                                                                          |                                   |
| Moray Firth SAC                 | Subtidal Sandbanks                                                                               | 0                        | <p>Increase in SSCs and changes to seabed levels; and</p> <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions).</p> | <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions);</p> <p>Increase in SSCs and changes to seabed levels ;</p> <p>Seabed scouring; and</p> <p>Modifications to the wave and tidal regime, and associated impacts to morphological features (permanent) (O&amp;M).</p> | <p>Increase in SSCs and changes to seabed levels; and</p> <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions).</p> | <b>No</b>                         |
| Culbin Bar SAC                  | Atlantic salt meadows; Coastal shingle vegetation outside the reach of waves; and Shifting Dunes | 2.1                      | -                                                                                                                                                        | <p>Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&amp;M)</p>                                                                                                                                                       | -                                                                                                                                                        | <b>No</b>                         |
| Lower River Spey – Spey Bay SAC | Coastal shingle vegetation outside the reach of waves                                            | 18.8                     | -                                                                                                                                                        | <p>Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&amp;M)</p>                                                                                                                                                       | -                                                                                                                                                        | <b>No</b>                         |



Moray FLOW-Park  
HRA Screening

Sites Screened in for LSE for  
Marine and Coastal Processes

- Legend**
- Moray FLOW-Park
  - Sediment Transport Processes  
Zone of Influence
  - Tidal Excursion Zone of Influence
  - Special Area of Conservation (SAC)



**Notes**  
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Coordinate System:  
WGS1984 UTM Zone 30N

0 10 20 km

0 5 10 nm

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| Scale         | Date       | Drawn by | Checked by | Approved by |
| 1:350,000 @A3 | 21/07/2026 | EV       | BPHB       | CC          |

Figure 5-1

## 5.3 Benthic Subtidal and Intertidal Ecology

### 5.3.1 Impacts

5.3.1.1 The impacts scoped into the screening assessment are detailed in Table 5-2. The impacts considered for Benthic, Subtidal and Intertidal Ecology QIs are:

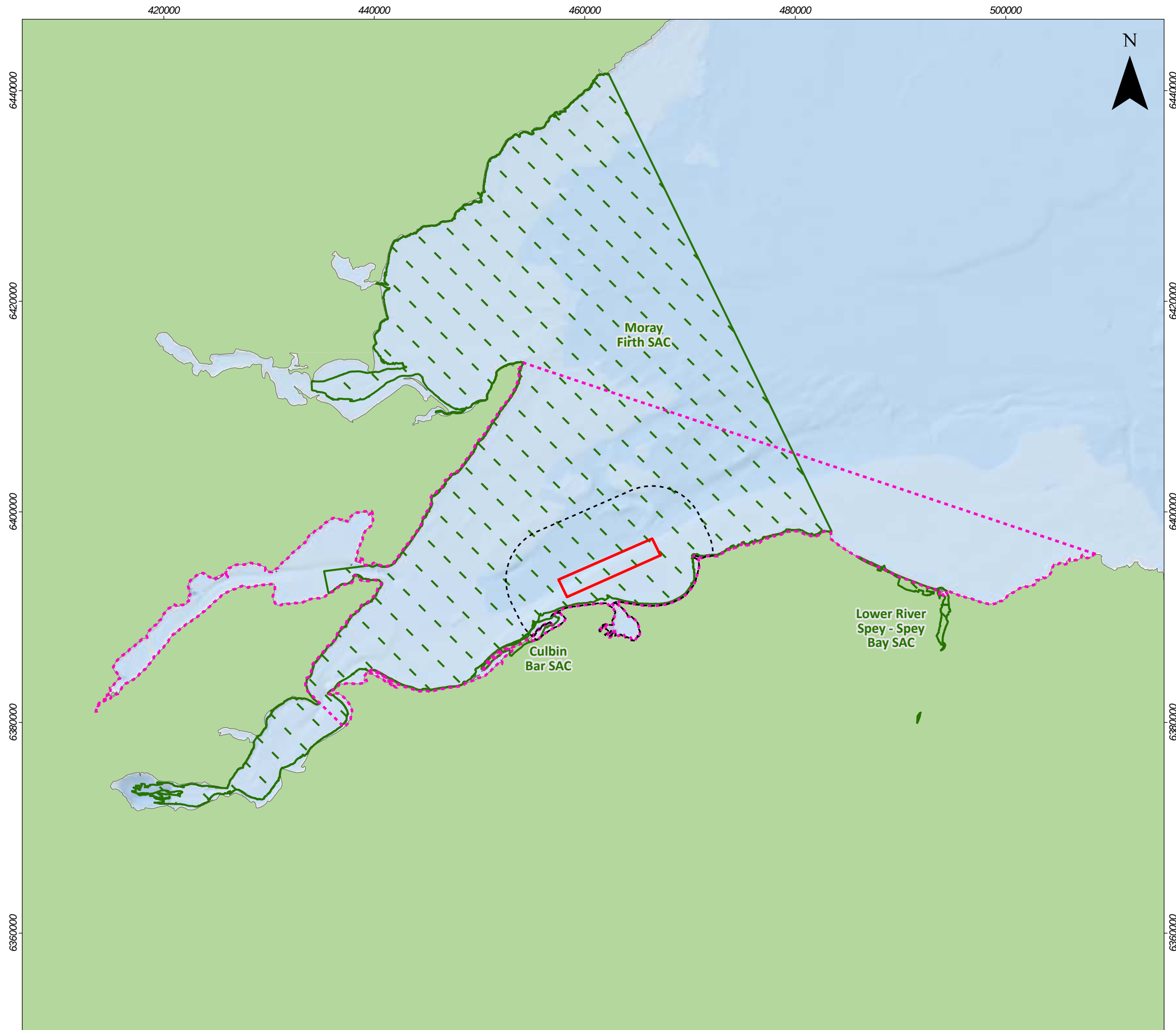
- Increase in SSC and deposition (temporary);
- Physical habitat loss and disturbance (temporary and permanent);
- Increased risk of introduction and/or spread of INNS (temporary);
- Colonisation of hard substrates (permanent); and
- Changes in physical processes (permanent) (O&M).

### 5.3.2 Screening of sites

5.3.2.1 Table 5-2 and Figure 5-2 clarifies the screening results of the Project for Benthic, Subtidal and Intertidal Ecology receptor group.

Table 5-2: Screening Results of the Project for Benthic Subtidal and Intertidal Ecology Receptors.

| Designated Site             | Relevant QI(s)                                                                                   | Distance to Project (km) | Potential for Likely Significant Effects (per Phase of Development)                                                                                                                                                                            |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                              | Can LSE be Screened out? (yes/no) |
|-----------------------------|--------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                             |                                                                                                  |                          | Construction                                                                                                                                                                                                                                   | Operation & Maintenance                                                                                                                                                                                                                                                                | Decommissioning                                                                                                                                                                              |                                   |
| Moray Firth SAC             | Subtidal Sandbanks                                                                               | 0                        | Increase in SSC and deposition (temporary);<br><br>Physical habitat loss/disturbance (temporary and permanent);<br><br>Increased risk of introduction and/or spread of INNS (temporary); and<br><br>Changes in physical processes (permanent). | Increase in SSC and deposition (temporary);<br><br>Physical habitat loss/disturbance (temporary and permanent);<br><br>Increased risk of introduction and/or spread of INNS (temporary);<br><br>Colonisation of hard substrates; and<br><br>Changes in physical processes (permanent). | Increase in SSC and deposition (temporary);<br><br>Physical habitat loss/disturbance (temporary and permanent); and<br><br>Increased risk of introduction and/or spread of INNS (temporary). | No                                |
| Culbin Bar SAC              | Atlantic salt meadows; Coastal shingle vegetation outside the reach of waves; and Shifting Dunes | 2.1                      | -                                                                                                                                                                                                                                              | Changes in physical processes (permanent)                                                                                                                                                                                                                                              | -                                                                                                                                                                                            | No                                |
| Lower River Spey – Spey Bay | Coastal shingle vegetation outside the reach of waves                                            | 18.8                     | -                                                                                                                                                                                                                                              | Changes in physical processes (permanent)                                                                                                                                                                                                                                              | -                                                                                                                                                                                            | No                                |

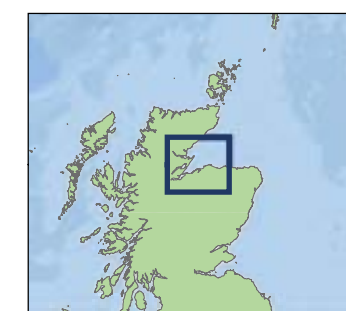


## Moray FLOW-Park HRA Screening

### Sites Screened in for LSE on Benthic, Subtidal and Intertidal Ecology

#### Legend

- Moray FLOW-Park
- Sediment Transport Processes  
Zone of Influence
- Tidal Excursion Zone of Influence
- Special Area of Conservation (SAC)



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0 10 20 km

0 5 10 nm

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Offshore Solutions Group  
4th Floor,  
205 Regent Street,  
London,  
W1B 4HB



www.offshoresolutionsgroup.com  
+44 208 123 3783

**Figure 5-2**

## 5.4 Fish and Shellfish Ecology

### 5.4.1 Impacts

The impacts scoped into the screening assessment are detailed in Table 4-6. The impacts considered for Fish and Shellfish Ecology QIs are:

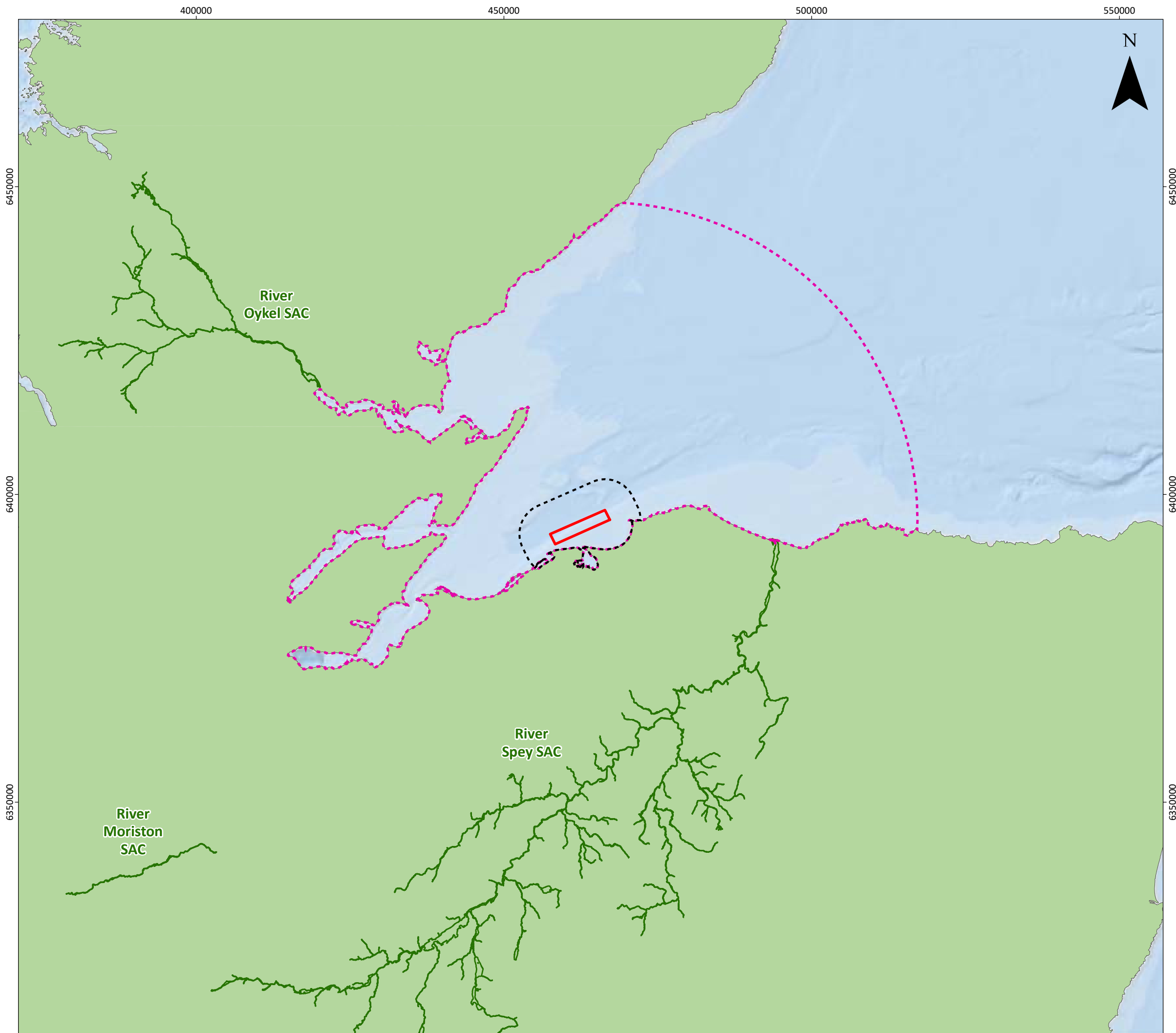
- Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary).
- Increases in SSC and deposition (temporary); and
- Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary).

### 5.4.2 Screening of sites

5.4.2.1 Table 5-3 and Figure 5-3 clarifies the screening results of the Project for Fish and Shellfish Ecology receptor group.

Table 5-3: Screening Results of the Project for Fish and Shellfish Ecology Receptors.

| Designated Site    | Relevant QI(s)                                                                         | Distance to Project (km)                                                | Potential for Likely Significant Effects (per Phase of Development)                                                                                                                                                                                                            |                                              |                                                                                                                                                                                                                                                                                    | Can LSE be Screened (Yes/No) out?                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                                                        |                                                                         | Construction                                                                                                                                                                                                                                                                   | Operation & Maintenance                      | Decommissioning                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| River Oykel SAC    | Atlantic salmon (Annex II); freshwater pearl mussel (Annex II)                         | 44.47                                                                   | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary)                                                                                                                                                                   | N/A                                          | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);                                                                                                                                                                      | <b>No</b><br>The designated site lies within the Zol for underwater noise.                                                                                                                                                                                                                                                                                                                                                               |
| River Spey SAC     | Atlantic salmon (Annex II); freshwater pearl mussel (Annex II); sea lamprey (Annex II) | 26.26                                                                   | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary)                                                                                                                                                                   | N/A                                          | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);                                                                                                                                                                      | <b>No</b><br>The designated site lies within the Zol for underwater noise.                                                                                                                                                                                                                                                                                                                                                               |
| River Moriston SAC | Atlantic salmon (Annex II); freshwater pearl mussel (Annex II)                         | 38.25 (by sea, avoiding any land crossings); 37.59 (in a straight line) | <p>Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);</p> <p>Increases in SSC and deposition (temporary);</p> <p>Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary)</p> | Increases in SSC and deposition (temporary); | <p>Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);</p> <p>Increases in SSC and deposition (temporary); and</p> <p>Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary)</p> | <p><b>No</b><br/>The mouth of the River Ness (which the River Moriston flows into) lies within the Zol for underwater noise.</p> <p>Whilst the mouth of the River Ness lies outside of the maximum tidal excursion distance (5 km), sediment plumes (and sediment bound contaminants) have the potential to result in barrier effects to migratory receptors, that will need to transit the Project to reach the River Moriston SAC.</p> |

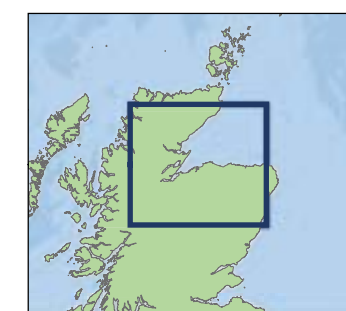


## Moray FLOW-Park HRA Screening

### Sites Screened in for LSE on Fish and Shellfish Ecology

#### Legend

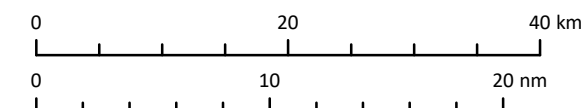
- Moray FLOW-Park
- Tidal Excursion Zone of Influence
- Underwater Noise ZoI (50 km Buffer)
- Special Area of Conservation (SAC)



#### Notes

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4th Floor,  
205 Regent Street,  
London,  
W1B 4HB



www.offshoresolutionsgroup.com  
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**Figure 5-3**

## 5.5 Marine Mammals

### 5.5.1 Impacts

5.5.1.1 The potential impacts scoped into the assessment are detailed in Table 4-8. The impacts considered for marine mammal QIs are:

- Underwater noise (temporary);
- Vessel disturbance (temporary);
- Vessel collision risk (temporary);
- Changes to prey (temporary or permanent);
- Habitat loss (temporary or permanent);
- Entanglement (direct) (O&M);
- Entanglement (secondary) (O&M);
- Barrier effect (permanent) (O&M);
- Collision risk with floating foundations (permanent) (O&M); and
- Changes in water quality (temporary).

### 5.5.2 Screening of sites

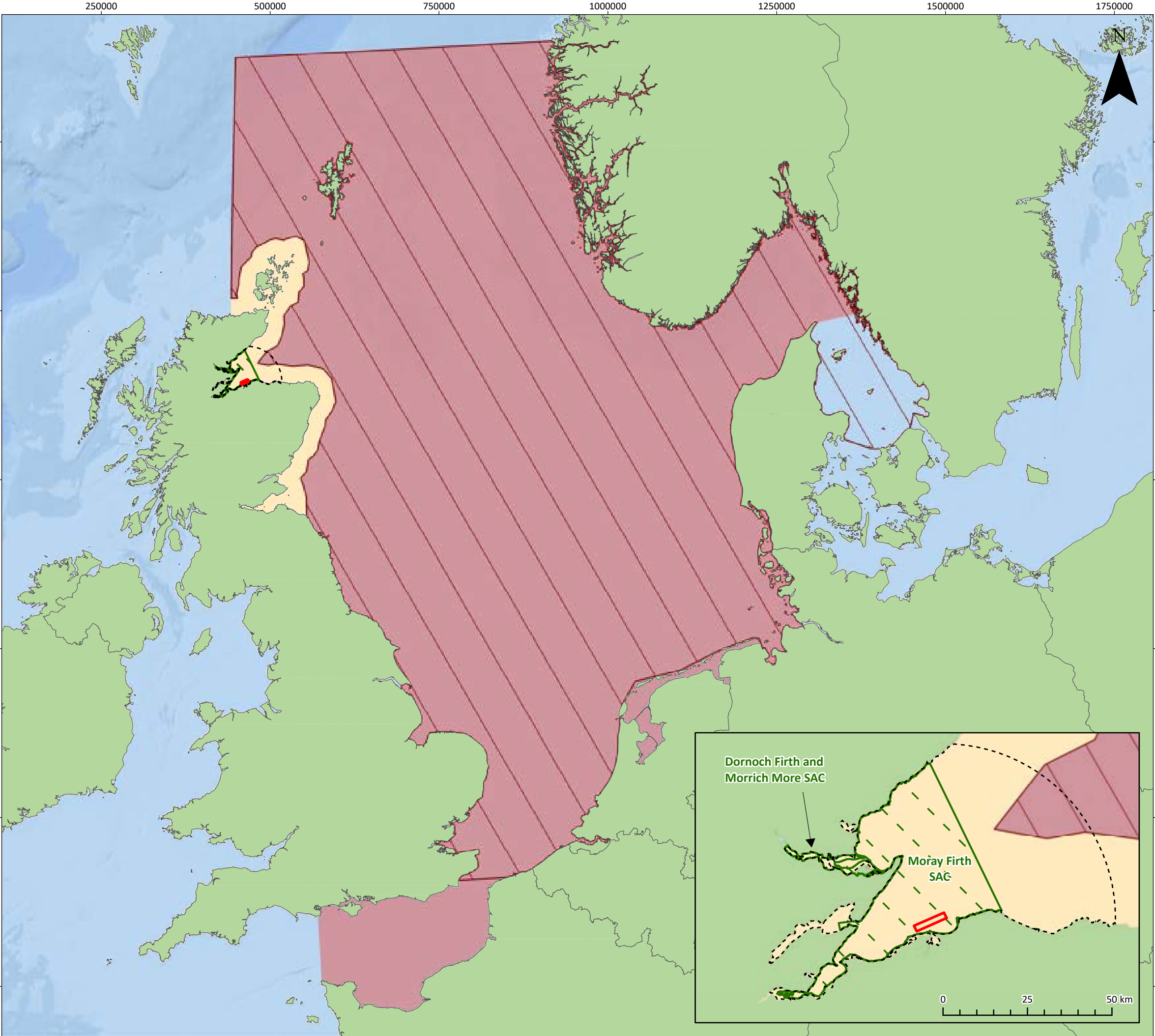
5.5.2.1 Table 5-4 and Figure 5-4 summarises the screening results of the Project for Marine Mammals.

Table 5-4: Screening Results of the Project for Marine Mammals.

| Designated Site                                                                   | Relevant QI(s)     | Distance to Project (km) | Activities and Infrastructure Potentially Resulting in Impact                                                             |                                                                                                                                                                                                                                      |                                                                                                                           | Can LSE be Screened out? (yes/no)                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------|--------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   |                    |                          | Construction                                                                                                              | Operation & Maintenance                                                                                                                                                                                                              | Decommissioning                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                    |
| Moray Firth SAC                                                                   | Bottlenose dolphin | 0.00                     | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; Habitat loss; and Changes in water quality. | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; Habitat loss; Entanglement (Direct); Entanglement (Secondary); Barrier effect; Collision risk with floating foundations; and Changes in water quality. | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; Habitat loss; and Changes in water quality. | <b>No</b> - Potential effects cannot be screened out at this stage and therefore there is a potential for LSE on the bottlenose dolphin QI of the SAC                                                                                                                                                                                                                              |
| Dornoch Firth and Morrich More SAC                                                | Harbour seal       | 28.23                    | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and Changes in water quality.               | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; Habitat loss; Entanglement (Direct); Entanglement (Secondary); Barrier effect; Collision risk with floating foundations; and Changes in water quality. | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and Changes in water quality.               | <b>No</b> - Potential effects cannot be screened out at this stage and therefore there is a potential for LSE on the harbour seal QI of the SAC.                                                                                                                                                                                                                                   |
| Southern North Sea SAC                                                            | Harbour porpoise   | 397.02                   | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and Changes in water quality.               | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; Entanglement (Direct); Entanglement (Secondary); Barrier effect; Collision risk with floating foundations; and Changes in water quality.               | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and Changes in water quality.               | <b>Yes</b> – For UK SACs, conservation objectives are largely site based, with limited consideration impacts to this QI outwith the SAC boundary. Due to the distance between the SAC and the Project, it is unlikely that potential effects would impact harbour porpoise within this SAC. Therefore, the Project is considered to have no LSE on harbour porpoise QI of the SAC. |
| Transboundary sites:<br>Vlaamse Banken SAC;<br>SBZ 1/ZPS 1 SAC<br>SBZ 2/ZPS 2 SAC | Harbour porpoise   | 518.11 (minimum)         | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and                                         | Underwater noise; Vessel disturbance; Vessel collision risk;                                                                                                                                                                         | Underwater noise; Vessel disturbance; Vessel collision risk; Changes to prey; and                                         | <b>Yes</b> - Due to distance between the SAC and the Project there is no pathway for effect for impacts on                                                                                                                                                                                                                                                                         |

| Designated Site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevant QI(s) | Distance to Project (km) | Activities and Infrastructure Potentially Resulting in Impact |                                                                                                                                                                          |                           | Can LSE be Screened out?<br>(yes/no)                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                          | Construction                                                  | Operation & Maintenance                                                                                                                                                  | Decommissioning           |                                                                                                                                 |
| SBZ 3/ZPS 3 SAC;<br>Vlakte van de Raan SAC;<br>Gule Rev SAC;<br>Knudegrund SAC;<br>Jyske Rev, Lillefiskerbanke SAC;<br>Lønstrup Rødgrund SAC;<br>Sandbanker ud for Thorsminde SAC;<br>Skagens Gren og Skagerrak SAC;<br>SPA Ostliche Deutsche Bucht;<br>Store Rev SAC;<br>Sydlige Nordsø SAC;<br>Sylter Außenriff SCI;<br>Thyborøn Stenvolde SAC;<br>Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde SAC;<br>Doggerbank SAC;<br>Klaverbank SAC;<br>Noordzeekustzone SAC;<br>Vlakte van de Raan SAC;<br>Waddenzee SAC;<br>Oosterschelde Westerschelde & Saeftinghe SAC;<br>Borkum-Riffgrund SCI;<br>Hamburgisches Wattenmeer SAC;<br>Helgoland mit Helgoländer Felssockel SAC;<br>Nationalpark Niedersächsisches Wattenmeer SAC;<br>NTP S-H Wattenmeer und angrenzende Küstengebiete SAC;<br>Unternelbe SAC;<br>Steingrund SAC;<br>Baie de Canche et couloir des trois estuaires SAC;<br>Bancs des Flandres SAC; |                |                          | Changes in water quality.                                     | Changes to prey;<br>Entanglement (Direct);<br>Entanglement (Secondary);<br>Barrier effect;<br>Collision risk with floating foundations; and<br>Changes in water quality. | Changes in water quality. | harbour porpoise within this SAC. Therefore, the Project is considered to have no LSE alone on harbour porpoise QI of this SAC. |

| Designated Site                                                                                                                                                                                                                                                                           | Relevant QI(s) | Distance to Project (km) | Activities and Infrastructure Potentially Resulting in Impact |                         |                 | Can LSE be Screened out?<br>(yes/no) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------|---------------------------------------------------------------|-------------------------|-----------------|--------------------------------------|
|                                                                                                                                                                                                                                                                                           |                |                          | Construction                                                  | Operation & Maintenance | Decommissioning |                                      |
| Baie de Seine occidentale SAC;<br>Baie de Seine orientale SAC;<br>Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant SAC;<br><br>Recifs Gris-Nez Blanc-Nez SAC; and Ridens et dunes hydrauliques du détroit du Pas-de-Calais SAC. |                |                          |                                                               |                         |                 |                                      |



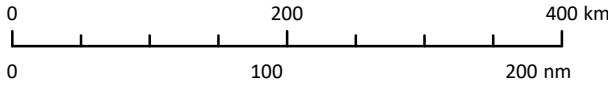
**Moray FLOW-Park  
HRA Screening**

**Sites Screened in for  
LSE on Marine Mammals**

- Legend**
- Moray FLOW-Park
  - Harbour Seal 50 km ZoI
  - Special Area of Conservation (SAC)
  - Harbour Porpoise**
    - North Sea MU
  - Bottlenose Dolphin**
    - Coastal East Scotland MU
    - Greater North Sea MU

**Notes**  
Esri, Garmin, GEBCO, NOAA  
NGDC, and other contributors  
Contains Ordnance Survey data  
© Crown copyright and database  
rights (2025). OS OpenData.

Coordinate System:  
WGS 1984 UTM Zone 30N



| Scale          | Date       | Drawn by | Checked by | Approved by |
|----------------|------------|----------|------------|-------------|
| 1:5,500,000@A3 | 21/07/2026 | EV       | BPHB       | CC          |

Offshore Solutions Group  
4th Floor,  
205 Regent Street,  
London,  
W1B 4HB



www.offshoresolutionsgroup.com  
+44 208 123 3783

**Figure 5-4**

Figure Reference: MFP\_HRA\_Fig5-4\_SitesScreenedForLSEMarineMammals\_v2

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## 5.6 Inshore and Intertidal Ornithology

### 5.6.1 Impacts

5.6.1.1 The impacts and species scoped into the screening assessment are detailed in Table 4-11. The impacts considered for Inshore and intertidal ornithology QIs are:

- Disturbance and displacement (auditory, visual and physical presence of FLOW foundations)
- Vessel disturbance;
- Indirect impacts via effects on prey;
- Entanglement (secondary with fishing gear); and
- Habitat loss.

### 5.6.2 Connectivity of QI groupings to designated sites

5.6.2.1 Table 5-5 below outlines the recommended connectivity definitions for each species group. These define the proposed connectivity ranges used throughout the screening in Table 5-7.

5.6.2.2 In addition, Table 5-6 presents the foraging ranges to be used to establish connectivity for breeding seabirds as part of the screening assessment below (Woodward *et al.*, 2019).

Table 5-5: Rules Summary Setting out QI Connectivity Definitions used in the Screening of Sites for HRA.

| Grouping                             | Connectivity definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seabirds (breeding and non-breeding) | <p>Breeding seabirds are central-place foraging birds. For offshore wind farm development, the recommended connectivity distances for each species are derived from mean maximum foraging range plus one standard deviation (MMF<math>\pm</math>1SD) during the breeding season (Woodward <i>et al.</i>, 2019). This is outlined within Guidance Note 3: Guidance to support Offshore Wind applications (NatureScot, 2023a). However, as the Project is not a full Offshore Wind application, the use of MMF<math>\pm</math>1SD to determine the connectivity of seabirds is considered over-precautionary and therefore the use of mean foraging ranges for seabirds is more ecologically proportionate.</p> <p>See Table 5-6 for a summary of the seabird foraging ranges from Woodward <i>et al.</i> (2019).</p> <p>For indirect impacts via effects on prey and entanglement, a 20 km buffer from designated sites beyond the Project boundary has been proposed and foraging ranges will not be used. In general, effects on prey availability and quality are more likely to affect marine birds with specialised</p> |

| Grouping                          | Connectivity definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | habitat requirements (such as seaducks and divers). Beyond this 20 km, effects on food webs are expected to attenuate for marine birds, where alternate sources of prey or foraging habitat are likely to be available.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Seabirds (non-breeding)           | For non-breeding seabird QIs of designated sites, standard breeding season foraging ranges for auk species (Table 5-6) only are proposed to be used in further assessments. Assessing impacts at the scale of the BDMPS region is not considered proportionate to the nature and location of the Project, which lies within the inner Moray Firth. The BDMPS approach is not supported by evidence on auk movements during the non-breeding season (e.g. Buckingham et al., 2022). For instance, the likelihood of auks breeding in the Farne Islands or Flamborough and Filey Coast wintering in the inner Moray Firth is extremely low. Therefore, breeding season foraging ranges have been deemed appropriate for screening designated sites during the non-breeding season as well. |
| Red-throated diver                | Although wintering red-throated diver are not constrained by the need to revisit a nest, birds show wintering site fidelity in areas such as those designated for SPAs like the Moray Firth. Connectivity to the Project area depends on the impact. SNCBs suggest a 10km buffer from designated sites (NatureScot, 2023b). For indirect impacts via effects on prey a 20 km buffer beyond the Project boundary has been proposed. Effects on prey availability and quality are more likely to affect marine birds with specialised habitat requirements (such as seaducks and divers). Beyond this 20 km, effects on food webs are expected to attenuate for marine birds, where alternate sources of prey or foraging habitat are likely to be available (JNCC, 2022).                 |
| Other divers, grebes and seaducks | Although wintering divers, seaducks and grebes are not constrained by the need to revisit a nest, birds show wintering site fidelity in areas such as those designated for SPAs like the Moray Firth. Connectivity to the Project area depends on the impact. SNCBs suggest a 4km buffer from designated sites beyond OWF boundaries due to the presence of turbines. This is used here conservatively as the Project is not a full OWF and does full turbines will not be present. For indirect impacts via effects on prey a 20 km buffer from designated sites beyond the Project boundary has been proposed. Effects on prey availability and quality are more likely to affect marine birds with specialised habitat requirements (such as seaducks and divers).                    |

| Grouping         | Connectivity definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | Beyond this 20 km, effects on food webs are expected to attenuate for marine birds, where alternate sources of prey or foraging habitat are likely to be available.                                                                                                                                                                                                                                                                                                                                                                                                       |
| Intertidal birds | Non-breeding waders and other birds that forage and roost in the intertidal zone which require limited buffers (maximum of 650 m (for curlew) (Goodship and Furness, 2022)) for disturbance and displacement effects. With the exception of vessels commuting between the Project areas to ports, all works within the Project area occur entirely inshore. These QIs are also highly unlikely to be affected by indirect impacts via effects on prey.                                                                                                                    |
| Migratory birds  | Migratory flying birds are only affected by collision risk and barrier effects which are both scoped out of further assessments (Table 4-11 for justifications).                                                                                                                                                                                                                                                                                                                                                                                                          |
| Osprey           | Ospreys are present in the breeding season and potentially breed in the nearby Moray and Nairn Coast SPA. Similarly to seabirds, they function as central place foragers. Recommended connectivity distances for this species are derived from Scottish Natural Heritage (2016) based on higher (regular) foraging distances of 20 km.<br>For breeding birds at nest sites, a buffer zone of 750 m is recommended by Goodship and Furness (2022) for this species. However, no SPAs with osprey as a breeding QI are located within this distance from the project areas. |

5.6.2.3 Breeding seabirds are central-place foragers which need to travel to potential sources of food. Table 5-6 below sets out breeding season foraging ranges for auk species that breed in the UK that are used to determine a designated QI's connectivity to potential disturbance and displacement (auditory, visual and physical presence of FLOW foundations) and vessel disturbance impacts caused by the Project. Only auks have been scoped in for impacts that require connectivity measured by foraging range (Table 4-11).

Table 5-6: Auk Breeding Seabird Foraging Ranges Derived from Woodward et al. (2019).

| Species common name | Foraging range (km) | Metric |
|---------------------|---------------------|--------|
| Guillemot           | 33.1                | Mean   |
| Razorbill           | 61.3                | Mean   |
| Puffin              | 62.4                | Mean   |

### 5.6.3 Screening of sites

- 5.6.3.1 Table 5-7 and Figure 5-5 details the screening results of the Project for Inshore and Intertidal Ornithology.
- 5.6.3.2 Impact pathways scoped in are discussed in Table 4-11. Solely those impacts, and relevant species for those impacts, scoped in have been discussed within the screening table below. Although all impacts and species have been considered, those scoped out have not been discussed further.
- 5.6.3.3 All transboundary sites have been screened out from further assessment due to their considerable distance from the Project area. Based on the spatial separation, there is no realistic ecological connectivity between the Project and designated QIs of these sites. As such, no plausible impact pathways exist that could result in an LSE. This conclusion is supported by species-specific connectivity parameters and the nature of the Project, which does not introduce transboundary pressures at a scale that would affect distant European sites.

Table 5-7: Screening Results of the Project for Inshore and Intertidal Ornithology Receptors.

| Designated Site                  | Effective Distance to Site (km) | QI grouping                       | Relevant QI(s)                                                                                                                                                                                                                                                        | Impact                                                                                                                                                                                                                                                            | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                                                   |
|----------------------------------|---------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Moray Firth SPA                  | 0                               | Seabirds (breeding)               | <ul style="list-style-type: none"> <li>Shag.</li> </ul>                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey;</li> <li>Entanglement (secondary); and</li> <li>Habitat loss</li> </ul>                                                                                                              | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for shag to be impacted by effects on prey availability, habitat loss and entanglement (secondary).                                               |
|                                  |                                 | Red-throated diver                | <ul style="list-style-type: none"> <li>Red-throated diver.</li> </ul>                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations);</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey;</li> <li>Entanglement (secondary); and</li> <li>Habitat loss</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for red-throated diver to be impacted by disturbance and displacement, effects on prey availability, habitat loss and entanglement (secondary).   |
|                                  |                                 | Other divers, seaducks and grebes | <ul style="list-style-type: none"> <li>Common scoter;</li> <li>Eider;</li> <li>Goldeneye;</li> <li>Great northern diver;</li> <li>Long-tailed duck;</li> <li>Red-breasted merganser;</li> <li>Scaup;</li> <li>Slavonian grebe; and</li> <li>Velvet scoter.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations);</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey;</li> <li>Entanglement (secondary); and</li> <li>Habitat loss</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for these designated QIs to be impacted by disturbance and displacement, effects on prey availability, habitat loss and entanglement (secondary). |
| Moray and Nairn Coast SPA/Ramsar | 0.92                            | Intertidal birds                  | <ul style="list-style-type: none"> <li>Bar-tailed godwit;</li> <li>Dunlin;</li> <li>Greylag goose;</li> <li>Oystercatcher;</li> <li>Pink-footed goose;</li> <li>Redshank; and</li> <li>Wigeon.</li> </ul>                                                             | <ul style="list-style-type: none"> <li>Vessel disturbance.</li> </ul>                                                                                                                                                                                             | All           | No                                | Based on the Zone of Influence and connectivity criteria as outlined in Section 4.6.2, the possibility exists for these designated QIs to be impacted by vessel disturbance.                                                                                 |
|                                  |                                 | Osprey                            | <ul style="list-style-type: none"> <li>Osprey</li> </ul>                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Disturbance and displacement</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey;</li> <li>Entanglement (secondary); and</li> </ul>                                                                             | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for this designated QI to be impacted by disturbance and displacement, vessel disturbance, indirect impacts on prey and entanglement (secondary). |

| Designated Site              | Effective Distance to Site (km) | QI grouping                       | Relevant QI(s)                                                                                                                                                                               | Impact                                                                                                                                                                                                                                                  | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                          |
|------------------------------|---------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                 |                                   |                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>Habitat loss.</li> </ul>                                                                                                                                                                                         |               |                                   |                                                                                                                                                                                                                                     |
|                              |                                 | Other divers, seaducks and grebes | <ul style="list-style-type: none"> <li>Red-breasted merganser.</li> </ul>                                                                                                                    | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, presence of flow foundations);</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey; Entanglement (secondary); and</li> <li>Habitat loss.</li> </ul>   | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for red-breasted merganser to be impacted by disturbance and displacement, impacts on prey and entanglement (secondary). |
| Inner Moray Firth SPA/Ramsar | 16.79                           | Seabird (breeding)                | <ul style="list-style-type: none"> <li>Common tern.</li> </ul>                                                                                                                               | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey; and</li> <li>Habitat loss</li> </ul>                                                                                                                                       | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for common tern to be impacted by effects on prey availability.                                                          |
|                              |                                 |                                   | <ul style="list-style-type: none"> <li>Cormorant.</li> </ul>                                                                                                                                 | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey;</li> <li>Entanglement (secondary); and</li> <li>Habitat loss.</li> </ul>                                                                                                   | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for cormorant to be impacted by effects on prey availability and entanglement (secondary).                               |
|                              |                                 | Other diver, seaduck or grebe     | <ul style="list-style-type: none"> <li>Goldeneye;</li> <li>Goosander;</li> <li>Red-breasted merganser; and</li> <li>Scaup.</li> </ul>                                                        | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations);</li> <li>Vessel disturbance;</li> <li>Entanglement (secondary); and</li> <li>Indirect impacts via effects on prey.</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, these designated QIs have connectivity to this site for all potential impacts.                                                                  |
|                              |                                 | Intertidal bird                   | <ul style="list-style-type: none"> <li>Bar-tailed godwit;</li> <li>Curlew;</li> <li>Greylag goose;</li> <li>Oystercatcher;</li> <li>Redshank;</li> <li>Teal; and</li> <li>Wigeon.</li> </ul> | <ul style="list-style-type: none"> <li>Vessel disturbance.</li> </ul>                                                                                                                                                                                   | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, these designated QIs have connectivity to this site for vessel disturbance.                                                                     |

| Designated Site           | Effective Distance to Site (km) | QI grouping                   | Relevant QI(s)                                                            | Impact                                                                                                                                                                                 | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                                                   |
|---------------------------|---------------------------------|-------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                                 | Osprey                        | <ul style="list-style-type: none"> <li>Osprey</li> </ul>                  | <ul style="list-style-type: none"> <li>Disturbance and displacement;</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey.; and</li> <li>Entanglement (secondary)</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for this designated QI to be impacted by disturbance and displacement, vessel disturbance, indirect impacts on prey and entanglement (secondary). |
| Cromarty Firth SPA/Ramsar | 18.25                           | Seabird (breeding)            | <ul style="list-style-type: none"> <li>Common tern.</li> </ul>            | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey.</li> </ul>                                                                                                | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for common tern to be impacted by effects on prey availability.                                                                                   |
|                           |                                 | Other diver, seaduck or grebe | <ul style="list-style-type: none"> <li>Red-breasted merganser.</li> </ul> | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey.</li> </ul>                                                                                                | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, this designated QI lies within the zone of influence of Project's potential indirect impacts via effects on prey.                                                        |
|                           |                                 |                               |                                                                           | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations); and</li> <li>Entanglement (secondary).</li> </ul>            | All           | Yes                               | This designated QI lies outside the Project's zone of influence (of 4km) for disturbance and displacement related impacts, so these impacts are scoped out.                                                                                                  |
|                           |                                 |                               | <ul style="list-style-type: none"> <li>Scaup.</li> </ul>                  | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey.</li> </ul>                                                                                                | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, this designated QI lies within the zone of influence of Project's potential indirect impacts via effects on prey.                                                        |
|                           |                                 |                               |                                                                           | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations); and</li> <li>Entanglement (secondary).</li> </ul>            | All           | Yes                               | This designated QI lies outside the Project's zone of influence (of 4km) for disturbance and displacement related impacts, so these impacts are scoped out.                                                                                                  |

| Designated Site                                | Effective Distance to Site (km) | QI grouping                   | Relevant QI(s)                                                                                                                                                                                                                                         | Impact                                                                                                                                                                                 | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                                                   |
|------------------------------------------------|---------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                |                                 | Intertidal bird               | <ul style="list-style-type: none"> <li>Bar-tailed godwit;</li> <li>Curlew;</li> <li>Dunlin;</li> <li>Greylag goose;</li> <li>Knot;</li> <li>Oystercatcher;</li> <li>Pintail;</li> <li>Redshank;</li> <li>Whooper swan; and</li> <li>Wigeon.</li> </ul> | <ul style="list-style-type: none"> <li>Vessel disturbance.</li> </ul>                                                                                                                  | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, these designated QIs have connectivity to this site for vessel disturbance.                                                                                              |
|                                                |                                 | Osprey                        | <ul style="list-style-type: none"> <li>Osprey</li> </ul>                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Disturbance and displacement;</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey.; and</li> <li>Entanglement (secondary)</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for this designated QI to be impacted by disturbance and displacement, vessel disturbance, indirect impacts on prey and entanglement (secondary). |
| <b>Dornoch Firth and Loch Fleet SPA/Ramsar</b> | 18.09                           | Other diver, seaduck or grebe | <ul style="list-style-type: none"> <li>Scaup.</li> </ul>                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Indirect impacts via effects on prey.</li> </ul>                                                                                                | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, scaup has connectivity to this site for impacts on prey availability.                                                                                                    |
|                                                |                                 | Osprey                        | <ul style="list-style-type: none"> <li>Osprey</li> </ul>                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>Disturbance and displacement;</li> <li>Vessel disturbance;</li> <li>Indirect impacts on prey.; and</li> <li>Entanglement (secondary)</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility exists for this designated QI to be impacted by disturbance and displacement, vessel disturbance, indirect impacts on prey and entanglement (secondary). |

| Designated Site                           | Effective Distance to Site (km) | QI grouping         | Relevant QI(s)                                                                       | Impact                                                                                                                               | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|---------------------------------|---------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>East Caithness Cliffs SPA</b>          | 43.63                           | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Razorbill.</li> </ul>                         | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | No                                | Based on the Zone of Influence and connectivity criteria outlined in Section 4.6.2, the possibility remains for these QIs to be impacted by disturbance and displacement impacts. The site sits within the mean foraging range of razorbill (61.3km) and is screened in (Woodward <i>et al.</i> , 2019).                                                              |
|                                           |                                 |                     | <ul style="list-style-type: none"> <li>Guillemot.</li> </ul>                         | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of guillemot (33.1km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out.                       |
| <b>Troup, Pennan and Lion's Heads SPA</b> | 70.87                           | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Guillemot; and</li> <li>Razorbill.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging ranges of guillemot and razorbill (33.1km and 61.3km (Woodward <i>et al.</i> , 2019)), indicating that features from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |
| <b>North Caithness Cliffs SPA</b>         | 95.26                           | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin; and</li> <li>Razorbill.</li> </ul>    | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging ranges of puffin and razorbill (62.4km and 61.3km (Woodward <i>et al.</i> , 2019)), indicating that features from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out.    |
| <b>Hoy SPA</b>                            | 116.65                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul>                            | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal                                                                                                      |

| Designated Site                                            | Effective Distance to Site (km) | QI grouping         | Relevant QI(s)                                            | Impact                                                                                                                               | Project Phase | Can LSE be Screened out? (yes/no) | Justification of Screening                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------|---------------------------------|---------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            |                                 |                     |                                                           |                                                                                                                                      |               |                                   | ecological consequence. Therefore, LSE can be excluded and is screened out.                                                                                                                                                                                                                                                                  |
| <b>Cape Wrath SPA</b>                                      | 118.75                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |
| <b>Outer Firth of Forth and St Andrews Bay Complex SPA</b> | 140.63                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |
| <b>Sule Skerry and Sule Stack SPA</b>                      | 152.77                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |
| <b>Fair Isle SPA</b>                                       | 225.06                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |
| <b>Seas off Foula SPA</b>                                  | 249.93                          | Seabirds (breeding) | <ul style="list-style-type: none"> <li>Puffin.</li> </ul> | <ul style="list-style-type: none"> <li>Disturbance and displacement (auditory, visual, and presence of flow foundations).</li> </ul> | All           | Yes                               | The site is outwith the mean foraging range of puffin (62.4km (Woodward <i>et al.</i> , 2019)), indicating that this feature from the SPA are unlikely to routinely utilise the Project area. Any potential disturbance would be highly localised and of minimal ecological consequence. Therefore, LSE can be excluded and is screened out. |

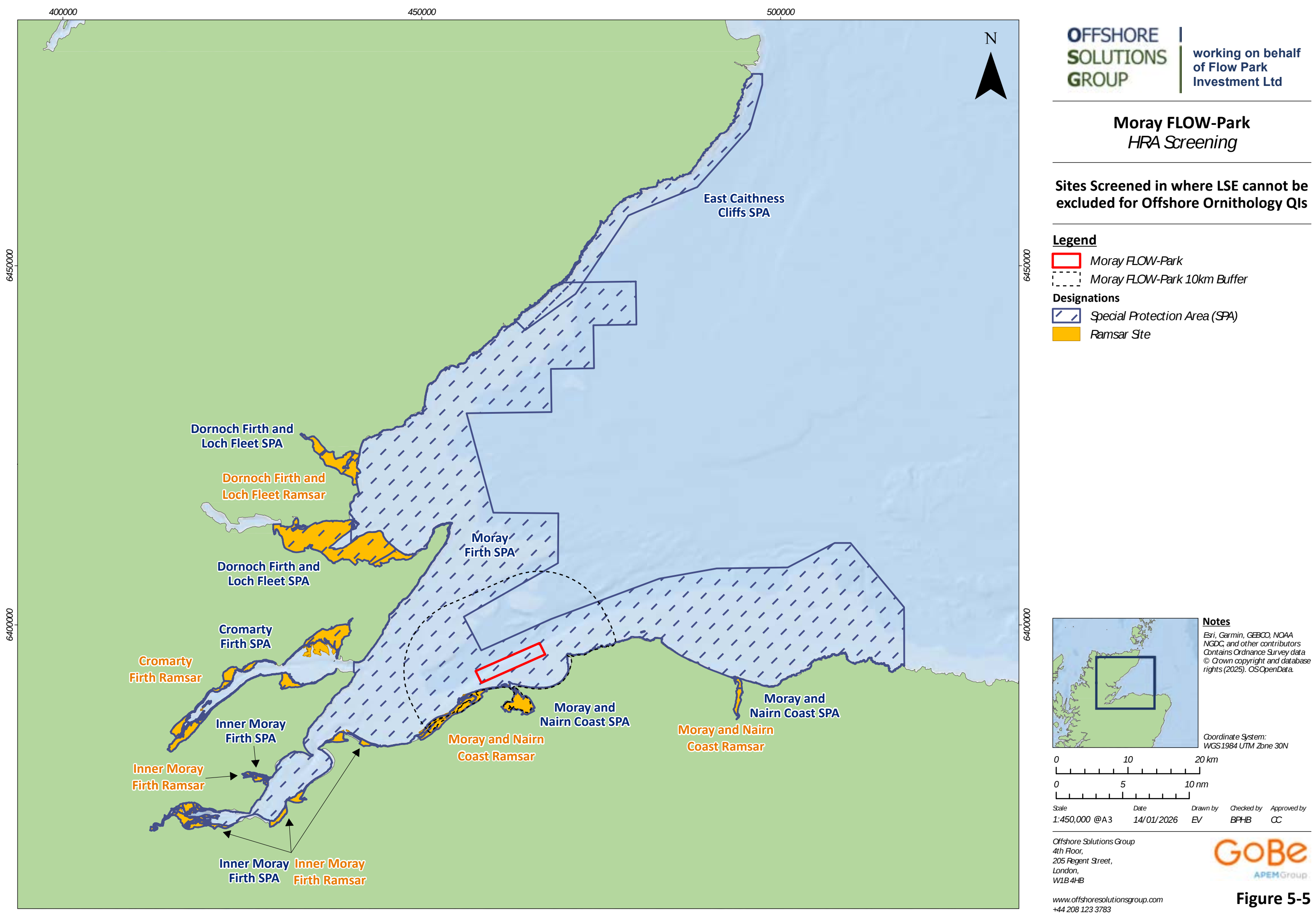


Figure Reference: MFP\_HRA\_Fig5-5\_StesScreenedForLSEOrnithology\_v2

Figure 5-5

## 6 Conclusion of HRA screening

- 6.1.1.1 Sites with potential for LSE, alone or in-combination with other plans or projects (i.e. it has not been possible to determine no LSE at this stage) are presented below for Marine and Coastal Processes, Benthic Subtidal and Intertidal Ecology, Fish and Shellfish Ecology, Marine Mammals and Inshore Ornithology (Table 6-1).
- 6.1.1.2 Once this report has been published and the Scoping Opinion (or any applicable comments on the HRA Screening) has been received, consultation will be undertaken to inform the preparation of the RIAA, which constitutes Stage 2 of the HRA process. During the EIA and HRA process the Project will also be further refined to allow a more focused, detailed and realistic appraisal to be completed. Relevant stakeholders will be involved in this process, and all consultees will be involved at relevant stages throughout the development of the RIAA. Once the consultation stage is completed, any comments received will be considered and used to inform the RIAA as the next stage in the process. The outcomes of the screening report will also be reviewed in light of any consultation feedback received.

Table 6-1: Summary of Sites Screened in for Further Assessment.

| Designated Site              | Relevant QI                                                                                      | Project Phase                                                                                                                                            |                                                                                                                                                                                                                                                                                 |                                                                                                                                                          |
|------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                                                  | Construction                                                                                                                                             | O&M                                                                                                                                                                                                                                                                             | Decommissioning                                                                                                                                          |
| Marine and Coastal Processes |                                                                                                  |                                                                                                                                                          |                                                                                                                                                                                                                                                                                 |                                                                                                                                                          |
| Moray Firth SAC              | Subtidal Sandbanks                                                                               | <p>Increase in SSCs and changes to seabed levels; and</p> <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions).</p> | <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions);</p> <p>Increase in SSCs and changes to seabed levels</p> <p>Seabed scouring; and</p> <p>Modifications to the wave and tidal regime, and associated impacts to morphological QIs.</p> | <p>Increase in SSCs and changes to seabed levels; and</p> <p>Potential impacts to seabed morphology (sandbanks and notable bathymetric depressions).</p> |
| Culbin Bar SAC               | Atlantic salt meadows; Coastal shingle vegetation outside the reach of waves; and Shifting Dunes | -                                                                                                                                                        | Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&M)                                                                                                                                     | -                                                                                                                                                        |

| Designated Site                                | Relevant QI                                           | Project Phase                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                     |
|------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                |                                                       | Construction                                                                                                                                                                                                                                          | O&M                                                                                                                                                                                                                                                                                                                                    | Decommissioning                                                                                                                                                                                     |
| Lower River Spey – Spey Bay SAC                | Coastal shingle vegetation outside the reach of waves | -                                                                                                                                                                                                                                                     | Modifications to the wave and tidal regime, and associated impacts to littoral transport and coastal behaviour (erosion) (permanent). (O&M)                                                                                                                                                                                            | -                                                                                                                                                                                                   |
| <i>Benthic Subtidal and Intertidal Ecology</i> |                                                       |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                     |
| Moray Firth SAC                                | Subtidal Sandbanks                                    | <p>Increase in SSC and deposition (temporary);</p> <p>Physical habitat loss/disturbance (temporary and permanent);</p> <p>Increased risk of introduction and/or spread of INNS (temporary); and</p> <p>Changes in physical processes (permanent).</p> | <p>Increase in SSC and deposition (temporary);</p> <p>Accidental pollution (temporary);</p> <p>Physical habitat loss/disturbance (temporary and permanent);</p> <p>Increased risk of introduction and/or spread of INNS (temporary);</p> <p>Colonisation of hard substrates; and</p> <p>Changes in physical processes (permanent).</p> | <p>Increase in SSC and deposition (temporary);</p> <p>Physical habitat loss/disturbance (temporary and permanent); and</p> <p>Increased risk of introduction and/or spread of INNS (temporary).</p> |

| Designated Site                   | Relevant QI                                                                                      | Project Phase                                                                                                |                                            |                                                                                                              |
|-----------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                                   |                                                                                                  | Construction                                                                                                 | O&M                                        | Decommissioning                                                                                              |
| Culbin Bar SAC                    | Atlantic salt meadows; Coastal shingle vegetation outside the reach of waves; and Shifting Dunes | -                                                                                                            | Changes in physical processes ( permanent) | -                                                                                                            |
| Lower River Spey – Spey Bay SAC   | Coastal shingle vegetation outside the reach of waves.                                           | -                                                                                                            | Changes in physical processes ( permanent) | -                                                                                                            |
| <i>Fish and Shellfish Ecology</i> |                                                                                                  |                                                                                                              |                                            |                                                                                                              |
| River Oykel SAC                   | Atlantic salmon; and freshwater pearl mussel.                                                    | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary) | -                                          | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary) |
| River Spey SAC                    | Atlantic salmon; freshwater pearl mussel; and                                                    | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary) | -                                          | Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary) |

| Designated Site    | Relevant QI                                          | Project Phase                                                                                                                                                                                                                                                                      |                                              |                                                                                                                                                                                                                                                                                    |
|--------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                                                      | Construction                                                                                                                                                                                                                                                                       | O&M                                          | Decommissioning                                                                                                                                                                                                                                                                    |
|                    | sea lamprey.                                         |                                                                                                                                                                                                                                                                                    |                                              |                                                                                                                                                                                                                                                                                    |
| River Moriston SAC | Atlantic salmon; and<br><br>freshwater pearl mussel. | <p>Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);</p> <p>Increases in SSC and deposition (temporary); and</p> <p>Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary)</p> | Increases in SSC and deposition (temporary); | <p>Mortality, injury, and behavioural impacts and auditory masking arising from noise and vibration (temporary);</p> <p>Increases in SSC and deposition (temporary); and</p> <p>Direct and indirect seabed disturbance leading to release of sediment contaminants (temporary)</p> |

| Designated Site                    | Relevant QI        | Project Phase                                                                                       |                                                                                                                                                                                                                   |                                                                                                     |
|------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|                                    |                    | Construction                                                                                        | O&M                                                                                                                                                                                                               | Decommissioning                                                                                     |
| Marine Mammals                     |                    |                                                                                                     |                                                                                                                                                                                                                   |                                                                                                     |
| Moray Firth SAC                    | Bottlenose dolphin | Underwater noise;<br><br>Vessel disturbance;<br><br>Vessel collision risk; and<br><br>Habitat loss. | Underwater noise;<br><br>Vessel disturbance;<br><br>Vessel collision risk;<br><br>Habitat loss;<br><br>Direct and Secondary Entanglement;<br><br>Barrier effect; and<br><br>Collision risk with FLOW foundations. | Underwater noise;<br><br>Vessel disturbance;<br><br>Vessel collision risk; and<br><br>Habitat loss. |
| Dornoch Firth and Morrich More SAC | Harbour seal       | Underwater noise;<br><br>Vessel disturbance; and<br><br>Vessel collision risk.                      | Underwater noise;<br><br>Vessel disturbance;<br><br>Vessel collision risk;<br><br>Direct and Secondary Entanglement;<br><br>Barrier effect; and<br><br>Collision risk with floating foundations.                  | Underwater noise;<br><br>Vessel disturbance; and<br><br>Vessel collision risk.                      |

| Designated Site                    | Relevant QI            | Project Phase                                                                              |                                                                                            |                                                                                            |
|------------------------------------|------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                    |                        | Construction                                                                               | O&M                                                                                        | Decommissioning                                                                            |
| Inshore and Intertidal Ornithology |                        |                                                                                            |                                                                                            |                                                                                            |
| Moray Firth SPA                    | Common scoter          | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); |
|                                    | Eider                  |                                                                                            |                                                                                            |                                                                                            |
|                                    | Goldeneye              | Vessel disturbance;                                                                        | Indirect impacts via effects on prey; and                                                  | Vessel disturbance; and                                                                    |
|                                    | Great northern diver   | Indirect impacts via effects on prey; and                                                  | Secondary entanglement; and                                                                | Indirect impacts via effects on prey; and                                                  |
|                                    | Long-tailed duck       | Habitat loss                                                                               | Habitat loss                                                                               | Habitat loss                                                                               |
|                                    | Red-breasted merganser |                                                                                            |                                                                                            |                                                                                            |
|                                    | Red-throated diver     |                                                                                            |                                                                                            |                                                                                            |
|                                    | Scaup;                 |                                                                                            |                                                                                            |                                                                                            |
|                                    | Slavonian grebe        |                                                                                            |                                                                                            |                                                                                            |
|                                    | Velvet scoter          |                                                                                            |                                                                                            |                                                                                            |

# Moray FLOW-Park

| Designated Site                  | Relevant QI                                                                                                                           | Project Phase                         |                                                                                               |                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------|
|                                  |                                                                                                                                       | Construction                          | O&M                                                                                           | Decommissioning                       |
|                                  | Shag                                                                                                                                  | Indirect impacts via effects on prey. | Indirect impacts via effects on prey;<br><br>Secondary entanglement; and<br><br>Habitat loss. | Indirect impacts via effects on prey. |
| Moray and Nairn Coast SPA/Ramsar | Bar-tailed godwit<br><br>Dunlin<br><br>Greylag goose<br><br>Oystercatcher<br><br>Pink-footed goose<br><br>Redshank and<br><br>Wigeon. | Vessel disturbance.                   | Vessel disturbance.                                                                           | Vessel disturbance.                   |

| Designated Site | Relevant QI            | Project Phase                                                                                                                                                          |                                                                                                                                                                                                       |                                                                                                                                                                        |
|-----------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                        | Construction                                                                                                                                                           | O&M                                                                                                                                                                                                   | Decommissioning                                                                                                                                                        |
|                 | Red-breasted merganser | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance;<br><br>Indirect impacts via effects on prey; and<br><br>Secondary entanglement. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. |
|                 | Osprey                 | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance;<br><br>Indirect impacts via effects on prey; and<br><br>Secondary entanglement. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. |

| Designated Site              | Relevant QI            | Project Phase                                                                              |                                                                                            |                                                                                            |
|------------------------------|------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                              |                        | Construction                                                                               | O&M                                                                                        | Decommissioning                                                                            |
| Inner Moray Firth SPA/Ramsar | Goosander              | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations); |
|                              | Goldeneye              |                                                                                            |                                                                                            |                                                                                            |
|                              | Red-throated merganser | Vessel disturbance; and                                                                    | Vessel disturbance;                                                                        | Vessel disturbance; and                                                                    |
|                              | Scaup                  | Indirect impacts via effects on prey.                                                      | Indirect impacts via effects on prey; and<br>Secondary entanglement.                       | Indirect impacts via effects on prey.                                                      |
|                              | Bar-tailed godwit      | Vessel disturbance.                                                                        | Vessel disturbance.                                                                        | Vessel disturbance.                                                                        |
|                              | Curlew                 |                                                                                            |                                                                                            |                                                                                            |
|                              | Greylag goose          |                                                                                            |                                                                                            |                                                                                            |
|                              | Oystercatcher          |                                                                                            |                                                                                            |                                                                                            |
|                              | Redshank               |                                                                                            |                                                                                            |                                                                                            |
|                              | Teal                   |                                                                                            |                                                                                            |                                                                                            |
|                              | Wigeon                 |                                                                                            |                                                                                            |                                                                                            |
|                              | Common tern            | Indirect impacts via effects on prey.                                                      | Indirect impacts via effects on prey.                                                      | Indirect impacts via effects on prey.                                                      |

| Designated Site           | Relevant QI                                                                                         | Project Phase                                                                                                                                                          |                                                                                                                                                                                                       |                                                                                                                                                                        |
|---------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                                                                                                     | Construction                                                                                                                                                           | O&M                                                                                                                                                                                                   | Decommissioning                                                                                                                                                        |
|                           | Cormorant                                                                                           | Indirect impacts via effects on prey.                                                                                                                                  | Indirect impacts via effects on prey; and<br>Secondary entanglement.                                                                                                                                  | Indirect impacts via effects on prey.                                                                                                                                  |
|                           | Osprey                                                                                              | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance;<br><br>Indirect impacts via effects on prey; and<br><br>Secondary entanglement. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. |
| Cromarty Firth SPA/Ramsar | Bar-tailed godwit<br><br>Curlew<br><br>Dunlin<br><br>Greylag goose<br><br>Knot<br><br>Oystercatcher | Vessel disturbance.                                                                                                                                                    | Vessel disturbance.                                                                                                                                                                                   | Vessel disturbance.                                                                                                                                                    |

| Designated Site | Relevant QI            | Project Phase                                                                                                                                                          |                                                                                                                                                                                                       |                                                                                                                                                                        |
|-----------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                        | Construction                                                                                                                                                           | O&M                                                                                                                                                                                                   | Decommissioning                                                                                                                                                        |
|                 | Pintail                |                                                                                                                                                                        |                                                                                                                                                                                                       |                                                                                                                                                                        |
|                 | Redshank               |                                                                                                                                                                        |                                                                                                                                                                                                       |                                                                                                                                                                        |
|                 | Wigeon                 |                                                                                                                                                                        |                                                                                                                                                                                                       |                                                                                                                                                                        |
|                 | Red-breasted merganser | Indirect impacts via effects on prey.                                                                                                                                  | Indirect impacts via effects on prey;                                                                                                                                                                 | Indirect impacts via effects on prey.                                                                                                                                  |
|                 | Scaup                  |                                                                                                                                                                        |                                                                                                                                                                                                       |                                                                                                                                                                        |
|                 | Common tern            | Indirect impacts via effects on prey.                                                                                                                                  | Indirect impacts via effects on prey.                                                                                                                                                                 | Indirect impacts via effects on prey.                                                                                                                                  |
|                 | Osprey                 | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance;<br><br>Indirect impacts via effects on prey; and<br><br>Secondary entanglement. | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations);<br><br>Vessel disturbance; and<br><br>Indirect impacts via effects on prey. |

# Moray FLOW-Park

| Designated Site                         | Relevant QI | Project Phase                                                                              |                                                                                            |                                                                                            |
|-----------------------------------------|-------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                         |             | Construction                                                                               | O&M                                                                                        | Decommissioning                                                                            |
| Dornoch Firth and Loch Fleet SPA/Ramsar | Scaup       | Indirect impacts via effects on prey.                                                      | Indirect impacts via effects on prey.                                                      | Indirect impacts via effects on prey.                                                      |
| East Caithness Cliffs SPA               | Razorbill   | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations). | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations). | Disturbance and displacement (auditory, visual and physical presence of FLOW foundations). |

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