MEYGEN
THE TIDE OF CHANGE IN CAITHNESS

MeyGen PLC

Habitat Regulations Appraisal – Screening Report

MeyGen Tidal Project

www.gobeconsultants.com

Revision	Date	Status	Author:	Checked by:	Approved by:
1	08/05/2026	Issued for Client Review	APEM Group, Xodus	[Redacted]	
2	28/05/2026	Issued for Client Review	APEM Group, Xodus		
3	05/06/2026	Final developer review and submission version	APEM Group, Xodus		
4	22/06/2026	Review following MD-LOT comment	MeyGen		

Contents

Figures

Tables

Glossary

Term	Definition
1994 Regulations	The Conservation (Natural Habitats &c.) Regulations 1994.
2013 Section 36 Consent	The consent granted to MeyGen Limited under Section 36 of the Electricity Act 1989 for the construction and operation of Phase 1 of the MeyGen Tidal Energy electricity generating station. Noting the 2013 Section 36 Consent was varied in 2019 to amend the Consented Array Area.
2014 Marine Licence	The Marine Licence granted to MeyGen Limited under the Marine (Scotland) Act 2010 for the MeyGen generating station and associated works in 2014. Noting the 2014 Marine Licence was varied in 2015, 2016, 2017 and 2022.
2017 Regulations	Conservation of Habitats and Species Regulations 2017.
2019 Regulations	Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.
Birds Directive	Directive 2009/147/EC on the Conservation of Wild Birds.
Competent Authority	The appropriate authority in making planning decisions, in the case of the Proposed Variation this is the Scottish Ministers.
Consent Area	Used to refer collectively to the Consented Array Area and Consented Cable Corridor.
Consented Array Area	The previously consented area within which the tidal turbines generators and associated offshore infrastructure may be located under the 2013 Section 36 Consent, as varied in 2019.
Consented Cable Corridor	The area within which export cables associated with the Consented Project may be located under the 2013 Section 36 Consent, as varied in 2019, extending from the Consented Array Area to landfall.
Consented Project	The MeyGen tidal energy project as consented under the 2013 Section 36 Consent (as varied in 2019), comprising up to 61 tidal turbine generators and associated infrastructure, to be implemented in a staged manner, and referred to as the "Development" in the consent.
Developer	MeyGen PLC (Company No. SC347501), **previously MeyGen Limited, the entity to which the 2013 Section 36 Consent was granted and the developer of the MeyGen tidal project.**
Development	Means the MeyGen Tidal Energy electricity generating station Phase 1 within the Inner Sound in the Pentland First, as defined in the 2013 Section 36 Consent.

Term	Definition
EIA Scoping Opinion	A formal written opinion issued by the Competent Authority in response to a scoping request from the Developer. It identifies the environmental topics, receptors, and assessment methodologies that must be addressed in the Environmental Impact Assessment.
Habitats Regulations	In this case, a collective term for the Conservation (Natural Habitats &c.) Regulations 1994, and the Conservation of Habitats and Species Regulations 2017.
Habitats Regulations Appraisal (HRA)	A process 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 nine stages of assessment.
HRA Screening Report	A document prepared by the Developer providing the information necessary for the Competent Authority to determine whether the project is likely to have significant effects on designated sites. It typically includes impact pathways, site sensitivity, and screening conclusions.
Phase 1	Refers to the consented Development under the 2013 Section 36 Consent, comprising up to 86 megawatts and a maximum of 61 tidal turbines.
Phase 1a	A term used to refer to the four tidal turbine generators installed and currently operational at the MeyGen site. These turbines form part of Stage One of the Consented Project under the 2013 Section 36 Consent.
Phase 1b	Refers to a further four tidal turbines, in addition to the four for Phase 1a, for which approval was granted in 2017 under Condition 2(b) of the 2013 Section 36 Consent.
Project	The MeyGen Tidal Project within the Inner Sound in the Pentland Firth.
Proposed Array Area	The area within which the tidal turbine generators and associated offshore infrastructure are proposed to be located as part of the Proposed Variation.
Proposed Cable Corridor	The area within which export cables connect the Proposed Array Area to landfall are proposed to be located as part of the Proposed Variation.
Proposed Project Area	The area combining the Proposed Array Area and Proposed Cable Corridor.
Proposed Variation	The proposed change to the 2013 Section 36 Consent (as varied in 2019), including amendments to the parameters of the consented development and the introduction of a revised turbine layout and configuration.

Term	Definition
Scottish Ministers	Ministers of the devolved Scottish Government, who exercise statutory functions transferred from the UK Government. The Scottish Ministers support the First Minister in leading the Scottish Government.
Scottish Territorial Waters	Scottish marine area from Mean High Water Springs to 12 nautical miles.
Section 36 Consent	Consent under Section 36 of the Electricity Act 1989 for the construction, or extension, and operation of electricity generating stations.
Stage One	Construction and operation of up to the first six turbine generators and inter array and export cabling as defined in the 2013 Section 36 Consent.
Subsequent Stage	Construction and operation of turbine generators and inter array and export cabling within the EIA boundary area as showing in the Figure in Annex 3 of the 2013 Section 36 Consent and in respect of which this consent relates but not forming part of Stage One of the Development, as defined in the 2013 Section 36 Consent.

Acronyms

Acronym	Definition
AA	Appropriate Assessment
AEoSI	Adverse Effect on Site Integrity
AfL	Agreement for Lease
CES	Central East Scotland
DE	Germany
EIA	Environmental Impact Assessment
EMF	Electromagnetic Fields
ES	Environmental Statement
ES (2012)	MeyGen Tidal Project Phase 1 Environmental Statement (2012)
EU	European Union
FR	France
HRA	Habitats Regulation Appraisal
IAMMWG	Inter-Agency Marine Mammal Working Group
IE	Republic of Ireland
INNS	Invasive Non-native Species

Acronym	Definition
IROPI	Imperative Reasons of Overriding Public Interest
JNCC	Joint Nature Conservation Committee
LSE	Likely Significant Effect
MHWS	Mean High Water Springs
MMFR	Mean-Max Foraging Range
MPA	Marine Protected Area
MU	Management Unit
NPF4	National Planning Framework 4
O and M	Operations and Maintenance
PDE	Project Design Envelope
PFOW	Pentland Firth and Orkney Waters
QI	Qualifying Interest
RIAA	Report to Inform Appropriate Assessment
SAC	Special Area of Conservation
SCOS	Special Committee on Seals
SMA	Seal Management Area
SD	Standard Deviation
SPA	Special Protection Area
SSC	Suspended Sediment Concentration
TCE	The Crown Estate
TTG	Tidal Turbine Generators
UK	United Kingdom
ZoI	Zone of Influence

Units

Acronym	Definition
km	Kilometre
km^2	Kilometres squared (measure of area)
m	Metres
m^2	Metres squared (measure of area)
MW	MegaWatt

Acronym	Definition
km	Kilometre
km^2	Kilometres squared (measure of area)
m	Metres
m^2	Metres squared (measure of area)
NM	Nautical mile

1 Introduction

1.1 Proposed Variation Background

1.1.1 In 2010, the Crown Estate (TCE) launched the first competitive seabed leasing round for wave and tidal projects in the United Kingdom (UK), the Pentland Firth and Orkney Waters (PFOW) Round 1. Development sites were identified and options for lease were granted by TCE to developers for wave and tidal energy projects. On 21 October 2010, an Agreement for Lease (AfL) for the Inner Sound tidal development side was awarded to MeyGen Ltd (now MeyGen PLC) (the Developer) (Figure 1-1).

1.1.2 Following the award of the AfL, in 2012 the Developer proceeded to submit consent applications for Phase 1 of the Project. The application sought consent for the construction and operation of up to 61 tidal turbine generators and associated infrastructure within the Inner Sound. As part of the consent and marine licence applications an Environmental Impact Assessment (EIA) was undertaken, including completion of an Environmental Statement for Phase 1 of the Meygen Tidal Project (ES 2012). Additionally, assessments were undertaken to support the Habitat Regulations Appraisal (HRA) subsequently carried out by the Competent Authority.

1.1.3 In 2013, under Section 36 of the Electricity Act 1989, the Scottish Ministers granted consent for Phase 1 of the Project (Consented Project) with a maximum capacity of 86 megawatts (MW), up to 61 tidal turbines and associated infrastructure (2013 Section 36 Consent). The consent required that the Consented Project would be built out in phases, and the initial Stage One enabled six turbines to be installed. Subsequently, four of the six turbines were installed and became operational in 2018 (Phase 1a). In 2014, a Marine Licence, under the Marine (Scotland) Act 2010, was also granted for the Consented Project (2014 Marine Licence) and subsequently varied in 2015, 2016, 2017 and 2022.

1.1.4 In 2022, 2023 and 2024, the Developer was awarded a Contract for Difference in Allocation Rounds 4, 5 and 6, which provides revenue support of a total of 60 megawatts (MW) for the Subsequent Stage of the Consented Project to be developed. However, given the advancements in turbine technology over time, the Developer now seeks to vary the 2013 Section 36 Consent and 2014 Marine Licence in order to install the most efficient turbine technology, optimise the use of the available resource, and reduce the end cost of the energy produced (Proposed Variation).

1.1.5 The key proposed changes to the Consented Project for the Proposed Variation are:

- A change in the array area in which the tidal turbines are installed, including a reduction in the area consented;
- A change in the cable corridor area in which the cables are installed;
- A reduction from 61 to 34 tidal turbines;
- An increase in rotor diameter from 16-20 metres (m) to 16-26 m;
    - Associated increase in rotor swept area from 201-314 metres squared (m^2) per turbine to 201-531 m^2;

- Associated reduction in the minimum clearance of the turbine rotors to seabed from 4.5 m to 2 m;
- Associated reduction in the minimum clearance of the turbine rotors to sea surface at Lowest Astronomical Tide from 8 m to 6 m;

- An increase in voltage for new cables (four already installed as part of Phase 1a) from up to 6.6 kV to up to 12 kV; and
- A removal on the cap on individual turbine rated power.

1.1.6 In addition to improving project economics, these technological advancements are expected to reduce aggregate environmental effects at the array level, as well as impacts on shipping and navigation. It should be noted that the Proposed Variation involves changes to the offshore elements of the Consented Project only with no changes to the Consented Project above Mean High Water Springs (MHWS). No variations to existing onshore consents are sought.

1.1.7 In support of the Proposed Variation application, this HRA Screening Report has been produced to support the Competent Authority in the undertaking of an HRA. An EIA Scoping Report will also be produced and submitted to the Competent Authority.

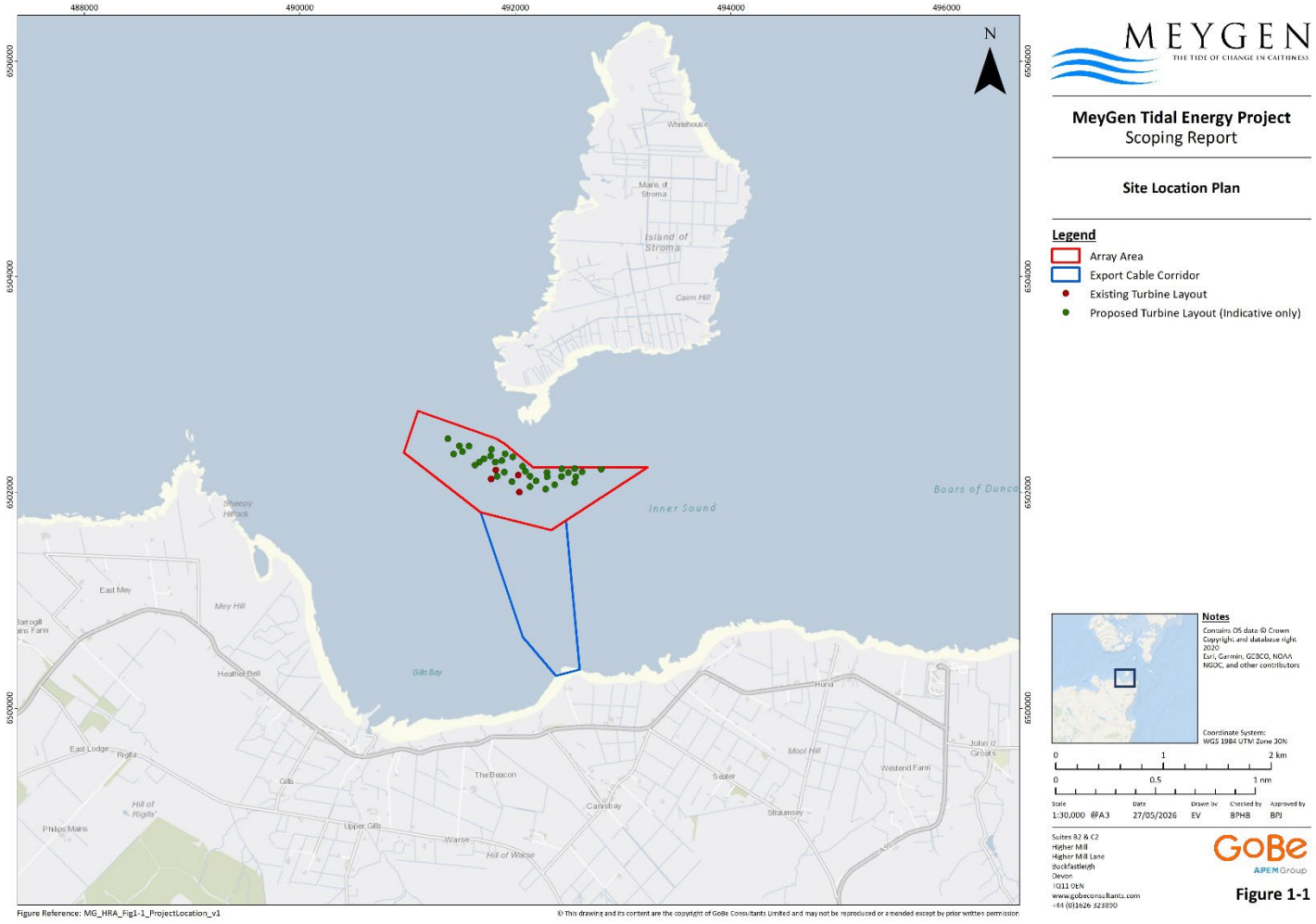

Figure 1-1: Location of the Proposed Variation

1.2 The Developer

1.2.1 MeyGen PLC is the Developer and operator of the Project located in the Inner Sound of the Pentland Firth, Caithness, Scotland. The Developer was incorporated in 2008 for the purpose of developing commercial-scale tidal stream energy generation within the Pentland Firth, one of the highest energy tidal environments in the world.

1.2.2 The 2013 Section 36 Consent for Phase 1 of the Project was granted to MeyGen Limited under Section 36 of the Electricity Act 1989. MeyGen Limited subsequently changed its name to MeyGen PLC in 2019.

1.2.3 MeyGen PLC has led the development, construction and operation of the Project since its inception and granting of consent in 2013, including the deployment and operation of four Tidal Turbine Generators (TTGs) within the Inner Sound. Through delivery of the Project, MeyGen PLC has gained operational, engineering and environmental experience relevant to the commercial deployment of tidal stream energy technology in Scotland.

1.3 Purpose of the Report

1.3.1 The Proposed Variation seeks to alter key design parameters of the Consented Project as described within Section 3. The changing parameters may result in different environmental effects on designated sites and features compared to the previous HRA undertaken (MeyGen Ltd, 2011a and b), and therefore an updated HRA is required. A detailed description of the HRA process is provided within Section 2.

1.3.2 The purpose of this HRA Screening Report is to inform the HRA process for the Proposed Variation, in accordance with the Conservation (Natural Habitats, &c.) Regulations 1994 (1994 Regulations) and relevant provisions of the Conservation of Habitats and Species Regulations 2017 (2017 Regulations) (HM Government, 2017). The aim of the screening exercise is to test whether no likely significant effect (LSE) on European sites (both within and without the UK National Site Network) and Ramsar sites of nature conservation importance (as designated under the Ramsar Convention), either alone or in-combination with other plans or projects, can be demonstrated. This step in the process and associated reporting requirements is further described in Section 2.

1.3.3 The assessment provided in this HRA Screening Report is based on the current proposed scope and nature of the Proposed Variation. Baseline characterisation has been completed through the review of information associated with the Proposed Variation and the Consented Project, desk-based information from other relevant projects, and site-specific/other regional information currently available. It should be noted that the four existing consented and installed tidal turbines are treated as part of the environmental baseline.

1.3.4 As the design parameters, including the final boundaries, sizes and foundation types, of the Proposed Variation are refined, and as additional site-specific surveys are completed and analysed, ongoing consultation will take place with respect to the assessment of the potential for LSE on European/Ramsar sites. This will inform any future Report to Inform Appropriate Assessment (RIAA).

1.3.5 It is anticipated that a review of the EIA Scoping Opinion, as well as the project level engagement with stakeholders, will also aid with identifying further requirements of the RIAA (although noting these processes sit outside of, and are separate to, the requirements under the 1994 Regulations and the 2017 Regulations for the Proposed Variation).

1.3.6 It should be noted that this document has been jointly drafted by GoBe Consultants Ltd and Xodus Group Ltd. Xodus Group Ltd are responsible for the marine mammal and ornithology receptor assessments, with GoBe Consultants Ltd responsible for the remainder of the document.

1.4 Structure of the Report

1.4.1 This HRA Screening Report is structured as follows:

- Section 1: Introduction
- Section 2: Legislative Guidance and Methodology
- Section 3: Proposed Variation Description
- Section 4: Identification of Potential Effects
- Section 5: European Site Selection
- Section 6: Screening Undertaken for the Proposed Variation
- Section 7: Conclusion of HRA Screening
- Section 8: References.

2 Legislative Guidance and Methodology

2.1 Legislative Context and Habitats Regulations

2.1.1 A network of protected areas for specific habitats and species of importance (known as European sites) was established by European Union (EU) member states under the Habitats Directive (European Commission, 1992) and the Wild Birds Directives (European Commission, 2009) and the RAMSAR Convention on Wetlands of International Importance (Ramsar Convention). The sites designated under these Directives are collectively termed European sites and form part of a network of protected sites across Europe, originally known as the Natura 2000 network.

2.1.2 Within Scotland, this is transposed into legislation through the 1994 Regulations and the 2017 Regulations (Habitats Regulations), and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (2019 Regulations) (HM Government, 2019). These Regulations defined a National Site Network within the UK consisting of European Sites within UK waters. The terms "European site", "European marine site" and "European offshore marine site" have been retained under the Habitats Regulations.

2.1.3 It should be noted that following the implementation of the 2019 Regulations, 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 Effects on Site Integrity (AEoSI). This now all falls under the remit of the Scottish Ministers (for sites in Scotland), with NatureScot acting as the primary statutory nature conservation adviser for Scottish inshore waters and terrestrial sites. The Joint Nature Conservation Committee (JNCC) may also provide advice where relevant to offshore waters, offshore marine sites, or reserved matters.

2.1.4 Following the 2019 Regulations, amendments were made to the Habitats Regulations and summarised within 'EU Exit: Habitats Regulations in Scotland' (Scottish Government, 2020). The amendments are as follows:

- Management objectives were established for the National Site Network. Ministers must work in co-operation with the other UK devolved 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; 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;

2.1.5 European marine sites and European offshore marine sites continue to contribute to the UK's Marine Protected Area (MPA) network. The network also includes Nature Conservation MPAs, Sites of Special Scientific Interest and Ramsar sites. The general provisions for the protection of European sites under the Habitats Regulations are unchanged, including the procedural requirements to be undertaken by competent authorities to assess the implications of plans or projects for European sites and only grant consent if certain tests are met. The step-wise process of determining the absence of adverse effects on the integrity of European sites under the Habitats Directives/Regulations is known as an HRA.

2.1.6 The relevant statutory provisions of the Habitats Regulations that apply to onshore sites and sites out to 12 nautical miles (NM) are:

- Regulation 48 of the 1994 Regulations; and
- Regulation 63 of the 2017 Regulations.

2.1.7 As the Proposed Variation only considers offshore components within 12 NM of the shoreline, both the 1994 and 2017 Regulations apply. Regulation 48 of the 1994 Regulations and Regulation 63 of the 2017 Regulations sets out the requirements for undertaking an HRA.

- Regulation 48 (1) of the 1994 Regulations states that:

  '(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which–

  -(a)is likely to have a significant effect on a European site in Great Britain [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 the site,

  shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives.'

- Regulation 63 (1) of the 2017 Regulations states that:

  '(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation 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.'

2.1.8 Therefore, as the Proposed Variation is not directly connected with or necessary to the management of a European site, an HRA is required.

2.1.9 In addition to European sites within the National Site Network, consideration is also given transboundary effects on European Sites within European Waters.

2.2 European Sites and Ramsar Sites

2.2.1 European sites include the following:

- Special Areas of Conservation (SACs) designated for their habitats and/or species (except birds) of European importance plus candidate SACs and Sites of Community Importance;
- Special Protection Areas (SPAs) designated for rare, vulnerable, and regularly occurring migratory bird species and internationally important wetlands; and
- Ramsar sites designated under the Convention on Wetlands of International Importance.

2.2.2 European sites include those designated under the Habitats Regulations and those which were previously designated under the Habitats Directive.

2.2.3 Listed or proposed Ramsar sites (together, Ramsar sites) are subject to HRA assessment in accordance with government policy (National Planning Framework 4 (NFP4) - Policy 4) (Scottish Government, 2023) and Scottish government guidance on protecting Ramsar sites (Scottish Government, 2025b)

2.2.4 NPF4 was adopted in February 2023 and forms part of a statutory development plan. It sets out spatial principles, regional priorities, national developments and national planning policy, integrating the updated Scottish Planning Policy into a single document. Replacing National Planning Framework 3, NPF4 is designed as a long-term spatial development strategy extending to 2045. It places strong emphasis on climate mitigation and adaptation, biodiversity enhancement and sustainable development, including support for renewable energy development where it contributes to net zero objectives (Scottish Government, 2023a). The Pentland Firth and North Caithness area is identified as an area of coordinated action and is recognised as having significant opportunities for marine renewable energy development, generating business and employment opportunities for surrounding coastal and island communities.

2.2.5 Of particular note within NPF4 is Policy 4, where it sets out the requirements for development proposals that have a potential effect on European sites:

'b) Development proposals that are likely to have a significant effect on an existing or proposed European site (Special Area of Conservation or Special Protection Areas) and are not directly connected with or necessary to their conservation management are required to be subject to an "appropriate assessment" of the implications for the conservation objectives.'

2.2.6 This HRA Screening Report supports the undertaking of the required appropriate assessment by identifying relevant impact pathways on designated features of protected sites. Designated features, hereafter referred to as Qualifying Interests (QIs) are the specific habitats or species for which European and Ramsar sites are protected, and comprise:

- Annex I habitats and Annex II species listed under the Habitats Directive, including terrestrial and marine species;
- Bird species protected under the Wild Birds Directive, including breeding and wintering populations; and
- Habitats and species that meet the Ramsar criteria for international importance.

2.2.7 Each European site has formal conservation objectives, which set out the conditions that must be maintained or restored to ensure that its designated features remain in favourable condition. Assessment under the Habitats Regulations considers all QIs, including those that are mobile or functionally linked outside the European site, to ensure that conservation objectives are not undermined.

2.2.8 Mobile species that are QIs of European and Ramsar sites may use habitats beyond the formal boundary of the designated site. For example, wintering waterbirds may forage or roost on agricultural land outside of the designated site. Although that agricultural land is not part of the European or Ramsar site, it is considered 'functionally linked' because it serves a function for waterfowl that are qualifying features of the designated site.

2.2.9 Account has to be taken of such Functionally Linked Land in the HRA process, as the loss or alteration of these areas could potentially adversely affect the survival of qualifying species and reduce their populations within the designated site.

2.3 Guidance

2.3.1 Key guidance documents that have been used to inform this HRA Screening Report include:

- SNH (2000). Natura Casework Guidance: Consideration of Proposals affecting SPA and SAC. Guidance Note Series;
- European Commission. (2001). Assessment of plans and projects in relation to Natura 2000 sites - Methodological Guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2001);
- 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;
- Marine Scotland Consenting and Licensing Guidance for Offshore Wind, Wave and Tidal Energy (2018)
- DTA (2021a). The Habitat Regulations Assessment Handbook (Tyldesley, 2013 (January 2021 Edition)).
- 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;
- NatureScot (2022). European Site Casework Guidance: How to consider plans and projects affecting SPA and SAC.
- NatureScot guidance on Habitat Regulations Appraisal (NatureScot, 2025)
- NatureScot guidance on handling of mitigation following People Over Wind judgement (NatureScot, 2025a)
- SNH Guidance Note (undated). The handling of mitigation in Habitats Regulations Appraisal the People Over Wind Court of Justice of the European Union judgement.

- Marine licensing and consenting: offshore renewable energy projects (Scottish Government 2025a).

2.4 HRA Process and Assessment Methodology

2.4.1 As described above, the HRA process is considered to be a step-wise process as described within the relevant guidance. It is a requirement of any public body, referred to as a 'Competent Authority' within the Habitats Regulations, to carry out an HRA when they are proposing to carry out a project, implement a plan or authorise another party to carry out a plan or project. Competent authorities are required to record the process undertaken, ensuring that LSE are assessed and that there will be no adverse effects on the integrity of any European or Ramsar site as a result of a plan or project whether alone or in combination with other plans or projects, unless IROPI can be demonstrated.

2.4.2 The NatureScot HRA guidance (NatureScot, 2026) considers that there are 9 stages within the HRA process. These stages are:

- Stage 1: What is the plan or project?
- Stage 2: Is the plan or project directly connected with or necessary to site management for nature conservation?
- Stage 3: Is the plan or project (either alone or in combination with other plans or projects) likely to have a significant effect on a European site?
- Stage 4: Undertake an appropriate assessment of the implications for the site in view of its conservation objectives.
- Stage 5: Can it be ascertained that the proposal will not adversely affect the integrity of the site?
- Stage 6: Are there alternative solutions?
- Stage 7: Would a priority habitat or species be adversely affected?
- Stages 8 and 9: Are there IROPI?

2.4.3 In order to provide all the relevant information for each stage to the Competent Authority in an appropriate and proportionate manner, the HRA for the Proposed Variation will be presented within three parts:

- HRA Screening Report.
- RIAA.
- Derogation Case (if required).

2.4.4 Each of the 9 stages defined by NatureScot (NatureScot, 2026) have been incorporated into the three parts above as defined within Table 2-1.

Table 2-1: HRA process followed for the Proposed Variation

Part	Description	NatureScot Stages included	Legislative Context
HRA Screening	The identification of any European or Ramsar site that might be within scope of an HRA i.e, those sites that should be taken forward to the screening stage (referred to as Scoping). Assessment of whether a plan or project, either alone or in combination with other plans or projects, is likely to have a LSE on any qualifying feature (habitats and species) of a European or Ramsar site. This is also known as the 'test of LSE'. At this stage consent may be granted for the plan or project if it can be excluded, on the basis of objective information, that the proposal will not result in a LSE for any European or Ramsar site, either alone or in combination with other plans or projects. No mitigation measures can be considered at this stage, except those that are integral to a project or plan. Deliverable/output: HRA Screening Report (for LSE) i.e. this report.	Stage 1: What is the plan or project? Stage 2: Is the plan or project directly connected with or necessary for site management for nature conservation? Stage 3: Is the plan or project (either alone or in combination with other plans or projects) likely to have a significant effect on a European site?	Regulation 48 (1) (a) of the 1994 Regulations; and Regulation 63 (1) (a) of the 2017 Regulations.
RIAA	Consideration of the effects of the proposals to determine whether or not it is possible to conclude that no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of European or Ramsar site, either alone or in combination with other plans or projects and with reference to the conservation objectives of the European or Ramsar site. This is also known as the test of AEoSI. At this stage consent may be granted for the plan or project if it is possible to conclude that no reasonable scientific doubt remains as to absence of adverse effect on the integrity of any European or Ramsar site, either alone or in combination with other plans or projects and with consideration of mitigation measures. Deliverable / output: RIAA.	Stage 4: Undertake an appropriate assessment of the implications for the site in view of its conservation objectives. Stage 5: Can it be ascertained that the proposal will not adversely affect the integrity of the site?	Regulation 48 (5) and 48 (6) of the 1994 Regulations; and Regulation 63 (5) and 63(6) of the 2017 Regulations.

Part	Description	NatureScot Stages included	Legislative Context
If it cannot be concluded that no reasonable scientific doubt remains as to the absence of adverse effect on the integrity of any European or Ramsar site, then three legal tests must be met, and each must be passed for a derogation to be granted. The three tests are: assessment of alternative solutions, consideration of IROPI and compensatory measures.			
Derogation	Assessment of alternative solutions: Assess whether there is an alternative solution to the plan or project i.e. one that better respects would avoid or reduce impacts on the European or Ramsar sites. If no such alternative solution exists, the process continues to consideration of IROPI. Consideration of IROPI: Where no feasible alternative solutions exist, a project may still be permitted if the Competent Authority is satisfied that it must proceed for IROPI. The case for IROPI should explain the reasons for it being: ▪ imperative – essential that it proceeds for public interest reasons in the public interest – that it has benefits for the public, not just benefits for private interests ▪ overriding – that the public interest outweighs the harm, or risk of harm, to the integrity of the European site as predicted by the Appropriate Assessment Compensatory measures: If there are no feasible alternative solutions and it has been shown that there are IROPI, the competent authority must ensure that any compensatory measures are taken to protect the overall coherence of the 'National Site Network'. The compensatory measures relied upon should be described, including as much detail as possible on the legal, financial and technical arrangements, as well as any proposed monitoring. Identify and secure any necessary compensatory measures to ensure that the overall coherence of the 'National Site Network' is protected.	Stage 6: Are there alternative solutions? Stage 7: Would a priority habitat or species be adversely affected? Stages 8 and 9: Are there IROPI?	Regulation 49 (1) and Regulation 53 of the 1994 Regulations Regulation 64 (1) and Regulation 68 of the 2017 Regulations

2.4.5 Each part (except the last) defines the requirement for and scope of the next. This HRA Screening Report comprises Stages 1-3, where the identification of LSE is reported.

2.4.6 The Habitats Regulations specify, amongst other issues, how development control decisions which could directly or indirectly affect European sites are to be reached. This is included within Regulation 48 of the 1994 Regulations and Regulation 63 of the 2017 Regulations (as detailed in paragraph 2.1.7).

2.4.7 It is therefore necessary, in the first instance, to determine whether LSE on the site can be excluded. Only where it is not possible to conclude this, does an Appropriate Assessment (AA) need to be carried out by the Competent Authority.

2.4.8 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 have a likely 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. The HRA Screening process uses the threshold of LSE to determine if effects on European sites should proceed to AA.

2.4.9 The European Court of Justice ruling in the case of Waddenzee (C-127/02, 2004), 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".

2.4.10 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. This is further clarified by the Sweetman case (European Court of Justice, C-258/11, 2013) stating that for a conclusion of an LSE to be made:

"there is no need to establish such an effect… it is merely necessary to determine that there may be such an effect".

2.4.11 The test is therefore precautionary and the word 'likely' in Regulation 63 is regarded as a possibility of an effect rather than a probability of an effect.

2.4.12 This approach is confirmed within NatureScot guidance (updated 2024), which states that a plan or project should *'consider any connectivity (direct and indirect pathways) between the proposal and each of the qualifying interests*' of the European site. If there is no connection, or if it is obvious that the proposal will not undermine the conservation objectives despite a connection, then the conclusion of no LSE can be made. If there is any doubt as to whether there is an LSE, and the potential for an effect exists, then LSE should be concluded and considered within the AA stage. 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'.

2.4.13 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 in part 2 (Table 2-1), where the implications for European site integrity are considered. Importantly, any mitigation specifically related to avoiding effects on European sites is not considered at the screening stage but taken forward and considered within the AA. This approach takes into consideration the decision of the Court of Justice of the European Union in 'People Over Wind and Sweetman v Coillte Teoranta' [2018] (European Court of Justice C-323/17, 2018) (the 'Sweetman ruling');

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site."

2.4.14 This HRA Screening Report uses a strong precautionary approach when determining the potential for LSE, where if a pathway of effect is established between the Proposed Variation and a European site, then that effect is considered for LSE. Only where there is no appreciable or inconsequential effect from potential effects is it considered there is no potential for LSE alone or in-combination at HRA Screening Stage.

Consideration of in-combination plans and projects

2.4.15 The Habitat Regulations, taken with Government policy, require the consideration of the potential effects of a project on European and Ramsar sites both alone and in-combination with other plans or projects. As highlighted in paragraph 2.4.14, it is assumed that if the potential for LSE is confirmed alone on the basis of the strong precautionary definition of LSE, then it is also considered that there is the potential for LSE in-combination and the site will be screened through for consideration at the AA stage.

2.4.16 It is noted that where there is no LSE identified for the Proposed Variation alone but a pathway for effect remains, there may be impacts in-combination with other plans and projects, the effect would be considered at the AA stage on an in-combination basis only. Unless it can be objectively concluded that there is 'no appreciable' or 'inconsequential effect' from the Proposed Variation alone, sites where no LSE was concluded will also be screened for in-combination effects.

Consideration of migratory fish and marine shellfish ecology

2.4.17 With regard to migratory fish and marine shellfish ecology, in line with NatureScot representations on other offshore projects, marine fish and shellfish have not been considered in a HRA context.

2.4.18 This is ultimately driven by the limited knowledge of distribution and behaviour of these species in the marine environment. This includes a lack of data on both migratory/at-sea movements and population connectivity to specific designated sites.

2.4.19 Therefore, as an appropriate and informed assessment for individual site integrity cannot be undertaken, it is considered that fish species will be considered through the EIA process and will not be considered further within the HRA process.

3 Proposed Variation Description

3.1 Overview

3.1.1 The Proposed Variation is located within the Pentland Firth and Orkney Waters and lies between the Scottish mainland at Kirkstyle and the Isle of Stroma (see Figure 1-1). The Proposed Array Area for the Proposed Variation is approximately 0.965 kilometers (km) squared (km^2), reduced from an area of 1.149 km^2 when compared to the Consented Project. The site is 0.53 km from the Isle of Stroma at the closest point, and 1.36 km from the Scottish mainland at its closest point. A maximum of 34 TTGs are proposed to be located within the Proposed Array Area. Of the 34 TTGs, four TTGs are already operational as of 2018 (Phase 1a).

3.1.2 The Project Design Envelope (PDE) for the Proposed Variation is provided in **Chapter 4: Proposed Variation Description** of the EIA Scoping Report, with specific reference to the offshore infrastructure proposed within the Proposed Array Area and Proposed Cable Corridor and how this compares to the Consented Project.

3.2 Key Parameters to be Assessed

3.2.1 The Proposed Variation will vary several parameters of the Consented Project. With respect to HRA Screening, the maximum design scenario will focus on parameters that may have direct or indirect effects on relevant HRA receptor groups.

3.2.2 The key parameters that are to be varied as part of the Proposed Variation are presented below and considered relevant to all HRA receptors.

Table 3-1: Key varied parameters

Parameter	Consented Project Parameter	Proposed Variation Parameter	Direct or Indirect Change?
Installed capacity	86 MW	100 MW	Indirect
Number of installed turbines (incl. Phase 1a)	61	34	Direct
Rotor diameter	16 – 20 m	16 – 26 m	Direct
Rotor swept area	201 – 314 m^2	201 – 531 m^2	Direct
Rated power per turbine	1.0 – 2.4 MW	Remove restriction on rated power per turbine	Indirect
Minimum clearance from blade tip to seabed	4.5 m	2.0 m	Direct
Minimum clearance from blade tip to LAT	8.0 m	6.0 m	Direct
Voltage of export cables	Export cables rated a maximum of 6.6 kV	Export cables rated at a maximum of 12.0 kV	Direct

4 Identification of Potential Effects

4.1 Overview

4.1.1 HRA Screening is described as a 'coarse screening exercise' to primarily identify the sites and QIs which require further assessment in the AA, as well as the 'types' of impacts to be considered. The process requires that a precautionary approach be taken, with the level of precaution based on factors such as project uncertainties, European site proximity and site/feature condition.

4.2 Approach

4.2.1 Given the nature and scale of the Proposed Variation, HRA Screening was started by an initial site selection process, to identify which sites and features require consideration within the screening process. This was achieved through a receptor-based approach with a source-pathway-receptor methodology, where a receptor can only be affected if a pathway exists through which an impact can be transmitted between the source activity and the receptor. The source-pathway-receptor approach used the following definitions:

- '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.
- 'Receptor' is defined as the QIs of Ramsars, SPAs or SACs for which conservation objectives have been set.

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

4.2.3 In order to determine the source and pathway, specific impacts were identified. This concluded which sites and QIs have the potential to be affected by the considered impacts.

4.2.4 The following section outlines those sources and potential impact pathways for effect to each receptor group. The groups are as follows:

- Marine and coastal processes – This considers physical processes impacts to the benthic, subtidal and intertidal features designated under Annex I and II of the Habitat Regulations;
- Benthic ecology – This receptor group includes benthic, subtidal and intertidal, features below MHWS, and habitats designated under Annex I and II of the Habitats Regulations;
- Marine mammals – This receptor group includes marine mammal species designated under Annex II of the Habitat Regulations;
- Ornithology – This receptor group includes Annex II bird species located in the offshore environment (subtidal);

4.2.5 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, operation and maintenance (O and M) and decommissioning of the Proposed Variation (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 feature(s) in (Section 6).

4.3 Identification of Potential Effects

Marine and Coastal Processes

4.3.1 The potential impact pathways identified for marine and coastal processes receptors are identified in Table 4-1 below.

Table 4-1: Potential impact pathways regarding marine and coastal processes

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			Zone of Influence (ZoI) for this impact
		Construction	O and M	Decommissioning	
Change in seabed morphology from drill discharge.	Impact on habitats from drilling work during installation (direct).	▪ Seabed preparation; ▪ Seabed dredging and sandwave clearance; and ▪ Foundation installation.	▪ Any drilling required for maintenance activities.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km – based on modelling results.
Displacement of sediment resulting in alteration or loss of bedform and geomorphology.	Alteration of habitats.	▪ Seabed preparation; ▪ Seabed dredging and sandwave clearance; and ▪ Foundation installation.	▪ Any drilling required for maintenance activities.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km – based on modelling results.
Erosion of coastline.	Alteration of hydrodynamic regime impacting the coastline and habitats (indirect).	▪ N/A	▪ Presence of turbines.	▪ N/A	10 km – based on modelling results.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			Zone of Influence (ZoI) for this impact
		Construction	O and M	Decommissioning	
Deterioration of water quality due to the suspension of sediments.	Sediment disturbance and dispersal through the water column to reach the site/ feature.	▪ Seabed preparation; ▪ Seabed dredging and sandwave clearance; ▪ Sediment disposal; and ▪ Installation of scour and cable protection.	▪ Cable repairs or replacement if required.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km – based on modelling results.
Release of sediment bound contaminants.	Sediment disturbance and dispersal through the water column to reach the site/ feature.	▪ Seabed preparation; ▪ Seabed dredging and sandwave clearance; ▪ Sediment disposal; and ▪ Installation of scour and cable protection.	▪ Cable repairs or replacement if required.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km – based on modelling results.
Accidental spill or release of materials or chemicals .	Pollution dispersing through the water column to reach the site/ feature (direct).	▪ Accidental release or spill of materials or chemicals; and ▪ Release of contaminants	▪ Accidental release or spill of materials or chemicals from vessel movements on	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km – based on modelling results.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			Zone of Influence (ZoI) for this impact
		Construction	O and M	Decommissioning	
		from suspended sediment (via all activities listed for Suspended Sediment Concentration (SSC)/ deposition above).	and off site and other maintenance activities.		
Change in hydrodynamics.	Hydrodynamic regime altering habitats (direct).	▪ N/A	▪ Presence of structures.	▪ N/A	10 km – based on modelling results.
Change in wave height.	Impacts on mobile species.	▪ N/A	▪ Presence of structures.	▪ N/A	10 km – based on modelling results.
Change in sediment dynamics.	Changes in habitat availability (direct).	▪ N/A	▪ Presence of structures.	▪ N/A	10 km – based on modelling results.

4.3.2 The potential impact pathways identified for benthic ecology receptors are identified in Table 4-2 below.

Table 4-2: Potential impact pathways regarding benthic ecology

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
Direct physical impact and loss of habitat.	Direct physical interaction between the site/feature and the Proposed Development.	▪ N/A	▪ Cable repairs or replacement if required; ▪ Physical presence of subsea cables, cable protection, scour protection, and other permanent structures.	▪ N/A	0 km – the boundary for the Proposed Variation.
Temporary habitat disturbance.	Direct physical interaction between the site/feature and the Proposed Development.	▪ Physical presence of structures and equipment; seabed preparation; ▪ Seabed dredging; sandwave clearance;	▪ Cable repairs or replacement if required; ▪ Physical presence of subsea cables, cable protection and scour protection,	▪ Scope of works currently unknown, however, anticipated to be similar to and no greater than those during construction.	0 km – the boundary for the Proposed Variation.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
		▪ Sediment disposal; and ▪ Installation of scour or cable protection.	and other permanent structures.		
Electro-magnetic effects (EMF).	Cables may generate EMF that can propagate through the surrounding sediments and water column (indirect).	▪ N/A	▪ Presence of turbines.	▪ N/A	0 km – the boundary for the Proposed Variation.
Marine Invasive Non-Native Species (INNS).	Presence of the works/ structures and vessels allowing non-native species to travel between sites and features (indirect).	▪ Vessel movements on and off site; and ▪ Introduction of equipment and materials.	▪ Vessel movements on and off site; replacement/ repair of cables; and ▪ Physical presence of structures.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km
Increased SSC and associated deposition.	Sediment disturbance and dispersal through the water column	▪ Seabed preparation; seabed dredging and sandwave clearance;	▪ Cable repairs or replacement if required.	▪ Scope of works currently unknown; however, anticipated to be similar to and no	10 km

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
	to reach the site/ feature.	▪ Sediment disposal; and ▪ Installation of scour and cable protection.		greater than those during construction.	
Direct and indirect seabed disturbance leading to the release of sediment contaminants.	Sediment disturbance and dispersal through the water column to reach the site/ feature.	▪ Seabed preparation; seabed dredging and sandwave clearance; ▪ Sediment disposal; and ▪ Installation of scour and cable protection.	▪ Cable repairs or replacement if required.	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km
Release of drill cuttings.	Drill cuttings dispersing through the water column to reach the site/ feature (direct).	▪ Foundation Installation.	▪ N/A	▪ Scope of works currently unknown; however, anticipated to be similar to and no greater than those during construction.	10 km
Accidental pollution events.	Pollution dispersing through the	▪ Accidental release or spill of materials or	▪ Accidental release or spill of materials or	▪ Scope of works currently unknown;	10 km

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
	water column to reach the site/ feature (direct).	chemicals; and ▪ Release of contaminants from suspended sediment (via all activities listed for SSC/ deposition above.)	chemicals from vessel movements on and off site and other maintenance activities.	however, anticipated to be similar to and no greater than those during construction.	
Hydrodynamic change.	Presence of structures (indirect).	▪ N/A	▪ Presence of Structures.	▪ N/A	10 km
Antifouling.	Release of contaminants from antifouling coating of structures (indirect).	▪ N/A	▪ Presence of Structures.	▪ N/A	10 km
Introduction of New Hard Structures.	Presence of structures (direct).	▪ N/A	▪ Presence of Structures.	▪ N/A	0 km – the boundary for the Proposed Variation.

4.3.3 The potential impact pathways identified for marine mammal receptors are identified in Table 4-3 below.

Table 4-3: Potential impact pathways regarding marine mamma ecology

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
Impacts of underwater sound on marine mammals, including auditory injury and disturbance.	Underwater noise generated by Proposed Variation activities may cause behavioural disturbance, displacement, injury to hearing (Temporary Threshold Shift), auditory injury (Permanent Threshold Shift), or masking of communication in marine mammals.	▪ Pile installation.	▪ Operational noise.	▪ Removal of Proposed Variation infrastructure.	As percussive piling is not proposed as part of the construction of the Proposed Variation, and the character of any sound emissions will largely be low-frequency, continuous sound, any underwater sound impacts are predicted to be constrained to within 5 km of the Proposed Variation.
Impacts due to physical presence of vessels, including collision and disturbance .	The physical presence of vessels can lead to avoidance behavior, displacement, or alterations in normal activity	▪ Vessels involved in the construction of the Proposed Variation.	▪ Vessels involved in the maintenance of the Proposed Variation.	▪ Vessels present during the removal of Proposed Variation infrastructure.	Nigg in the Cromarty Firth is the proposed Construction and O and M port. Vessels will transit between Nigg and the Proposed Variation via the Moray Firth. Impacts may

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
	patterns, such as changes in swimming speed and diving characteristics, as well as the risk of physical injury through collision.				occur anywhere along this shipping route and within the boundary of the Proposed Variation.
Marine mammal collision with turbines.	The potential for animal collision with operational tidal turbines is considered a key risk which has the potential to result in injury and/or death of an animal.	▪ N/A	▪ During the operation and maintenance phase, there is the potential for animal collision with operational tidal turbines.	▪ N/A	This impact will only occur within the Proposed Array Area.
Displacement, including barrier effects, to marine mammals from physical presence of devices.	The presence of Proposed Variation infrastructure in the water column may alter natural movement patterns by creating a partial barrier that animals may avoid or navigate	▪ Presence of construction vessels and temporary structures.	▪ Long-term presence of operational tidal turbines.	▪ Removal of tidal turbines, resulting in temporary displacement during decommissioning activities.	This impact will only occur within the Proposed Array Area.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	O and M	Decommissioning	
	around. This could result in displacement, changes in transit routes, or increased energetic expenditure.				
Indirect impacts on marine mammals due to impacts on their prey.	The installation, presence, and decommissioning of Proposed Variation infrastructure on the seabed and in the water column may adversely affect the distribution of prey for marine mammal species. There may be localized reduction in prey availability or changes in prey habitat.	▪ Installation of tidal turbines and export cables on the seabed resulting in long-term habitat modification.	▪ The long-term presence of operational tidal turbines in the water column, resulting in long-term habitat modification.	▪ The removal of tidal turbines, resulting in temporary habitat disturbance.	This impact will only occur within the Proposed Array Area.

4.3.4 The potential impact pathways identified for ornithology receptors are identified in Table 4-4 below.

Table 4-4: Potential impact pathways regarding ornithology

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	Operation and Maintenance	Decommissioning	
Impacts due to physical presence of vessels, including collision and disturbance.	The physical presence of vessels can lead to avoidance behavior, displacement, or alterations in normal activity patterns, such as changes in swimming speed and diving characteristics, as well as the risk of physical injury through collision.	▪ Vessels involved in the construction of the Proposed Variation.	▪ Vessels involved in the maintenance of the Proposed Variation.	▪ Vessels present during the removal of Proposed Variation infrastructure.	Nigg in the Cromarty Firth is the proposed Construction and O and M port. Vessels will transit between Nigg and the Proposed Variation via the Moray Firth. Impacts to ornithological receptors may occur anywhere along this shipping route and within the boundary of the Proposed Variation.
Collisions between diving birds and underwater turbines.	The potential for diving bird collision with operational tidal turbines is considered a key risk which has the potential to result	▪ N/A	▪ During the operation and maintenance phase, there is the potential for diving bird collision with	▪ N/A	This impact will only occur within the Proposed Array Area.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	Operation and Maintenance	Decommissioning	
	in injury and/or death of birds.		operational tidal turbines.		
Indirect impacts on seabirds due to impacts on their prey.	The installation, presence and decommissioning of Proposed Variation infrastructure on the seabed and in the water column may adversely affect the distribution of prey for marine mammal species. There may be localized reduction in prey availability or changes in prey habitat.	▪ Installation of tidal turbines and export cables on the seabed resulting in long-term habitat modification.	▪ The long-term presence of operational tidal turbines in the water column, resulting in long-term habitat modification.	▪ The removal of tidal turbines, resulting in temporary habitat disturbance.	This impact will only occur within the Proposed Array Area.
Collisions between diving birds and underwater turbines.	The potential for diving bird collision with operational tidal turbines is considered a key risk which has the potential to result	▪ N/A	▪ During the operation and maintenance phase, there is the potential for diving bird collision with	▪ N/A	This impact will only occur within the Proposed Array Area.

Potential Impact	Impact Pathway	Activities resulting in Potential Effect			ZoI for this impact
		Construction	Operation and Maintenance	Decommissioning	
	in injury and/or death of birds.		operational tidal turbines.		
Indirect impacts on seabirds due to impacts on their prey.	The installation, presence and decommissioning of Proposed Variation infrastructure on the seabed and in the water column may adversely affect the distribution of prey for marine mammal species. There may be localized reduction in prey availability or changes in prey habitat.	▪ Installation of tidal turbines and export cables on the seabed resulting in long-term habitat modification.	▪ The long-term presence of operational tidal turbines in the water column, resulting in long-term habitat modification.	▪ The removal of tidal turbines, resulting in temporary habitat disturbance.	This impact will only occur within the Proposed Array Area.

5 European Site Selection

5.1 Overview

5.1.1 Following the identification of potential impact pathways (the source and pathway), the identification of receptors is the next step. This step of the process essentially provides a long list of designated sites identified based on potential spatial connectivity to the Proposed Variation, to be taken forward for consideration of no LSE. The potential effects associated with the construction, O and M and decommissioning of the Proposed Variation are presented in Section 4. This section considers the impact pathways and relevant ZoIs to identify relevant designated sites and features. This is presented on a topic-by-topic basis. Where some designated sites are designated for features covering multiple receptor groups, the site has been repeated in all relevant sections below, with only the features relevant to the specific receptor group presented in the relevant section.

5.2 Identification of European Sites

Marine and Coastal Processes

5.2.1 As detailed within **Chapter 8: Marine and Coastal Processes** of the EIA Scoping Report, the ZoI for marine and coastal processes is 10 km. This has been defined based on numerical modelling results, which show that potential modifications to tidal and wave regimes (and consequent potential impacts on sediment transport) remain within 10 km from the Proposed Array Area.

5.2.2 There are no designated sites within 10 km that are designated for marine and coastal processes receptors, or for receptors considered sensitive to marine and coastal processes impacts.

Benthic Ecology

5.2.3 As detailed within **Chapter 9: Benthic Ecology** of the EIA Scoping Report, the ZoI for benthic ecology is the Proposed Project Area (included of the Proposed Array Area and Proposed Cable Corridor) plus a precautionary buffer of 10 km as informed by marine and coastal processes.

5.2.4 There are no designated sites that overlap with the Proposed Area or the Proposed ZoI for benthic ecology receptors.

Marine Mammals

5.2.5 The initial screening criteria that have been applied to identify European sites with potential connectivity to the Proposed Variation are:

- European sites which have a boundary that directly overlaps with the Proposed Project Area; and
- European sites which are located within the cetacean Management Unit (MU)) or Seal Management Area of the Annex II marine mammal species for which they are designated.

5.2.6 This section considers four species of marine mammal: harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), harbour seal (*Phoca vitulina*), grey seal (*Halichoerus grypus*). These species are the marine mammals listed on Annex II of the EU Habitats Directive which require the designation of SACs (NatureScot, 2025a). The respective MU for the species informs the ZoI for the respective species and is used in completing the Screening Assessment.

5.2.7 This Section also considers one species of semi-aquatic mammal: the Eurasian otter (*Lutra lutra*). This species is also listed on Annex II of the EU Habitats Directive. Unlike the marine mammals, otter does not have designated management areas. A screening range of 10 km from the Proposed Variation has been implemented to consider impacts on otter SACs.

5.2.8 There are two SACs designated for the conservation of marine mammals located in the Orkney Islands, which lie within the North Coast and Orkney Seal Monitoring Units (identified in Figure 5-1). These SACs are specifically designated to protect key breeding colonies for seals:

- Faray and Holm of Faray SAC (located 71 km from the Proposed Variation (Figure 5-1) designated for the conservation of grey seals; and
- Sanday SAC (located 74 km from the Proposed Variation (Figure 5-1) designated for harbour seal.

5.2.9 There is one SAC for otter within 10 km of the Proposed Variation:

- Caithness and Sutherland Peatlands SAC, a large but fragmented SAC, which at its closest point lies 1.9 km inland from the Proposed Variation.

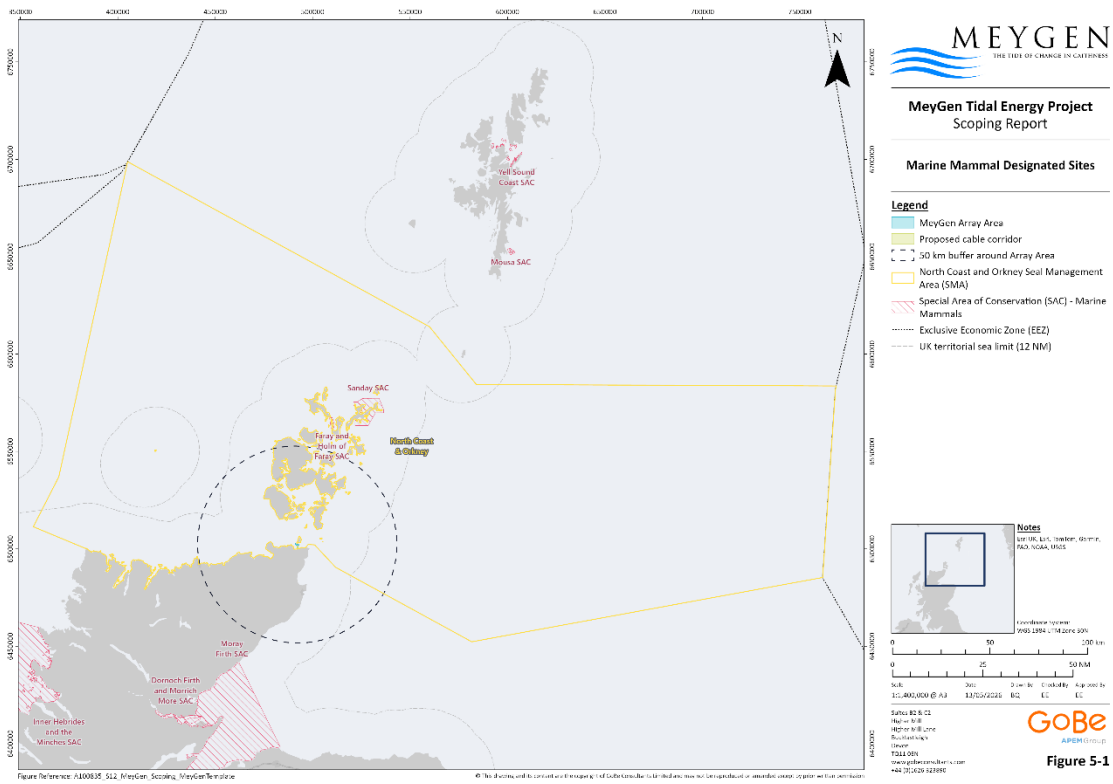

Figure 5-1: Marine mammal SACs in proximity to the Proposed Variation

5.2.10 The Inter-Agency Marine Mammal Working Group (IAMMWG) has defined MUs for the seven most common cetacean species present within UK waters (IAMMWG, 2023). MUs define the graphical areas within which particular cetacean species occur and where management measures for offshore human activities are applied. Data on presence/absence, distribution, and abundance within the relevant MUs has been used to assess the likelihood of connectivity between the Proposed Variation and European sites designated for the conservation of cetacean species.

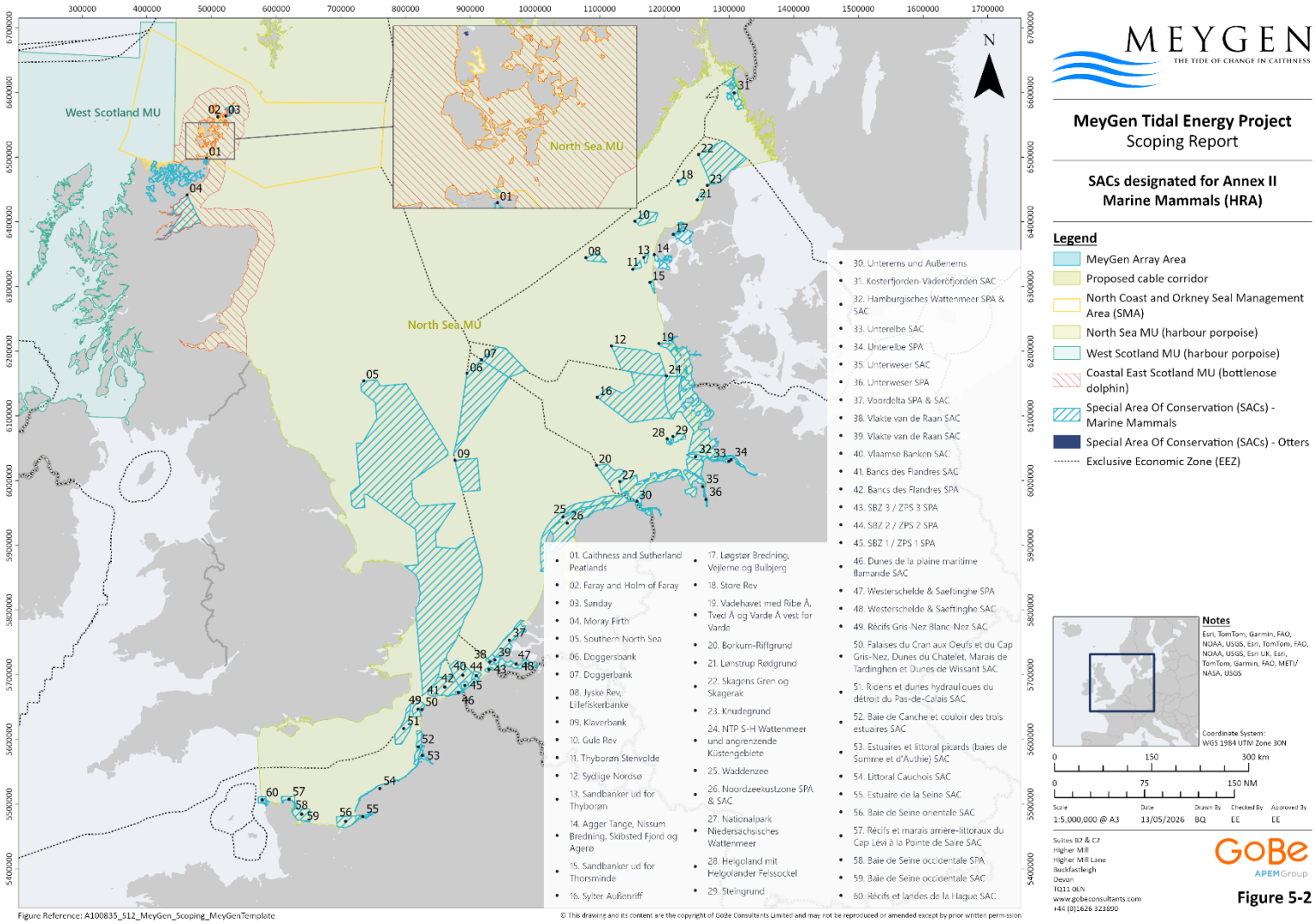

Figure 5-2 Cetacean management units and SACs

5.2.11 The Proposed Variation does not directly overlap or lie within close proximity of any site designated for the conservation of cetaceans. However, a number of SACs for harbour porpoise, and one SAC for bottlenose dolphin, lie within the same MU as the Proposed Variation, which indicates the potential for connectivity. The nearest SACs with cetaceans as a qualifying feature are identified in Table 5-1.

5.2.12 The Southern North Sea SAC is the closest European site designated to the conservation of harbour porpoise in the North Sea MU, located 427 km south of the Proposed Project Area (Figure 5-2). Harbour porpoise are the most abundant cetacean species in UK waters (Gilles *et al.*, 2023) and the population of the UK portion of the North Sea MU is 159,632 (IAMMWG, 2023).

5.2.13 The closest site designated for the conservation of bottlenose dolphin is the Moray Firth SAC, located 84 km from the Proposed Project Area (Figure 5-2). Bottlenose dolphin are common around eastern Scotland, primarily in shallow (<20 m) waters within 2 km of the coast (Quick *et al.*, 2014).

5.2.14 The European sites that have been identified using the initial screening criteria set out in Section 5.2.5 are listed in Table 5-1.

Table 5-1: Sites identified within the ZoI considered for marine mammals

Designated Site	Distance from Proposed Variation (km)	Relevant Features
Faray and Holm of Faray SAC	71	Grey seal
Sanday SAC	74	Harbour seal
Moray Firth SAC	84	Bottlenose dolphin
Southern North Sea	427	Harbour porpoise
Doggerbank (Germany)	480	Harbour porpoise
Doggersbank (Netherlands)	512	Harbour porpoise
Jyske Rev, Lillefiskerbanke (Denmark)	575	Harbour porpoise
Klaverbank (Netherlands)	600	Harbour porpoise
Sydlige Nordsø (Denmark)	667	Harbour porpoise
Thyborøn Stenvolde (Denmark)	647	Harbour porpoise
Sylter Außenriff (Germany)	686	Harbour porpoise
Gule Rev (Denmark)	631	Harbour porpoise
Sandbanker ud for Thyborøn (Denmark)	655	Harbour porpoise
Sandbanker ud for Thorsminde (Denmark)	679	Harbour porpoise
Agger Tange, Nissum Bredning, Skibsted Fjord og Agerø (Denmark)	671	Harbour porpoise
Vadehavet med Ribe Å, Tved Å og Varde Å vest for Varde (Denmark)	731	Harbour porpoise

Designated Site	Distance from Proposed Variation (km)	Relevant Features
Løgstør Bredning, Vejlerne og Bulbjerg (Denmark)	698	Harbour porpoise
Borkum-Riffgrund (Germany)	756	Harbour porpoise
NTP S-H Wattenmeer und angrenzende Küstengebiete (Germany)	762	Harbour porpoise
Store Rev (Denmark)	695	Harbour porpoise
Noordzeekustzone (Netherlands)	759	Harbour porpoise
Waddenzee (Netherlands)	773	Harbour porpoise
Lønstrup Rødgrund (Denmark)	725	Harbour porpoise
Nationalpark Niedersächsisches Wattenmeer (Germany)	798	Harbour porpoise
Knudegrund (Denmark)	740	Harbour porpoise
Helgoland mit Helgoländer Felssockel	806	Harbour porpoise
Skagens Gren og Skagerak (Denmark)	726	Harbour porpoise
Steingrund (Germany)	810	Harbour porpoise
Unterems und Außenems (Germany)	838	Harbour porpoise
Hamburgisches Wattenmeer (Germany)	843	Harbour porpoise
Unterelbe (Germany)	870	Harbour porpoise
Unterweser (Germany)	877	Harbour porpoise
Kosterfjorden-Väderöfjorden (Sweden)	803	Harbour porpoise
Voordelta (Netherlands)	854	Harbour porpoise
Vlaamse Banken (Belgium)	887	Harbour porpoise
Vlakte van de Raan (Netherlands)	878	Harbour porpoise
Westerschelde and Saeftinghe (Netherlands)	908	Harbour porpoise
SBZ 3 / ZPS 3 (Belgium)	892	Harbour porpoise
SBZ 2 / ZPS 2 (Belgium)	888	Harbour porpoise
Bancs des Flandres (France)	899	Harbour porpoise
SBZ 1 / ZPS 1 (Belgium)	896	Harbour porpoise
Dunes de la plaine maritime flamande (France)	930	Harbour porpoise
Récifs Gris-Nez Blanc-Nez (France)	936	Harbour porpoise

Designated Site	Distance from Proposed Variation (km)	Relevant Features
Ridens et dunes hydrauliques du détroit du Pas-de-Calais (France)	942	Harbour porpoise
Falaises du Cran aux Oeufs et du Cap Gris-Nez, Dunes du Chatelet, Marais de Tardinghen et Dunes de Wissant (France)	945	Harbour porpoise
Baie de Canche et couloir des trois estuaires (France)	981	Harbour porpoise
Estuaires et littoral picards (baies de Somme et d'Authie) (France)	1003	Harbour porpoise
Littoral Cauchois (France)	1040	Harbour porpoise
Récifs et marais arrière-littoraux du Cap Lévi à la Pointe de Saire (France)	1157	Harbour porpoise
Estuaire de la Seine (France)	1128	Harbour porpoise
Récifs et landes de la Hague (France)	1190	Harbour porpoise
Baie de Seine occidentale (France)	1155	Harbour porpoise
Baie de Seine orientale (France)	1129	Harbour porpoise

5.2.15 The initial screening criteria used to identify relevant European sites in relation to the Proposed Variation are described below:

- European sites (SPAs) that overlap with the Proposed Variation and are designated for bird features (this includes direct overlap between the Proposed Variation boundary and SPAs);
- European sites with marine bird qualifying features that may have connectivity with the potential effects of the Proposed Variation due to their range (e.g. breeding, foraging, and as habitat during breeding and overwintering); and
- Consideration is also given to designated sites with bird qualifying features that have migratory ranges that may overlap with the Proposed Variation.

5.2.16 There is one SPA which overlaps with the Proposed Variation: North Caithness Cliffs SPA, a large but fragmented SPA which is designated for breeding seabirds and peregrine, and the seabird assemblage. The Isle of Stroma is part of this SPA and the marine extension to the SPA around Stroma overlaps with the Proposed Variation.

5.2.17 A variety of bird species are likely to occur within the Proposed Variation boundary and surrounding areas. These species have been grouped into categories to assist with this screening process. The categories have been established from a variety of factors including breeding biology, feeding, habitat use and migratory pathways. The categories are:

- Breeding seabirds (including the breeding seabird assemblage);
- Non-breeding seabirds (which includes breeding, migrating and wintering waterbirds); and
- Terrestrial birds.

5.2.18 **Breeding seabirds**: Seabirds which are qualifying features of a number of SPAs may use the waters in and around the Proposed Variation during the breeding season (e.g. for foraging). Breeding seabirds can be described as central place foragers whereby they are required to return to a single geographical location (the breeding colony or nest site) to incubate eggs and brood/provision their young, between bouts of foraging at sea. Woodward *et al.,* (2019) provide the most recent data on recorded foraging ranges for a wide range of species, including the mean maximum foraging range.

5.2.19 To determine potential connectivity between a seabird breeding colony SPA and the Proposed Variation, for most of the species the foraging range used is the mean maximum distance plus one standard deviation (Mean-max Foraging Range (MMFR) + 1 Standard Deviation (SD)) as presented in Woodward et al. (2019), in line with NatureScot Guidance Note 3 (NatureScot, 2023a). These are provided in Table 5-2. For some species, mean maximum ranges are not available and mean ranges are given. Potential connectivity to marine SPAs is also established through consideration of connectivity from functionally linked seabird colony SPAs i.e. using the recommended 'at sea' foraging ranges from Woodward et al. (2019) (Table 5-4).

5.2.20 Additionally, NatureScot provided specific advice with regards to gannet, razorbill and guillemot, where maximum values may not reflect the conditions typically faced by birds at a given breeding colony (NatureScot, 2023a). Site-specific data have presented a more robust evidence base for the follow species and sites:

- For gannet, NatureScot advise consideration of site-specific maximum foraging ranges for Forth Islands SPA, St Kilda SPA and Grassholm SPA; and
- For guillemot and razorbill, NatureScot advise use of mean maximum foraging range + 1SD, including data from Fair Isle, for all Northern Isles designated sites. For all designated sites south of the Pentland Firth (including North Caithness Cliffs SPA), they advised use of MMFR + 1SD discounting Fair Isle values.

Table 5-2: Seabird foraging ranges recommended by NatureScot (based on Woodward *et al.*, 2019)

Species	Foraging range (km)	Foraging Range Metric
Common eider	21.5	Maximum
Arctic skua	2.7	Data deficient
Arctic tern	40.5	Mean max + 1SD
Atlantic puffin	265.4	Mean max + 1SD
Black-headed gull	18.5	Maximum
Black-legged kittiwake	300.6	Mean max + 1SD
Common gull	50	Maximum
Common tern	26.9	Mean max + 1SD
Cormorant	33.9	Mean max + 1SD
European shag	23.7	Mean max + 1SD
European Storm Petrel	336.0	Maximum
Great black-backed gull	73.0	Maximum
Great skua	931.2	Mean max + 1SD
Herring gull	85.6	Mean max + 1SD
Leach's storm petrel	657.0	Mean
Lesser black-backed gull	236.0	Mean max + 1SD
Little tern	5	Maximum
Manx shearwater	2,365.5	Mean max + 1SD
Mediterranean gull	20	Max
Northern fulmar	1,200.2	Mean max + 1SD
Red-throated diver	9	Maximum
Roseate tern	23.2	Mean max + 1SD
Sandwich tern	57.5	Mean max + 1SD
Northern gannet	509.4	mean max +1SD
Northern gannet (Forth Island SPA)	216.7	Site-specific maximum
Northern gannet (Grassholm SPA)	516.7	Site-specific maximum
Northern gannet (St Kilda SPA)	709.0	Site-specific maximum
Common guillemot (North of Pentland Firth)	153.7	mean max+1SD, including data from Fair Isle
Common guillemot (South of Pentland Firth)	95.2	Mean max+1SD discounting Fair Isle values
Razorbill (North of Pentland Firth)	164.6	mean max+1SD, including data from Fair Isle
Razorbill (South of Pentland Firth)	95.2	mean max+1SD discounting Fair Isle values

Species	Foraging range (km)	Foraging Range Metric
Black guillemot	No SPAs for this species, therefore not included.	

5.2.21 The key offshore species present in the area which have an increased sensitivity to tidal turbines includes:

5.2.22 Non-breeding birds: During the non-breeding season, when species are not spatially restricted by breeding constraints, determining connectivity is conducted in accordance with NatureScot Guidance Note 4 (NatureScot, 2023b). This includes non-breeding seabirds that are qualifying features of the marine SPAs and breeding seabirds from SPA colonies during the non-breeding season.

5.2.23 For marine SPAs designated for non-breeding waterbirds, including divers and sea ducks, and non-breeding seabird qualifying features of marine SPAs, connectivity is established using a 15 km range to inform the inclusion of marine SPA qualifying features (Table 5-3).

5.2.24 For breeding seabirds from colony SPAs during the non-breeding season, there is the potential for connectivity as seabird species are not constrained to colonies and are more widely distributed. It is not possible to make a general assumption that there will be no potential LSE on all species within an SPA area. It can be predicted that lower densities of the species will be present during this period and lower apportioning values would be more appropriate to use.

5.2.25 For all inshore wintering waterfowl qualifying features of marine SPAs, connectivity is considered within 15 km of the SPA, or where functional linkage between two marine SPAs may result in impacts on marine SPAs further afield (Table 5-5).

5.2.26 Terrestrial birds: Due to the offshore location of the Proposed Variation, SPAs for terrestrial birds have been screened out on the basis of no pathway to LSE.

5.2.27 Based on the criteria outlined above, the SPAs for which there is potential connectivity with the Proposed Variation are listed in Table 5-3, Table 5-4 and Table 5-5. The sites for which there is connectivity will be taken forward for consideration of LSEs. Furthermore, the sensitivity of species to tidal projects have also been considered further using Furness *et al.,* (2012).

Table 5-3: Sites with breeding seabird qualifying features with the potential for connectivity to the Proposed Variation (based on foraging ranges, Woodward *et al.,* 2019). Distances are at-sea distances (rather than straight-line distances)

Designated Site	Distance from Proposed Variation	Relevant Features
North Caithness Cliffs SPA	0 (overlapping)	Northern fulmar Black-legged kittiwake Common guillemot Razorbill Atlantic puffin
Pentland Firth Islands SPA	9.1	Arctic tern
Hoy SPA	12.4	Northern fulmar Great skua Great black-backed gull Black-legged kittiwake Common guillemot Atlantic puffin Breeding seabird assemblage
East Caithness Cliffs SPA	30.5	Northern fulmar Great cormorant Herring gull Great black-backed gull Black-legged kittiwake Common guillemot Razorbill Breeding seabird assemblage
Copinsay SPA	32.5	Northern fulmar Great black-backed gull Black-legged kittiwake Common guillemot Breeding seabird assemblage
Auskerry SPA	51.9	European storm-petrel
Marwick Head SPA	52.2	Black-legged kittiwake Common guillemot Breeding seabird assemblage
Rousay SPA	67.5	Northern fulmar Black-legged kittiwake Common guillemot Breeding seabird assemblage
Calf of Eday SPA	69.3	Northern fulmar Great black-backed gull Black-legged kittiwake Common guillemot Breeding seabird assemblage
West Westray SPA	77.1	Northern fulmar Black-legged kittiwake Common guillemot Razorbill Breeding seabird assemblage

Designated Site	Distance from Proposed Variation	Relevant Features
Sule Skerry and Sule Stack SPA	82.0	European storm-petrel Leach's storm-petrel Northern gannet Common guillemot Atlantic puffin Breeding seabird assemblage
Cape Wrath SPA	95.2	Northern fulmar Black-legged kittiwake Razorbill Atlantic puffin Breeding seabird assemblage
Troup, Pennan and Lion's Heads SPA	117.9	Northern fulmar Black-legged kittiwake Razorbill Breeding seabird assemblage
Fair Isle SPA	122.2	Northern fulmar Northern gannet Great skua Black-legged kittiwake Common guillemot Razorbill Atlantic puffin Breeding seabird assemblage
Handa SPA	133.9	Northern fulmar Great skua Black-legged kittiwake Breeding seabird assemblage
Buchan Ness to Collieston Coast SPA	154.6	Northern fulmar Black-legged kittiwake Breeding seabird assemblage
North Rona and Sula Sgeir SPA	156.2	Northern fulmar European storm-petrel# Leach's storm-petrel Northern gannet Black-legged kittiwake Atlantic puffin Breeding seabird assemblage
Sumburgh Head SPA	164.5	Northern fulmar Black-legged kittiwake Breeding seabird assemblage
Foula SPA	170.5	Northern fulmar Great skua Black-legged kittiwake Atlantic puffin Breeding seabird assemblage
Mousa SPA	183.3	European storm-petrel
Priest Island (Summer Isles) SPA	186.5	European storm-petrel
Noss SPA	198.3	Northern fulmar

Designated Site	Distance from Proposed Variation	Relevant Features
		Northern gannet Great skua Black-legged kittiwake Atlantic puffin Breeding seabird assemblage
Shiant Isles SPA	215.2	Northern fulmar Black-legged kittiwake Atlantic puffin Breeding seabird assemblage
Fowlsheugh SPA	218.4	Northern fulmar Black-legged kittiwake Breeding seabird assemblage
Fetlar SPA	247.8	Northern fulmar Great skua Breeding seabird assemblage
Flannan Isles SPA	257.6	Northern fulmar Black-legged Kittiwake Atlantic puffin Breeding seabird assemblage
Hermaness, Saxa Vord and Valla Field SPA	268.0	Northern fulmar Northern gannet Great skua Black-legged kittiwake Breeding seabird assemblage
Forth Islands SPA	299.8	Northern gannet Black-legged kittiwake Breeding seabird assemblage
Rum SPA	316.6	Manx shearwater Breeding seabird assemblage
St Kilda SPA	325.6	Northern fulmar Manx shearwater European storm-petrel Northern gannet Great skua Breeding seabird assemblage
Mingulay and Berneray SPA	354.6	Northern fulmar Breeding seabird assemblage
SPAs in UK (Northern Ireland, Wales), Republic of Ireland (IE), Germany (DE) and France (FR): Inishtrahull SPA (IE) Horn Head to Fanad Head SPA (IE) Tory Island SPA (IE) West Donegal Coast SPA (IE) Copeland Islands SPA (UK) Inishmurray SPA (IE) Aughris Head SPA (IE) Stags of Broad Haven SPA (IE)	>400	There are a further 46 SPAs at a distance of >400 km from the Proposed Variation; some in the UK, and some in other European states.

Designated Site	Distance from Proposed Variation	Relevant Features
Irish Sea Front SPA (UK) Inishkea Islands SPA (IE) Duvillaun Islands SPA (IE) Skerries Islands SPA (IE) Lambay Island SPA (IE) Bills Rocks SPA (IE) Ireland's Eye SPA (IE) Howth Head Coast SPA (IE) High Island, Inishshark and Davillaun SPA (IE) Cruagh Island SPA (IE) Wicklow Head SPA (IE) Glannau Aberdaron ac Ynys Enlli/ Aberdaron Coast and Bardsey Island SPA (UK) Inishmore SPA (IE) Seevogelschutzgebiet Helgoland SPA (DE) Cliffs of Moher SPA (IE) Illaunonearaun SPA (IE) Loop Head SPA (IE) Saltee Islands SPA (IE) Kerry Head SPA (IE) Magharee Islands SPA (IE) Dingle Peninsula SPA (IE) Skomer, Skokholm and the Seas off Pembrokeshire / Sgomer, Sgogwm a Moroedd Penfro SPA (UK) Blasket Islands SPA (IE) Iveragh Peninsula SPA (IE) Helvick Head to Ballyquin SPA (IE) Puffin Island SPA (IE) Skelligs SPA (IE) Deenish Island and Scariff Island SPA (IE) The Bull and The Cow Rocks SPA (IE) Beara Peninsula SPA (IE) Sheep's Head to Toe Head SPA (IE) Littoral seino-marin SPA (FR) Old Head of Kinsale SPA (IE) Galley Head to Duneen Point SPA (IE) Falaise du Bessin Occidental SPA (FR) Ouessant-Molène SPA (FR) Cote de Granit Rose-Sept Iles SPA (FR) Baie de Morlaix SPA (FR)		Species with connectivity to the Proposed Variation at this distance are Manx shearwater and northern fulmar. While these sites are screened in for further consideration, it is highly unlikely that any effects would lead to an adverse effect on site integrity.

Designated Site	Distance from Proposed Variation	Relevant Features
Iles Houat-Hoedic SPA (FR)		

Table 5-4 Marine SPAs with breeding seabird qualifying features with potential for connectivity to the Proposed Variation (due to seabird foraging ranges; Woodward *et al.*, 2019). Distances are at-sea distances (rather than straight-line distances)

Designated Site	Distance from Proposed Variation (km)	Relevant Features
Scapa Flow SPA	12.4	Red-throated diver (breeding)
North Orkney SPA	47.0	Red-throated diver (breeding)
Seas off Foula SPA	145.8	Northern fulmar Great skua Atlantic puffin
Outer Firth of Forth and St Andrews Bay Complex SPA	266.0	Manx shearwater Northern gannet Black-legged kittiwake
Seas off St Kilda SPA	272.9	Northern fulmar European storm-petrel Northern gannet

Table 5-5 Marine SPAs with non-breeding seabird and waterbird qualifying features with potential for connectivity to the Proposed Variation. The rationale for screening in is also presented here. Distances are at-sea distances (rather than straight-line distances)

Designated Site	Distance from Proposed Variation (km)	Relevant Features	Rationale
Scapa Flow SPA	12.4	Great northern diver (non-breeding) Red-throated diver (non-breeding) Black-throated diver (non-breeding) Slavonian grebe (non-breeding) European shag (non-breeding) Common eider (non-breeding) Long-tailed duck Red-breasted merganser	Site lies within 15 km of the Proposed Variation, therefore is considered to have connectivity in line with NatureScot guidance.
North Orkney SPA	47.0	Great northern diver (non-breeding) Red-throated diver (non-breeding) Slavonian grebe (non-breeding)	Three qualifying features (great northern diver, red-throated diver, and Slavonian grebe) use both Scapa

Designated Site	Distance from Proposed Variation (km)	Relevant Features	Rationale
		Velvet scoter (non-breeding)	Flow SPA and North Orkney SPA during the non-breeding period, therefore impacts on Scapa Flow SPA could also adversely affect North Orkney SPA.

6 Screening Undertaken for the Proposed Variation

6.1 Overview

6.1.1 With the consideration of potential effects and identification of designated sites presented above, a determination of potential LSE has been made following the source-pathway-receptor approach described above. This is completed here on a topic-by-topic basis.

6.2 Determination of No Potential LSE

Marine and Coastal Processes

6.2.1 As no designated sites with marine and coastal processes receptors have been identified within the marine and coastal processes ZoI and no potential effects identified, it is considered that there is no pathway for effect and therefore no potential for LSE on marine and coastal processes receptors as a result of the Proposed Variation alone or in-combination.

Benthic Ecology

6.2.2 As no designated sites with benthic ecology receptors have been identified within the benthic ecology ZoI and no potential effects identified, it is considered that there is no pathway for effect and therefore no potential for LSE on benthic ecology receptors as a result of the Proposed Variation alone or in-combination.

Marine Mammals

6.2.3 The Proposed Variation is located within the Central East Scotland (CES) MU for bottlenose dolphin. The Moray Firth SAC, located 84 km SE of the Proposed Variation Area, is designated for the conservation of bottlenose dolphin, and also lies within the CES MU. There have been citizen science records of bottlenose dolphins from the CES MU/Moray Firth SAC population around Orkney and off the north coast of Scotland, identified as Moray Firth animals through photo-identification matches. However, those sightings are rare, and as such there is no evidence that the Inner Sound constitutes key habitat for this population. It is widely understood that the Coastal East Scotland population, associated with the Moray Firth SAC, ranges widely around the shores of the Moray Firth (Cheney *et al.*, 2024), Aberdeenshire and Angus coasts (Arso-Civil *et al.*, 2019), and the firths of Tay and Forth (Ellis *et al.*, 2024), with increasing numbers of sightings off NE England[1]. Furthermore, it is more likely that any bottlenose dolphins occurring within the Inner Sound (including the Proposed Variation Area) and wider Pentland Firth are the offshore ecotype (Louis *et al.*, 2014). Although there is some potential for connectivity between the Proposed Variation and the Moray Firth SAC, it is recognised that the SAC population has a preference for the coastal waters of eastern Scotland and NE England. Given the localised nature of effects arising from the Proposed Variation, there is no potential for LSE on the bottlenose dolphin feature of the Moray Firth SAC, this site has been **screened out** on the basis of no LSE.

[1] https://www.bbc.co.uk/news/articles/cr7l5y1nyr9o

6.2.4 The Proposed Variation lies within the North Sea MU for harbour porpoise, which contains numerous SACs designated for this species across UK, Swedish, Danish, German, Dutch and French waters. The nearest SAC designated for harbour porpoise is the Southern North Sea SAC, located approximately 427 km south of the Proposed Variation Area, and is the only SAC for harbour porpoise located within UK waters in the North Sea MU. Due to the intervening distance between the Proposed Variation and the Southern North Sea SAC, and any other harbour porpoise SAC in the North Sea MU, it is considered highly unlikely that any harbour porpoise associated with one of these European sites will occur within the Proposed Variation and adjacent waters, owing to the extensive available habitat found throughout the wider North Sea marine region. As all impacts associated with the Proposed Variation will be highly localised, it is therefore considered that there is no potential for LSE for any European site designated for the conservation of harbour porpoise. Therefore, all European sites designated for the conservation of harbour porpoise have been **screened out** on the basis of no LSE.

6.2.5 To determine whether there is LSE, these sites were screened on the basis of typical foraging ranges of pinnipeds during the breeding period:

- **Harbour seal**: evidence suggests that harbour seals spend the majority of their time within 50 km of the coast (Jones *et al.*, 2017), with the highest densities located near haul out sites (Bailey *et al*, 2014); and
- **Grey seal**: while there is evidence of grey seals making long distance trips from haul out sites e.g., up to 200-350 km across the English Channel (Vincent *et al.*, 2016), most grey seals spend the majority of their time (68.5%) close to their haul out sites, especially during the breeding season (Vincent *et al.*, 2016; Carter *et al.*, 2022). Therefore, a 20 km screening range has been applied to grey seal.

6.2.6 There are several locations within the Orkney Islands, where harbour seals breed, with haul-out sites distributed around the mainland and the smaller islands throughout the region (Special Committee on Seals (SCOS), 2025). Harbour seal numbers across eastern and northern Scotland and the northern isles, including Orkney, have undergone a severe decline in recent decades, with an estimated 85% reduction in the Orkney population since 2000 (SCOS, 2025). Sanday SAC, in the north of Orkney, was previously the largest breeding site in the North Coast and Orkney Seal Management Area (SMA). The harbour seal feature of the Sanday SAC is currently assessed as being in an 'unfavourable, declining' condition, based on the most recent evaluation undertaken in 2023 (NatureScot, 2025b). Harbour seals usually feed within 50 km of their haul-out site, and habitat preference modelling published by Carter *et al.* (2022) predicted that no harbour seals from Sanday would occur on the south side of the Pentland Firth, including the Proposed Variation Area (Figure 6-1). Sanday SAC is located 74 km from the Proposed Variation, and as such, beyond the assumed 50 km foraging range of seals from this SAC. As all works associated with the Proposed Variation will be highly localised, it is therefore considered that there is no likelihood of Sanday harbour seals experiencing any impacts from the Proposed Variation. Therefore, the Sanday SAC has been **screened out** on the basis of no LSE.

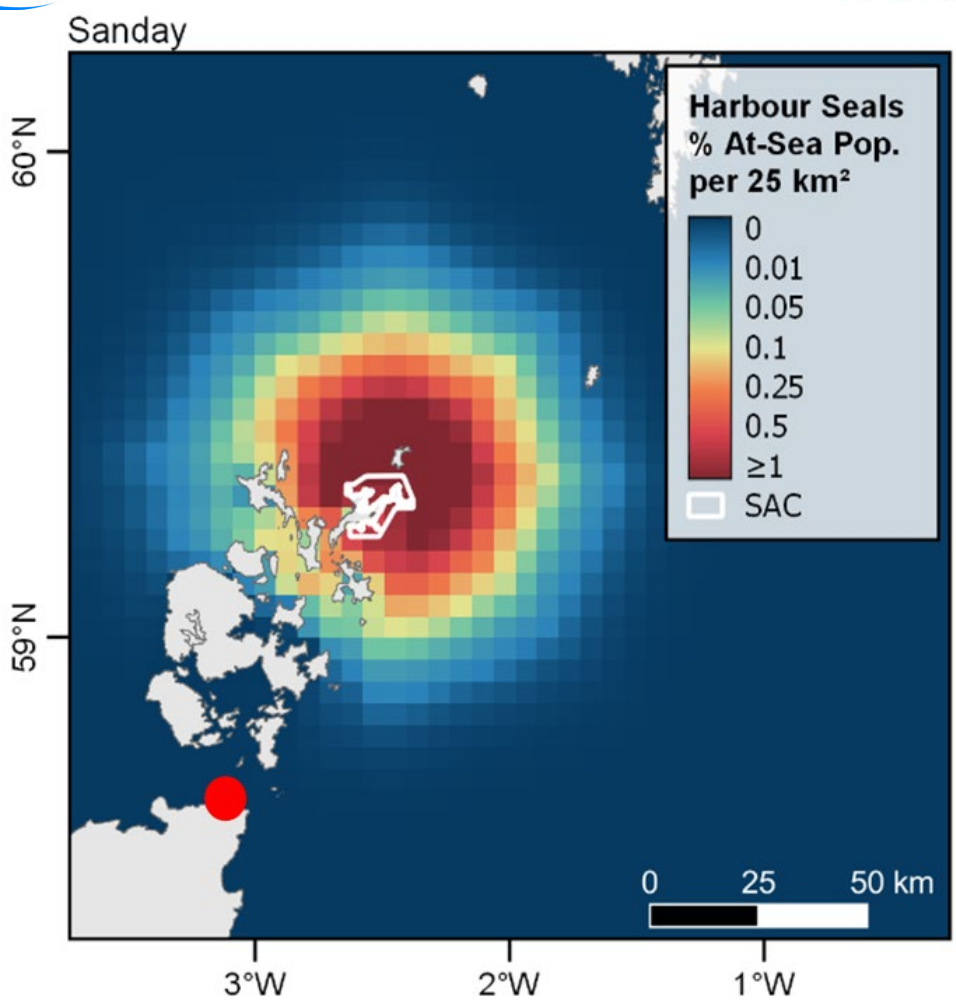

Figure 6-1: Figure showing the habitat preference (relative at-sea density) of Sanday SAC harbour seals, presented by Carter *et al.*, 2022. The dark blue colour which occurs within the Proposed Variation Area represents no predicted presence of Sanday harbour seals. The location of the Proposed Variation Area within the Inner Sound is denoted by the red dot.

6.2.7 However, consideration of both harbour seals and grey seals on the basis of their regional (North Coast and Orkney SMA) population will be undertaken in detail through the EIA process, rather than the HRA process.

6.2.8 Faray and Holm of Faray SAC is the nearest European site with grey seals as a qualifying feature, located 71 km from the Proposed Variation. The site is one of the UK's most significant grey seal breeding and haul-out areas, supporting the country's second-largest breeding colony and contributing approximately 9% of annual UK pup production (JNCC, 2025). The grey seal population associated with the SAC is currently assessed as having an "unfavourable, declining" status (NatureScot, 2025c) following recent observed declines in pup production and counts during August aerial surveys. Although grey seals are wide-ranging outside of the breeding season (Carter *et al.*, 2022), grey seal SACs are designated for the protection of a breeding population, which remains very closely associated with its colony during the breeding season. Given that the Faray and Holm of Faray SAC is located beyond of the 20 km foraging range identified for grey seals (Table 5-1) and as all works associated with the Proposed Variation will be highly localised, it is therefore considered that there is no likelihood of Faray and Holm of Faray breeding grey seals experiencing any impacts from the Proposed Variation. Therefore, Faray and Holm of Faray SAC has been **screened out** on the basis of no LSE.

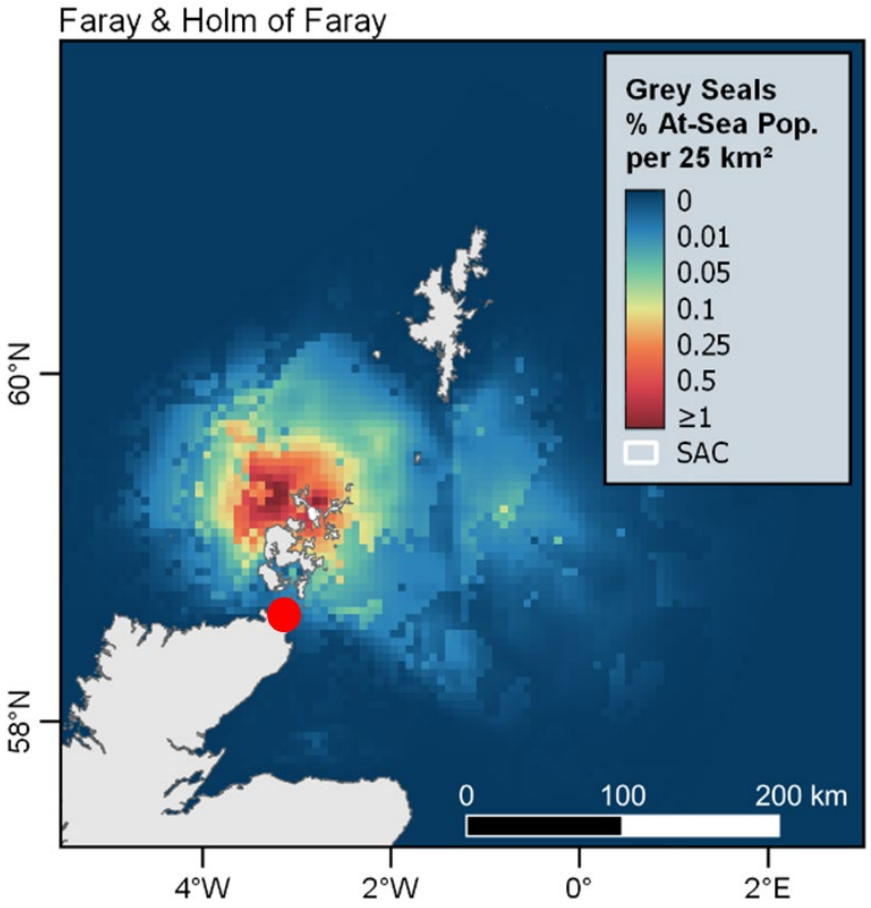

Figure 6-2: Figure showing the habitat preference (relative at-sea density) of Faray and Holm of Faray SAC grey seals, presented by Carter *et al.*, 2022. The dark blue colour which occurs within the Proposed Variation Area represents very low predicted presence of Faray and Holm of Faray grey seals. During the breeding season it is significantly less likely SAC grey seals would occur in the Proposed Variation Area. The location of the Proposed Variation Area within the Inner Sound is denoted by the red dot.

6.2.9 Otters are semi-aquatic mammals that rely on lochs, rivers, or the sea for food. In freshwater habitats, otters can occupy large home ranges from around 32 km for males, and 20 km for females (NatureScot, 2017). However, the extensive otter habitat within the Caithness and Sutherland Peatlands SAC is sufficient to support the site's designated otter population, and it is therefore not anticipated that otters associated with the SAC would forage beyond its boundaries, including in the coastal marine environment in the Inner Sound, adjacent to the Proposed Variation. Therefore, a 1 km buffer is considered proportionate for consideration of LSE from the Proposed Variation. As Caithness and Sutherland Peatlands SAC lies 1.9 km from the Proposed Variation, it is **screened out** on the basis of no LSE.

6.2.10 Based on the initial screening criteria in Section 5.2.5 for cetaceans, pinnipeds, and otters, and the information provided above, it can be concluded that there are no European sites that will have potential ecological connectivity with the Proposed Variation. Therefore, all European sites designated for the conservation of cetacean, seal, and otter have not been carried forward for assessment of potential LSE (Table 6-1).

Table 6-1: Screening outcomes for marine mammals

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development)			Can LSE be screened out?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
			Construction	O and M	Decommissioning			
Caithness and Sutherland Peatlands SAC	Otter	1.9 km	No	No	No	**Yes –** owing to the extensive habitat for otter within the SAC, and the low likelihood that otters from the SAC will extensively use the coastal marine environment in the Proposed Variation Area given the 1.9 km intervening distance, there is no connectivity with the Proposed Variation.	**Yes**	**No**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development)			Can LSE be screened out?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
			Construction	O and M	Decommissioning			
Faray and Holm of Faray SAC	Grey seal	74 km	No	No	No	**Yes** – beyond 20 km range of connectivity for breeding grey seals	**Yes**	**No**
Sanday SAC	Harbour seal	76 km	No	No	No	**Yes** – beyond 50 km range of connectivity for breeding harbour seals	**Yes**	**No**
Moray Firth SAC	Bottlenose dolphin	84 km	No	No	No	**Yes** – the rare observations of bottlenose dolphins in the Inner Sound, together with knowledge of their distribution in the Moray Firth and around E Scotland (Cheney *et al.*, 2024), suggests that the Inner	**Yes**	**No**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
						Sound/Pentland Firth is not the preferred habitat of this population and they are unlikely to be regularly present.		
Southern North Sea SAC	Harbour porpoise	427 km	No	No	No	**Yes** – due to this intervening distance, it is considered unlikely that any harbour porpoise associated with the Southern North Sea SAC will occur within the Proposed Variation Area and adjacent waters, owing	**Yes**	**No**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
						to the extensive available habitat found throughout the wider North Sea MU.		
Other European SACs for harbour porpoise (see Table 5-1)	Harbour porpoise	>480 km	No	No	No	**Yes** – due to this intervening distance, it is considered unlikely that any harbour porpoise associated with one of these European SACs will occur within the Proposed Variation Area and adjacent waters, owing to the extensive available habitat found	**Yes**	**No**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
						throughout the wider North Sea MU.		

6.2.11 The Proposed Variation has the potential for connectivity with a total of 77 SPAs for breeding birds, five marine SPAs supporting breeding seabirds and waterbirds, and two marine SPAs supporting non-breeding seabirds and waterbirds. However, for some qualifying features, there is no credible pathway to LSE, based on the sensitivity of species to Proposed Variation activities.

6.2.12 Diving birds which may be exposed to the risk of collision demonstrate the most likely pathway to LSE; however, some species are considered sensitive to disturbance or collision with Proposed Variation vessels, and there may be indirect impacts on species with restricted foraging habitat due to impacts on their prey. All species with the potential for connectivity with the Proposed Variation Area listed in Table 6-2.

6.2.13 For the purposes of the RIAA to support the Proposed Variation, the following assumptions have been made:

- Although the four Phase 1a turbines have been deployed and operational since 2018, whereby any impacts are accounted for in the latest colony counts, the ongoing (operational) risk of collision from the existing Phase 1a array will be assessed alongside the Proposed Variation as part of the overall Project. This is because the ES (2012) did not present collision risk modelling, and therefore whether as part of the Project itself, or an in-combination assessment, the effects of Phase 1a should be assessed.
- The previously approved but unbuilt elements of the MeyGen Phase 1 Project, i.e., Phase 1b (approved in 2017) are no longer considered part of the likely deployment scenario at the Project, and will not be considered either as part of the Project nor as part of an in-combination assessment.
- Other plans and projects where there is LSE in combination with the Proposed Variation will be assessed. However, where projects (e.g. offshore wind farm developments) concluded AEOSI and which have approved plans to compensate for any AEOSI, residual adverse impacts for that project are assumed to be reduced to zero, and therefore will be removed from the cumulative scenario when considering the magnitude of the cumulative adverse effect from the Project in combination with those projects.
- Because the Proposed Array Area lies within the North Caithness Cliffs SPA, the apportioning calculation recommended in NatureScot guidance would involve division by zero, and therefore will not be possible using the described method precisely. The Developer understands that NatureScot is revising apportioning guidance during 2026. In the absence of further guidance provided in response to this HRA Screening Report, a value of one (1.0) is proposed, rather than zero, in the apportioning calculation for North Caithness Cliffs SPA. This emphasises the likelihood that the majority of birds occurring within the Array Area *will* originate from the nearest (overlapping) SPA, whilst also permitting the apportionment of some effects to other SPAs.

Table 6-2: Screening of species which are qualifying features of SPAs with potential for connectivity to the Proposed Variation.

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
Common guillemot	**Yes** – species which dives from sea surface and which may be disturbed by presence of Proposed Variation vessels. Collision with vessels highly unlikely.	**Yes** – diving species which may encounter underwater turbines. Considered to have High vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
Razorbill	**Yes** – species which dives from sea surface and which may be disturbed by presence of Proposed Variation vessels. Collision with vessels highly unlikely.	**Yes** – diving species which may encounter underwater turbines. Considered to have High vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
Atlantic puffin	**Yes** – species which dives from sea surface and which may be disturbed by presence of Proposed Variation vessels. Collision with vessels highly unlikely.	**Yes** – diving species which may encounter underwater turbines. Considered to have Moderate vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
European shag	**Yes** – species which dives from sea surface and which may be disturbed by presence of Proposed Variation vessels. Collision with vessels highly unlikely.	**Yes** – diving species which may encounter underwater turbines. Considered to have High vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
Great cormorant	**Yes** - species which dives from sea surface and which may be disturbed by presence of Proposed Variation vessels. Collision with vessels highly unlikely.	Yes – diving species which may encounter underwater turbines. Considered to have High vulnerability to tidal turbines (Furness *et al.*¸ 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
Northern gannet	No – northern gannet considered to only slightly avoid vessels at short range. Collision with vessels highly improbable.	**Yes** – diving species which may encounter underwater turbines, although gannet is considered to have Low vulnerability to tidal turbines (Furness *et al.*¸ 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
Red-throated diver	**Yes** – red-throated diver is considered of Very High sensitivity to vessel disturbance. Collision with vessels highly improbable.	No – although capable of diving to risk depth, red-throated diver preferred habitat is in shallow bays and coastal waters, and are not considered to be deep divers. It is very unlikely that red-throated diver will forage in the Proposed Variation Area at turbine risk depth. Considered to have Moderate vulnerability to tidal turbines (Furness *et al.*¸2012) but unlikely at water depths in the Proposed Variation Area.	No – due to little or no overlap between the Proposed Variation and red-throated diver foraging habitat, it is not likely to be affected by impacts to prey.	**Yes**
Great northern diver	**Yes** – great northern diver is considered to be sensitive to vessel disturbance, although less so than red-throated diver and	No – although capable of diving to risk depth, great northern diver preferred habitat is in shallow bays and coastal waters, and they	No – due to little or no overlap between the Proposed Variation and great northern diver foraging	**Yes**

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
	black-throated diver. Collision with vessels highly improbable.	are not considered to be deep divers. It is very unlikely that great northern diver will forage in the Proposed Variation Area at turbine risk depth. Considered to have Moderate vulnerability to tidal turbines (Furness *et al.*¸2012) but unlikely at water depths in the Proposed Variation Area.	habitat, it is not likely to be affected by impacts to prey.	
Black-throated diver	**Yes** – black-throated diver is considered of Very High sensitivity to vessel disturbance. Collision with vessels highly improbable.	No – although capable of diving to risk depth, black-thoated diver preferred habitat is in shallow bays and coastal waters, and they are not considered to be deep divers. It is very unlikely that black-throated diver will forage in the Proposed Variation Area at turbine risk depth. Considered to have Moderate vulnerability to tidal turbines (Furness *et al.*¸2012) but unlikely at water depths in the Proposed Variation Area.	No – due to little or no overlap between the Proposed Variation and black-throated diver foraging habitat, it is not likely to be affected by impacts to prey.	**Yes**
Slavonian grebe	**Yes** – non-breeding Slavonian grebe is considered of High sensitivity to vessel disturbance. Collision with vessels highly improbable.	No – although capable of diving to risk depth, Slavonian grebe preferred habitat is in shallow bays and coastal waters, and they are not considered to be deep divers. It is very unlikely that	No – due to little or no overlap between the Proposed Variation and Slavonian grebe foraging habitat, it is not likely to be affected by impacts to prey.	**Yes**

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
		Slavonian grebe will forage in the Proposed Variation Area at turbine risk depth. Considered to have Low vulnerability to tidal turbines (Furness *et al.*¸2012).		
Long-tailed duck	**Yes** - non-breeding long-tailed duck is considered to be moderately disturbed by vessels (Furness *et al.*¸ 2012). Collision with vessels highly improbable.	No – although capable of diving to risk depth, long-tailed duck preferred habitat is in bays and coastal waters, and they are not considered to be deep divers. It is very unlikely that long-tailed duck will forage in the Proposed Variation Area at turbine risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*¸2012).	No – due to little or no overlap between the Proposed Variation and long-tailed duck foraging habitat, it is not likely to be affected by impacts to prey.	**Yes**
Red-breasted merganser	**Yes** - non-breeding red-breasted merganser is considered of Moderate sensitivity to vessel disturbance. Collision with vessels highly improbable.	No – although capable of diving to risk depth, red-breasted merganser preferred habitat is in coastal waters, and they are not considered to be deep divers. It is very unlikely that red-breasted merganser will forage in the Proposed Variation Area at turbine risk depth.	No – due to little or no overlap between the Proposed Variation and red-breasted merganser foraging habitat, it is not likely to be affected by impacts to prey.	**Yes**
Velvet scoter	**Yes** - non-breeding velvet scoter is considered of Moderate sensitivity to vessel disturbance.	No – although capable of diving to risk depth, velvet scoter preferred habitat is in coastal waters, and	No – due to little or no overlap between the Proposed Variation and velvet scoter foraging habitat,	**Yes**

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
	Collision with vessels highly improbable.	they are not considered to be deep divers. It is very unlikely that velvet scoter will forage in the Proposed Variation Area at turbine risk depth.	it is not likely to be affected by impacts to prey.	
Eider	No – highly coastal species which is considered to be low/moderate disturbed by vessels (Furness *et al.*¸2012). Collision with vessels highly unlikely.	No – although capable of diving to risk depth, eider preferred habitat is shallow bays and coastal waters, primarily for benthic invertebrates, and are not considered to be deep divers. It is very unlikely that eider will forage in the Proposed Variation Area at turbine risk depth. Considered to have Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – due to little or no overlap between the Proposed Variation and eider foraging habitat, it is not likely to be affected by impacts to prey.	No – no credible impact pathway
Black-legged kittiwake	No – kittiwake is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*¸ 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
Great black backed gull	No – great black backed gull is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*¸ 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
Herring gull	No – herring gull is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*¸ 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway

Species	Pathway			Species considered further?
	Impacts due to physical presence of vessels, including collision and disturbance	Collisions between diving birds and underwater turbines	Indirect impacts on seabirds due to impacts on their prey	
Great skua	No – great skua is not considered sensitive to vessel disturbance, and risk of collision is low.	No – great skua is not likely to dive to turbine risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
Arctic tern	No – Arctic tern is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species does not dive to risk depth. Considered to have Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
Northern fulmar	No – northern fulmar is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
Manx shearwater	No – Manx shearwater is not considered sensitive to vessel disturbance. Collision with vessels highly unlikely.	No – species is capable of diving to risk depth but is not likely to forage extensively in Inner Sound. Considered to have Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	No – no credible impact pathway
European storm-petrel	**Yes** – European storm-petrel are largely a nocturnal species and can be attracted to vessel lights, leading to collisions.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**
Leach's storm petrel	**Yes** – Leach's storm-petrel are largely a nocturnal species and can be attracted to vessel lights, leading to collisions.	No – species does not dive to risk depth. Considered to have Very Low vulnerability to tidal turbines (Furness *et al.*, 2012).	No – species has large foraging range and therefore has access to alternative foraging habitat.	**Yes**

Table 6-3: Screening outcomes for ornithology

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development)			Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
			Construction	O and M	Decommissioning			
North Caithness Cliffs SPA	Common guillemot; Razorbill; Atlantic puffin; Seabird assemblage	0 (overlapping	Yes	Yes	Yes	No	No	Yes
Hoy SPA	Common guillemot; Atlantic puffin; Seabird assemblage	12.4	Yes	Yes	Yes	No	No	Yes
Scapa Flow SPA	Red-throated diver (breeding); Red-throated diver (non-breeding);	12.4	Yes	Yes	Yes	No	No	Yes

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
	Black-throated diver (non-breeding); Great northern diver (non-breeding); Slavonian grebe (non-breeding); Long-tailed duck (non-breeding); Red-breasted merganser (non-breeding)							
East Caithness Cliffs SPA	Great cormorant; Common guillemot; Razorbill;	30.5	Yes	Yes	Yes	**No**	**No**	**Yes**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
	Seabird assemblage							
Copinsay SPA	Common guillemot; Seabird assemblage	32.5	Yes	Yes	Yes	**No**	**No**	**Yes**
North Orkney SPA	Red-throated diver (breeding); Red-throated diver (non-breeding); Great northern diver (non-breeding); Slavonian grebe (non-breeding); Velvet scoter (non-breeding)	47.0	Yes	Yes	Yes	**No**	**No**	**Yes**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development)			Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
			Construction	O and M	Decommissioning			
Auskerry SPA	European storm-petrel	51.9	Yes	Yes	Yes	**No**	**No**	**Yes**
Marwick Head SPA	Common guillemot; Seabird assemblage	52.2	Yes	Yes	Yes	**No**	**No**	**Yes**
Rousay SPA	Common guillemot; Seabird assemblage	67.5	Yes	Yes	Yes	**No**	**No**	**Yes**
Calf of Eday SPA	Common guillemot; Seabird assemblage	69.3	Yes	Yes	Yes	**No**	**No**	**Yes**
West Westray SPA	Common guillemot; Razorbill; Seabird assemblage	77.1	Yes	Yes	Yes	**No**	**No**	**Yes**
Sule Skerry and Sule Stack SPA	European storm-petrel; Common guillemot;	82.0	Yes	Yes	Yes	**No**	**No**	**Yes**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development) Construction	O and M	Decommissioning	Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
	Atlantic puffin; Seabird assemblage							
Cape Wrath SPA	Razorbill; Atlantic puffin; Seabird assemblage	95.2	Yes	Yes	Yes	**No**	**No**	**Yes**
Troup, Pennan and Lion's Head SPA	Razorbill; Seabird assemblage	117.9	Yes	Yes	Yes	**No**	**No**	**Yes**
Fair Isle SPA	Northern gannet; Common guillemot; Razorbill; Atlantic puffin; Seabird assemblage	122.2	Yes	Yes	Yes	**No**	**No**	**Yes**
Seas off Foula marine SPA	Atlantic puffin	145.8	Yes	Yes	Yes	**No**	**No**	**Yes**

Designated Site	Relevant Feature	Closest Distance between Designated Site and Proposed Variation	Potential for LSE (phase of development)			Can LSE be screened out alone?	Can LSE be screened out in-combination?	Site Screened In for Assessment?
			Construction	O and M	Decommissioning			
North Rona and Sula Sgier SPA	European storm-petrel; Northern gannet; Atlantic puffin; Seabird assemblage	156.2	Yes	Yes	Yes	**No**	**No**	**Yes**
Foula SPA	Atlantic puffin; Seabird assemblage	170.5	Yes	Yes	Yes	**No**	**No**	**Yes**
Mousa SPA	European storm-petrel	183.5	Yes	Yes	Yes	**No**	**No**	**Yes**
Priest Island (Summer Isles) SPA	European storm-petrel	186.5	Yes	Yes	Yes	**No**	**No**	**Yes**
Noss SPA	Northern gannet; Atlantic puffin; Seabird assemblage	198.3	Yes	Yes	Yes	**No**	**No**	**Yes**

7 Conclusion of HRA Screening

7.1.1 Sites with potential for LSE from the Proposed Variation are presented below in Table 7-1 for all receptor groups. No designated sites or receptors were identified for marine and coastal processes, benthic ecology, or marine mammals. Migratory fish and shellfish were not considered under the HRA assessment following NatureScot guidance. These receptor groups have all been screened out on the conclusion of no LSE.

7.1.2 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 ornithology.

7.1.3 In terms of in-combination considerations, the screening of other projects and plans, where it is considered there to be the potential for in-combination effects will be carried out within the AA.

7.1.4 There are no potential residual effects resulting from the proposed development that have not been screened in for further assessment both alone and in-combination.

After this report has been published and a HRA Screening Opinion and EIA Scoping Opinion have been received, consultation will be undertaken prior to the drafting of the RIAA as part of the AA process. During this process, the Proposed Variation 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.

Table 7-1: Summary of European Sites screened in for further assessment

Designated Site	Relevant Feature	Potential for LSE (phase of development)		
		Construction	O and M	Decommissioning
North Caithness Cliffs SPA	Common guillemot; Razorbill; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Hoy SPA	Common guillemot; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Scapa Flow SPA	Red-throated diver (breeding); Red-throated diver (non-breeding); Black-throated diver (non-breeding); Great northern diver (non-breeding); Slavonian grebe (non-breeding); Long-tailed duck (non-breeding); Red-breasted merganser (non-breeding)	Yes	Yes	Yes
East Caithness Cliffs SPA	Great cormorant; Common guillemot; Razorbill; Seabird assemblage	Yes	Yes	Yes
Copinsay SPA	Common guillemot; Seabird assemblage	Yes	Yes	Yes
North Orkney SPA	Red-throated diver (breeding); Red-throated diver (non-breeding); Great northern diver (non-breeding); Slavonian grebe (non-breeding); Velvet scoter (non-breeding)	Yes	Yes	Yes

Designated Site	Relevant Feature	Potential for LSE (phase of development)		
		Construction	O and M	Decommissioning
Auskerry SPA	European storm-petrel	Yes	Yes	Yes
Marwick Head SPA	Common guillemot; Seabird assemblage	Yes	Yes	Yes
Rousay SPA	Common guillemot; Seabird assemblage	Yes	Yes	Yes
Calf of Eday SPA	Common guillemot; Seabird assemblage	Yes	Yes	Yes
West Westray SPA	Common guillemot; Razorbill; Seabird assemblage	Yes	Yes	Yes
Sule Skerry and Sule Stack SPA	European storm-petrel; Common guillemot; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Cape Wrath SPA	Razorbill; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Troup, Pennan and Lion's Head SPA	Razorbill; Seabird assemblage	Yes	Yes	Yes
Fair Isle SPA	Northern gannet; Common guillemot; Razorbill; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Seas off Foula marine SPA	Atlantic puffin	Yes	Yes	Yes
North Rona and Sula Sgeir SPA	European storm-petrel; Northern gannet; Atlantic puffin;	Yes	Yes	Yes

Designated Site	Relevant Feature	Potential for LSE (phase of development)		
		Construction	O and M	Decommissioning
	Seabird assemblage			
Foula SPA	Atlantic puffin; Seabird assemblage	Yes	Yes	Yes
Mousa SPA	European storm-petrel	Yes	Yes	Yes
Priest Island (Summer Isles) SPA	European storm-petrel	Yes	Yes	Yes
Noss SPA	Northern gannet; Atlantic puffin; Seabird assemblage	Yes	Yes	Yes

8 References

Arso Civil, M., Quick, N.J., Cheney, B., Pirotta, E., Thompson, P.M. and Hammond, P.S. (2019). Changing distribution of the east coast of Scotland bottlenose dolphin population and the challenges of area-based management. Aquatic Conservation: Marine and Freshwater Ecosystems, 29, 178-196.

Bailey, H., Hammond, P.S. and Thompson, P.M. (2014.) Modelling harbour seal habitat by combining data from multiple tracking systems. Journal of Experimental Marine Biology and Ecology, 450, 30–39.

Carter, M.I.D., Boehme, L., Cronin, M.A., Duck, C.D., Grecian, W.J., Hastie, G.D., Jessopp, M., Matthiopoulos, J., McConnell, B.J., Miller, D.L., Morris, C.D., Moss, S.E.W., Thompson, D., Thompson, P.M. & Russell, D.J.F. (2022). Sympatric seals, satellite tracking and protected areas: habitat-based distribution estimates for conservation and management. Frontiers in Marine Science, 9, 875869.

Cheney, B.J., Arso Civil, M., Hammond, P.S. and Thompson, P.M. (2024). Site Condition Monitoring of bottlenose dolphins within the Moray Firth Special Area of Conservation 2017-2022. NatureScot Research Report 1360. https://www.nature.scot/doc/naturescot-research-report-1360-site-condition-monitoring-bottlenose-dolphins-within-moray-firth [Accessed: April 2026].

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.

DTA. (2021a). The Habitat Regulations Assessment Handbook (Tyldesley, 2013 (January 2021 Edition)).

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.

Ellis, G., Civil, M.A., Cheney, B., Sinclair, R., Humphrey, O., Hammond, P. and Sparling, C. (2024). Towards improved conservation of the east coast of Scotland bottlenose dolphin population: quantifying and understanding a major range expansion into northeast England. Presentation at 18th Annual Conference of the UK & Ireland Regional Student Chapter of the Society of Marine Mammalogy.

European Commission. (1992). Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

European Commission. (2001). Assessment of plans and projects in relation to Natura 2000 sites - Methodological Guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC.

Furness, R.W., Wade, H.M., and Masden, E.A. (2013). Assessing vulnerability of marine bird populations to offshore wind farms. Journal of environmental Management, 119, 56-66.

Gilles, A., Authier, M., Ramirez-Martinez, N.C., Araújo, H., Blanchard, A., Carlström, J., Eira, C., Dorémus, G., Fernández- Maldonado, C., Geelhoed, S.C.V., Kyhn, L., Laran, S., Nachtsheim, D., Panigada, S., Pigeault, R., Sequeira, M., Sveegaard, S., Taylor, N.L., Owen, K., Saavedra, C., Vázquez-Bonales, J.A., Unger, B., Hammond, P.S. (2023). Estimates of cetacean abundance in European Atlantic waters in summer 2022 from the SCANS-IV aerial and shipboard surveys. Final report published 29 September 2023. 64 pp.

https://dce.au.dk/fileadmin/dce.au.dk/Udgivelser/Eksterne_udgivelser/20230928_SCANS-IV_Report_FINAL.pdf [Accessed: March 2026].

HM Government. (2017). The Conservation of Habitats and Species Regulations 2017.

HM Government. (2019). Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (2019 Regulations).

IAMMWG. (2023). Review of Management Unit boundaries for cetaceans in UK waters (2023). https://data.jncc.gov.uk/data/b48b8332-349f-4358-b080-b4506384f4f7/jncc-report-734.pdf [Accessed 09/03/2026].

JNCC. (2024). Caithness and Sutherland Peatlands SAC (UK0013602). https://sac.jncc.gov.uk/site/UK0013602 [Accessed: March 2026].

JNCC. (2025). Grey seal *(Halichoerus grypus)*- Species S1364. https://sac.jncc.gov.uk/species/S1364/ [Accessed 09/03/2026].

Jones, E.L., Hastie, G.D., Smout, S., Onoufriou, J., Merchant, N.D., Brookes, K.L. and Thompson, D. (2017). Seals and shipping: quantifying population risk and individual exposure to vessel noise. University of St Andrews/Sea Mammal Research Unit. https://www.jstor.org/stable/pdf/45024712.pdf [Accessed: March 2026].

Louis, M., Viricel, A., Lucas, T., Peltier, H., Alfonsi, E., Berrow, S., Brownlow, A., Covelo, P., Dabin, W., Deaville, R., de Stephanis, R., Gally, F., Gauffier, P., Penrose, R., Silva, M.A., Guinet, C. and Simon-Bouhet, B. (2014). Habitat-driven population structure of bottlenose dolphins, Tursiops truncatus, in the North East Atlantic.

MeyGen Ltd. (2011a). Habitats Regulations Appraisal for the MeyGen Tidal Energy Project, Phase 1. MeyGen Ltd.

MeyGen Ltd. (2011b). HRA Screening Report for the MeyGen Tidal Energy Project, Phase 1. MeyGen Ltd.

MMPATF. (2025). Orkney Islands and Pentland Firth IMMA. https://www.marinemammalhabitat.org/factsheets/orkney-isles-and-pentland-firth-imma/#:~:text=The%20harbour%20seal%20population%20also%20breeds%20at%20several,1994%3B%20Arso%20Civil%20et%20al.%2C%202016%20%26%202019%29 [Accessed: March 2026].

NatureScot. (2017). Trend note: Trends of Otters in Scotland. https://web.archive.org/web/20220301112410/https:/www.nature.scot/sites/default/files/2017-09/Trend%20note%20-%20Trends%20of%20Otters%20in%20Scotland.pdf [Accessed: March 2026].

NatureScot. (2022). European Site Casework Guidance: How to consider plans and projects affecting SPA and SAC.

NatureScot. (2023). Guidance Note 3: Guidance to support Offshore Wind applications: Marine Birds - Identifying theoretical connectivity with breeding site Special Protection Areas using breeding season foraging ranges.

NatureScot. (2025a). Guidance Note: The handling of mitigation in Habitats Regulations Appraisal – the People Over Wind CJEU judgement. Edinburgh: NatureScot. https://www.nature.scot/doc/naturescot-guidance-note-handling-mitigation-habitats-regulations-appraisal-people-over-wind-cjeu [Accessed: March 2026].

NatureScot. (2025b). Sanday Special Area of Conservation: Conservation and Management Advice. https://www.nature.scot/sites/default/files/special-area-conservation/8372/conservation-and-management-advice.pdf [Accessed: March 2026].

NatureScot. (2025c). Conservation and management advice for Special Areas of Conservation. https://www.nature.scot/sites/default/files/special-area-conservation/8254/conservation-and-management-advice.pdf [Accessed: March 2026].

NatureScot. (2026). Habitats Regulations Appraisal (HRA). https://www.nature.scot/professional-advice/planning-and-development/environmental-assessment/habitats-regulations-appraisal-hra [Accessed: March 2026].

NBN Gateway. (2025). Bottle-nosed dolphin (*Tursiops truncatus*). https://species.nbnatlas.org/species/NBNSYS0000005179 [Accessed: March 2026].

Quick, N., Arso, M., Cheney, B., Islas, V., Janik, V., Thompson, P.M. & Hammond, P.S. (2014). The east coast of Scotland bottlenose dolphin population: improving understanding of ecology outside the Moray Firth SAC.

Reid, J.B., Evans, P.G.H. & Northridge, S.P. (2003). Atlas of Cetacean distribution in north-west European waters, JNCC, Peterborough, ISBN 1 86107 550 2.

SCOS. (2025). SCOS 2025: Scientific Advice on Matters Related to the Management of Seal Populations. Sea Mammal Research Unit, University of St Andrews. http://www.smru.st-andrews.ac.uk/scos/scos-reports/index.html [Accessed: March 2026].

Scottish Government. (2020). EU Exit: Habitats Regulations in Scotland. https://www.gov.scot/publications/eu-exit-habitats-regulations-scotland-2/ [Accessed: April 2026].

Scottish Government. (2023). National Planning Framework 4. https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/02/national-planning-framework-4/documents/national-planning-framework-4-revised-draft/national-planning-framework-4-revised-draft/govscot%3Adocument/national-planning-framework-4.pdf [Accessed May 2026].

Scottish Government. (2025a). Marine licensing and consenting: offshore renewable energy projects. https://www.gov.scot/publications/marine-licensing-and-consenting-offshore-renewable-energy-projects/pages/licensing-and-consenting-requirements/ [Accessed May 2026].

Scottish Government. (2025b). Updated Scottish Government policy on protecting Ramsar sites. https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2025/07/updated-scottish-government-policy-protecting-ramsar-sites/documents/updated-scottish-government-policy-protecting-ramsar-sites/updated-scottish-government-policy-protecting-ramsar-sites/govscot%3Adocument/updated-scottish-government-policy-protecting-ramsar-sites.pdf. [Accessed May 2026].

SNH (2000). Natura Casework Guidance: Consideration of Proposals affecting SPA and SAC. Guidance Note Series.

Woodward, I., Thaxter, C.B., Owen, E. & Cook, A.S.C.P. (2019). Desk-based revision of seabird foraging ranges used for HRA screening. BTO Research Report 724: British Trust for Ornithology, Thetford.

Vincent, C., Ridoux, V., Fedak, M.A., McConnell, B.J., Sparling, C.E., Leaute, J-P., Jouma'a, J. and Spitz, J. (2016). Foraging behaviour and prey consumption by grey seals (*Halichoerus grypus*)—spatial and trophic overlaps with fisheries in a marine protected area. ICES Journal of Marine Science, 73(10), pp. 2653–2665.

GoBe Consultants Ltd
Suites B2 and C2, Higher Mill
Higher Mill Lane
Buckfastleigh
Devon
TQ11 0EN