Islandmagee Gas Storage Facility Habitat Regulations Assessment

Likely Significant Effects (LSE) Screening Report



LSE Screening Report
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List of Abbreviations

Abbreviation	Definition
CIS	Celtic and Irish Seas
CWSH	Coastal West Scotland and Hebrides
DAERA	Department of Agriculture, Environment and Rural Affairs (NI)
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
HDD	Horizontal Directional Drilling
IAMMWG	Inter-Agency Marine Mammal Working Group
IROPI	Imperative Reasons of Overriding Public Interest
IS	Irish Sea
LSE	Likely Significant Effects
MHWS	Mean High Water Springs
MU	Management Unit
NI	Northern Ireland
PSU	Practical Salinity Units
RIAA	Report to Inform an Appropriate Assessment
SAC	Special Area of Conservation
SCI	Sites of Community Interest
SCOS	Special Committee on Seals
SMU	Seal Management Units
SPAs	Special Protection Area
SWS	South West Scotland
UK	United Kingdom
WS	West Scotland
ZoI	Zone of Influence

1 Introduction

1.1 Overview

Islandmagee Energy Limited (IMEL, previously called Islandmagee Storage Limited (IMSL)) propose to develop a gas storage facility, namely the Islandmagee Gas Storage Facility (IGSF), at Islandmagee in County Antrim, Northern Ireland (NI). This facility is proposed to comprise up to seven caverns within Permian salt beds approximately 1,500 metres (m) below Larne Lough, capable of storing up to a total of up to 500 million standard cubic metres (m^3) of gas. The facility and associated above-ground operating facilities will be located near Ballylumford, in County Antrim. IGSF is comprised of both terrestrial and marine components (Figure 1-1), including:

- Wellpad – to support the drilling rig;
- Sea Water and Brine Pumping Facilities (Leaching Plant);
- Gas Plant Facility – to support the heating, cooling, compression and metering equipment;
- Sea Water Intake Pumping Station;
- Creation of up to seven salt caverns by solution mining, with a combined capacity of up to 500 million standard m^3 of gas,
- Seawater Intake Pipe; and
- Brine Outfall Pipe.

The Department of Environment (NI) granted planning permission for the terrestrial elements of the IGSF in October 2012 (Application No: F/2010/0092/F), which consented the construction of the terrestrial elements of the IGSF, subject to certain conditions. The planning approval does not consent any works beyond the mean low water spring tide mark (MLWS), as these are subject to a separate consenting regime under the Marine and Coastal Access Act 2009.

The marine components of the Project (caverns, seawater intake and brine outfall) are yet to receive consent and will require a Marine Construction Licence, Water Order Consent (WOC) and Abstractions Licence. An Environmental Impact Assessment (EIA) for the marine elements of the IGSF is required to support the new applications for a WOC, an Abstraction Licence and a Marine Construction Licence. Terrestrial elements of the IGSF are excluded from the scope of the proposed EIA on the grounds that they have previously been subject to EIA and are fully consented under the 2012 Planning consent. Thus, where the Project is referred to in this report, this term relates only to the marine elements of the overall facility, i.e. the seawater intake, brine outfall and gas storage caverns beneath Larne Lough. Figure 1-2 illustrates the location of the Marine Application Areas associated with this Project.

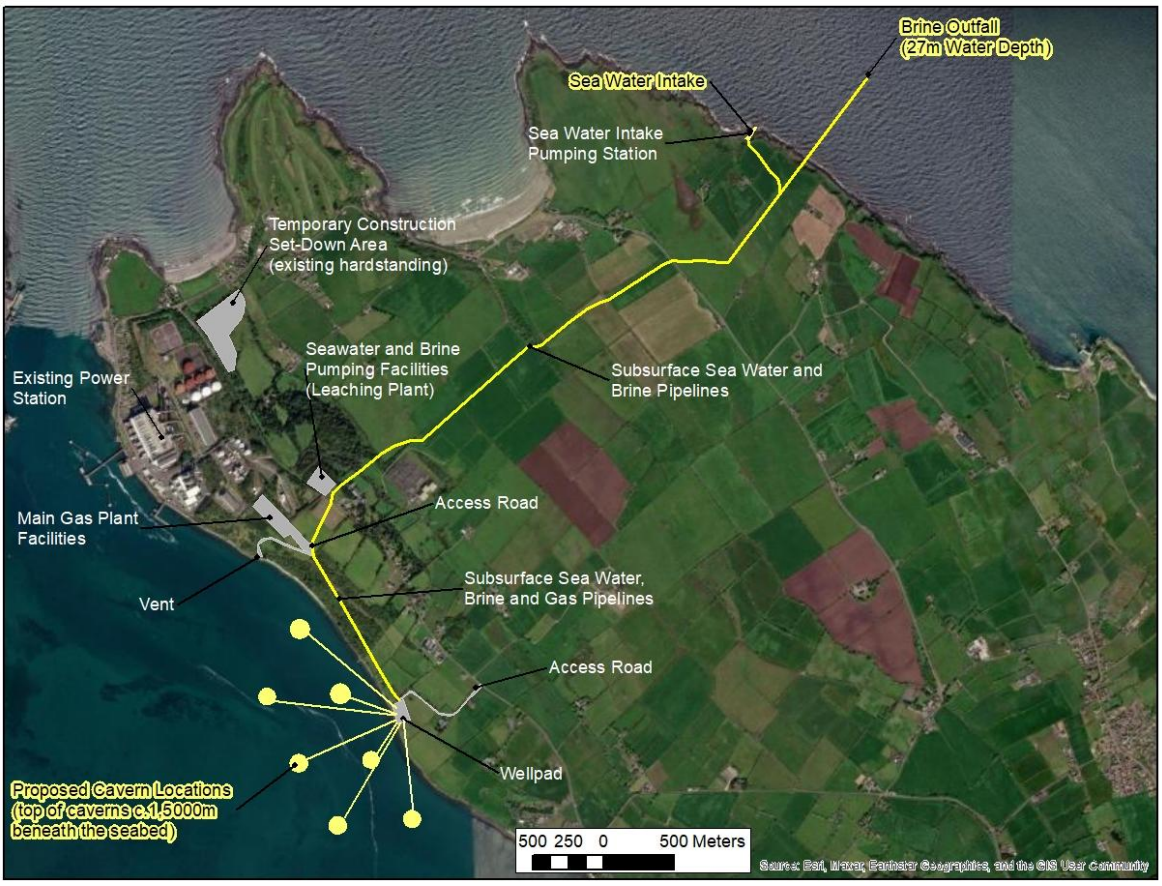


Figure 1-1: IGSF Overview (including terrestrial elements permitted under F/2010/0092/F labelled in white and proposed marine elements associated with the Project labelled in yellow)



Figure 1-2: Location of the Marine Application Areas associated with the Project

The location of the caverns has not been used to determine the study area for LSE screening as the caverns (and any associated activities) are located beneath the seabed. Therefore, there is no pathway of impact between cavern construction/decommissioning (or associated cavern activities) and European Sites or Features; thus, the caverns are not of relevance to this LSE Screening Report. Where distances are provided in this LSE Screening Report, they are given to the infrastructure in the marine environment and not to the caverns, however, the LSE Screening study area covers the area of the caverns.

1.2 Purpose of this Report

This Report has been produced to inform the Habitats Regulations Assessment (HRA) process to support the application for various marine consents required by the Project. This Report comprises the Stage 1: Screening Stage and, therefore, provides information to enable the screening of the Project with respect to its potential to have a Likely Significant Effect (LSE) on any European sites. LSE is deemed as any effect anticipated as a consequence of a project that may potentially affect the conservation objectives of the features for which the European site was designated, excluding effects which are trivial. It is important to note that this is different from a significant effect used in the context of the EIA Directive and related EIA Regulations.

The requirement and process for the consideration of potential impacts of plans and projects on European sites have followed from the adoption of the European Union's (EU) Habitats Directive. In NI waters, the Habitats Directive was initially translated into specific legal obligations by The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), and after the United Kingdom's (UK) exit from the EU on 31 December 2020 (EU-Exit), through the Conservation (Natural Habitats, etc.) (Amendment) (Northern Ireland) (EU Exit) Regulations 2019 (the 'EU Exit Regulations'). These regulations remain in force and continue to apply to all relevant terrestrial and marine areas under NI jurisdiction. This Report refers to the 'Habitats Regulations' as including any changes enacted by the EU Exit Regulations.

The Habitats Regulations require that an HRA must be carried out on all plans and projects that are likely to have significant effects on European sites, including Special Areas of Conservation (SACs), candidate SACs, proposed SACs, Special Protection Areas (SPAs), potential SPAs and Ramsar Sites (listed under the Ramsar Convention on Wetlands of International Importance).

As the IGSF Project is located within the boundaries of the North Channel SAC and in proximity to other marine SACs, an HRA of the implications of the Project on European sites is required. The screening assessment presented in this Report is based on the current understanding of the baseline environment and proposed activities associated with the Project and is based on the Project and site-specific information currently available. Any changes that may arise as a result of Environmental Statement (ES) assessment work, consultee responses to this document and/or refinements to the design of the Project will be reflected in the Stage 2: Report to Inform the Appropriate Assessment (RIAA).

In summary, the purpose of this report is to:

- Identify the relevant European sites which are designated for features which may be sensitive or vulnerable to potential impacts arising from the construction/decommissioning and operation of the Project;

- Examine the features of the relevant European sites and determine which are not considered likely to be at risk of significant effects arising from the Project, either alone or in-combination with other plans or projects, so that they can be eliminated from further consideration within the HRA process;
- Examine the features of the relevant European sites and determine which are considered likely to be at risk of significant effects arising from the Project, or where the risk of significant effects cannot be ruled out, either alone or in-combination with other plans or projects, so that they can be taken forward for appropriate assessment; and
- Examine which of the potential impacts arising from the Project are considered likely to result in LSE to features of European sites and which impacts can be eliminated from consideration in further stages of the HRA.

1.3 Structure of the LSE Screening Report

This report is set out in the following stages:

- Section 2 – Habitat Regulations Process: a summary of the HRA process and legislative context, including implications of the UK's departure from the EU;
- Section 3 – Assessment Methodology: the initial identification of sites and features which may potentially be affected by the Project;
- Section 4 – Stage 1: Screening for Likely Significant Effects: LSE screening tables and the determination of the potential for LSE to arise with regard to the designated features of the European sites under consideration; and
- Section 5 – Summary: a summary of those European sites (and qualifying interest features) which have been identified with potential for LSE.

2 Habitat Regulations Process

2.1 Legislative Context

The 'Habitats Directive' (Council Directive 92/43/EEC), on the conservation of natural habitats and wild fauna and flora, protects habitats and species of European nature conservation importance, along with the Council Directive (2009/147/EC) on the conservation of wild birds (the 'Birds Directive'), the Habitats Directive establishes a network of internationally important sites, designated for their ecological status.

Following the UK's departure from the EU on 31 December 2020, the Habitats Directive (and transposing Habitats Regulations) continue to apply in the UK through the EU Exit Regulations. The HRA process implemented under the Habitats Regulations stays valid (subject to minor amendments as a result of the EU Exit Regulations) and the UK is bound by HRA judgments handed down by The Court of Justice of the European Union before 31 December 2020. This document, therefore, assumes that all relevant HRA-related legislation remains in place and in accordance with the Habitats Regulations that transposed the European requirements for HRA into UK law, as effected by the EU Exit Regulations (2019). The objective of the Habitats Regulations is to conserve, at a favourable conservation status, those habitats and species listed in Annexes I and II of the Habitats Directive. Post-EU-Exit, the Habitats Regulations continue to refer to Annexes I and II of the Habitats Directive, and as such, reference is made to the annexes of the Habitats Directive in this report.

The Habitats Directive established the Europe-wide network of nature conservation areas that are subject to the HRA process. These are internationally important sites, designated for their ecological status. SACs are designated under the Habitats Directive and endorse the protection of flora, fauna and habitats. European sites located within an EU Member State combine to create a Europe-wide network of European sites (the Natura 2000 network) and may be referred to as Natura 2000 Sites. In NI, Ramsar Sites (designated under the Ramsar Convention) are also afforded the same level of protection as fully designated European sites, as a matter of government policy.

As a consequence of the EU-Exit, European sites located within the UK are no longer part of the Natura 2000 network (or Natura Sites). These now form the UK's 'National Site Network' and therefore, hereafter, sites within the UK and the EU are both referred to as European sites. The National Site Network constitutes European sites in the UK that were established under the Nature Directives prior to 31 December 2020 (or proposed to the European Commission before that date) and any new sites designated under the Habitats Regulations under an amended designation process.

2.2 The Process

Regulation 43(1) of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) requires that, where a plan or project is not directly connected with or necessary to the management of a European site, but is likely to have a significant effect on that site (either alone or in-combination with other plans or projects) the competent authority must undertake an appropriate assessment of the implications for the site in view of its conservation objectives. This assessment must be completed before any consent or authorisation for the plan or project can be granted.

Regulation 43(5) of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) provides that a competent authority may only agree to a plan or project after having ascertained that it will not adversely affect the integrity of the European site. Where an appropriate assessment concludes that adverse effects on site integrity cannot be ruled out, Regulation 44(1) states that consent or authorisation may only be granted if there are no alternative solutions, and the plan or project must be carried out for Imperative Reasons of Overriding Public Interest (IROPI).

Furthermore, where the site hosts priority natural habitat types or species, Regulation 44(2) requires that the IROPI must relate either to:

i) human health, public safety, or beneficial consequences of primary importance to the environment, or

ii) ii) other reasons which, in the opinion of the Secretary of State (formerly the European Commission), are considered to be IROPI.

In such cases, the competent authority must also ensure that all necessary compensatory measures are secured to maintain the overall coherence of the network of European sites.

Regulation 43(2) of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) provides that the person applying for consent for a plan or project must supply such information as the competent authority may reasonably require to enable it to undertake an appropriate assessment.

To determine whether an appropriate assessment is required, it must first be ascertained whether or not the plan/project is necessary to, or of value to, or inevitable as part of, the management of the site for its qualifying interests. As this is not the case for the Project, it must therefore be determined whether the plan or project, either alone or in-combination with other plans and projects, is likely to have a significant effect on the European site. This constitutes the LSE screening stage, which removes from the assessment process plans or projects that have no connectivity to a site's qualifying interests or those where it is obvious that the conservation objectives for the site's qualifying interests will not be undermined despite a connection. All other plans or projects, including those where there is reasonable doubt as to the magnitude and nature of their impact, are passed through to the next stage (appropriate assessment).

The Habitats Regulations set out a step-by-step sequence of statutory procedures to be followed, which are designed to test the potential effects of plans and projects on European sites. It must be followed in the correct and particular sequence to comply with the requirements of the Habitats Directive. The guidance on conducting HRAs in Northern Ireland (Department of Agriculture, Environment and Rural Affairs (DAERA), 2025) outlines three stages that assessments of the effects of plans or projects on European sites must follow. These stages are:

- Stage 1: Test of Likely Significant Effects or 'screening';
- Stage 2: Ascertaining the effect upon site integrity by assessing the effect upon conservation objectives, or 'Appropriate Assessment'; and
- Stage 3: Where adverse effects are identified, the plan should be altered until adverse effects are cancelled out fully, or 'mitigation'.

2.3 Process for Identifying European Sites and Features

The criteria adopted for the initial identification of European sites are outlined in Table 2-1. This approach takes account of the location of the European sites in relation to the Project, the anticipated Zone of Influence (ZoI) of potential impacts associated with the Project, and the ecology and distribution of qualifying interest features.

Table 2-1 outlines the order of consideration given to the criteria used for the identification of the list of sites to be taken forward for the determination of LSE. The initial consideration is given to whether there is a physical overlap between the Project and any European sites; all sites with an overlapping boundary are screened in to be taken forward for the determination of LSE. Criterion 2 next identifies any European sites, not already screened in using Criterion 1, where there is an overlap between the Project and the range of any qualifying mobile species of the site. Criterion 3 identifies any European sites, not already screened in by Criterion 1 or 2, where the potential ZoI of the Project overlaps with a European site and/or qualifying interests of the site.

Table 2-1: Criteria for European Site Identification

Order of Consideration	Criteria Used for Initial Identification of Relevant European Sites
1	The site boundaries of the Project overlap with one or more European sites.
2	European or Ramsar site with qualifying mobile features/species (e.g. ornithological qualifying interest features, Annex II marine mammals, migratory fish) whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project.
3	European sites and/or qualifying interest features located within the potential ZoI of impacts associated with the Project (e.g. habitat disturbance, noise and disturbance/displacement).

3 Assessment Methodology

As described in Section 2.2, there are three main stages within the HRA process.

- Stage 1: Screening
  - Identify the European sites and features that have the potential for LSE from the Project alone or in-combination with other plans and projects, and provide information on identified European sites and their conservation objectives; and
  - Identify project activities that have the potential for LSE on identified European sites and their features.
- Stage 2: Appropriate Assessment
  - Where LSE on a European site have been identified in Stage 1, consider whether those effects will adversely affect the integrity of the European site in light of its conservation objectives; and
  - For identified adverse effects on the integrity of the site, provide suitable mitigation that will ensure that no adverse effect on site integrity can be concluded.

If Stage 2 concludes that the Project will have an adverse effect on the integrity of the European site(s), or is inconclusive, then Task 3 of the HRA process is triggered, which includes three tests to be followed in order:

consider alternative solutions;

consider IROPI;

and secure compensatory measures.

This report presents the outcome of the Stage 1, or Screening, part of the process only.

4 Stage 1: Screening for Likely Significant Effects

4.1 Identification of European Sites and Features

This section provides a list of European sites, and their features, for which there is the potential for connectivity with the Project, using the criteria outlined in Table 2-1, and therefore those which should be taken forward for consideration of LSE in Section 4.2.

The receptors which could potentially be affected by the Project and could be the designating interest features of protected sites are considered in turn:

- Annex I habitats (subtidal and coastal up to Mean High Water Springs (MHWS)) – Section 4.1.1;
- Annex II diadromous fish species – Section 4.1.2;
- Annex II marine mammals – Section 4.1.3; and
- Annex II otters – Section 4.1.4.
- Marine ornithology features – Section 4.1.5.

4.1.1 Sites Designated for Annex I Habitats

The following section details the results of the stepwise process to identify the European sites with relevant Annex I habitats to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in Section 2.3.

4.1.1.1 Initial Identification of Sites

Criterion 1 for the identification of European sites to be taken forward for consideration of LSE considers those sites which overlap with the boundaries of the Project. As there are no European sites with relevant qualifying Annex I habitats that overlap with the Project, no sites are considered further on the basis of this criterion.

Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project. This criterion is not relevant for Annex I benthic habitats; therefore, no sites are considered further on this basis.

Criterion 3 considers European sites and/or qualifying interest features which are located within the potential ZoI of impacts associated with the Project. There is the potential for direct/indirect effects on sites designated for Annex I habitats as a result of impacts associated with increased salinity arising from the brine outfall associated with the Project. As such, the extent of these impacts is considered likely to extend beyond the immediate vicinity of the Sub Surface Brine Outfall End Point. For LSE screening, a precautionary approach has been adopted, and a buffer of 10km has been used based on professional judgement. This buffer is considered to be sufficiently precautionary to capture all sites likely to be in the ZoI from indirect effects associated with the Project activities. The closest designated site with benthic qualifying interest features is The Maidens SAC, which is located 1km from the Project, as seen in Figure 4-1.

The Maidens SAC is the only European Site located within the 10km buffer and thus is the only SAC taken forward for the determination of LSE upon Annex I habitats in this report.

4.1.2 Sites Designated for Annex II Diadromous Fish

The following section details the results of the stepwise process to identify the European sites with relevant Annex II diadromous fish species to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in Section 2.3.

4.1.2.1 Initial Identification of Sites

Criterion 1 considers European sites which overlap with the boundaries of the Project. As there are no European sites with Annex II diadromous fish species as qualifying interest features which overlap with the Project, no sites are screened for further consideration for diadromous fish on the basis of this criterion.

Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project. Annex II diadromous fish species are mobile and utilise both freshwater and marine environments throughout their life cycles. Therefore, there is the potential for activities associated with the construction/decommissioning and operation of the Project to result in impacts on these qualifying interest features at a distance from the European sites. A precautionary approach to the identification of relevant sites has been adopted in order to capture all sites with the potential for connectivity with the Project. On this basis, it has been considered that sites with Annex II diadromous fish as qualifying interest features that are located within a 100km marine route buffer of the Project could potentially be affected and must, therefore, be considered. This has been based on professional judgement. No European sites have been identified based on this criterion.

Criterion 3 considers European sites and/or qualifying interest features that are located within the potential ZoI of impacts associated with the Project. Given the large buffer proposed for Criterion 2 above (100km), the ZoI for key impacts upon diadromous fish are anticipated to be well within this range. No additional European sites with Annex II diadromous fish as qualifying interest features are therefore considered further on the basis of Criterion 3.

The initial site identification process has not identified any European sites with Annex II diadromous fish as a qualifying interest feature to be taken forward for the determination of LSE in this report.

4.1.3 Sites Designated for Annex II Marine Mammal

The following section details the results of the stepwise process to identify the European sites with relevant Annex II marine mammals to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in Section 2.3 and Table 2-1.

Annex II marine mammal species likely to occur in the vicinity of the Project include:

- Harbour porpoise (*Phocoena phocoena)*;
- Bottlenose dolphin (*Tursiops truncatus)*;
- Grey seal (*Halichoerus grypus)*; and
- Harbour seal (*Phoca vitulina)*.

4.1.3.1 Initial Identification of European sites

Criterion 1 considers European sites which overlap with the boundaries of the Project. On the basis of this criterion, a single site, the North Channel SAC, designated for harbour porpoise, has been identified (location shown in Figure 4-1) and taken forward for detailed determination of LSE in Section 4.2.3 of this report.

Criterion 2 considers European sites with qualifying mobile species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project. Annex II marine mammal species are highly mobile and forage over wide areas. Therefore, there is the potential for activities associated with the construction/decommissioning and operation of the Project to result in impacts on Annex II marine mammal qualifying features at a distance from the European sites. A precautionary approach to the identification of relevant sites has been adopted in order to capture all sites with the potential for connectivity with the Project. The following paragraphs present the relevant ranges for different Annex II marine mammal features.



Figure 4-1: Location of Designated Sites with Marine Mammal features in relation to the Project[1]

[1] Figure from Chapter 10 (Marine Mammals) of the associated 'Islandmagee Gas Storage Facility Marine Consents Application - EIA Scoping Report'

Cetaceans

The identification of relevant European Sites designated for cetaceans is informed by the marine mammal Management Units (MUs) for harbour porpoise and bottlenose dolphin, which are defined by the Inter Agency Marine Mammal Working Group (IAMMWG, 2022). The identification of relevant sites designated for Annex II cetaceans (i.e. harbour porpoise and bottlenose dolphin) was undertaken using a precautionary approach in order to capture all sites with potential connectivity to the Project under Criterion 2.

For harbour porpoise, the Project is located within the Celtic and Irish Seas (CIS) MU, and in proximity to the West Scotland (WS) MU (Figure 4-2), and therefore any European Sites with harbour porpoise as a qualifying interest feature within these two MU's have been taken forward for the determination of LSE. Ten European sites designated for harbour porpoise were identified to be taken forward for the determination of LSE (Table 4-1). The locations of these European sites are displayed in Figure 4-1.

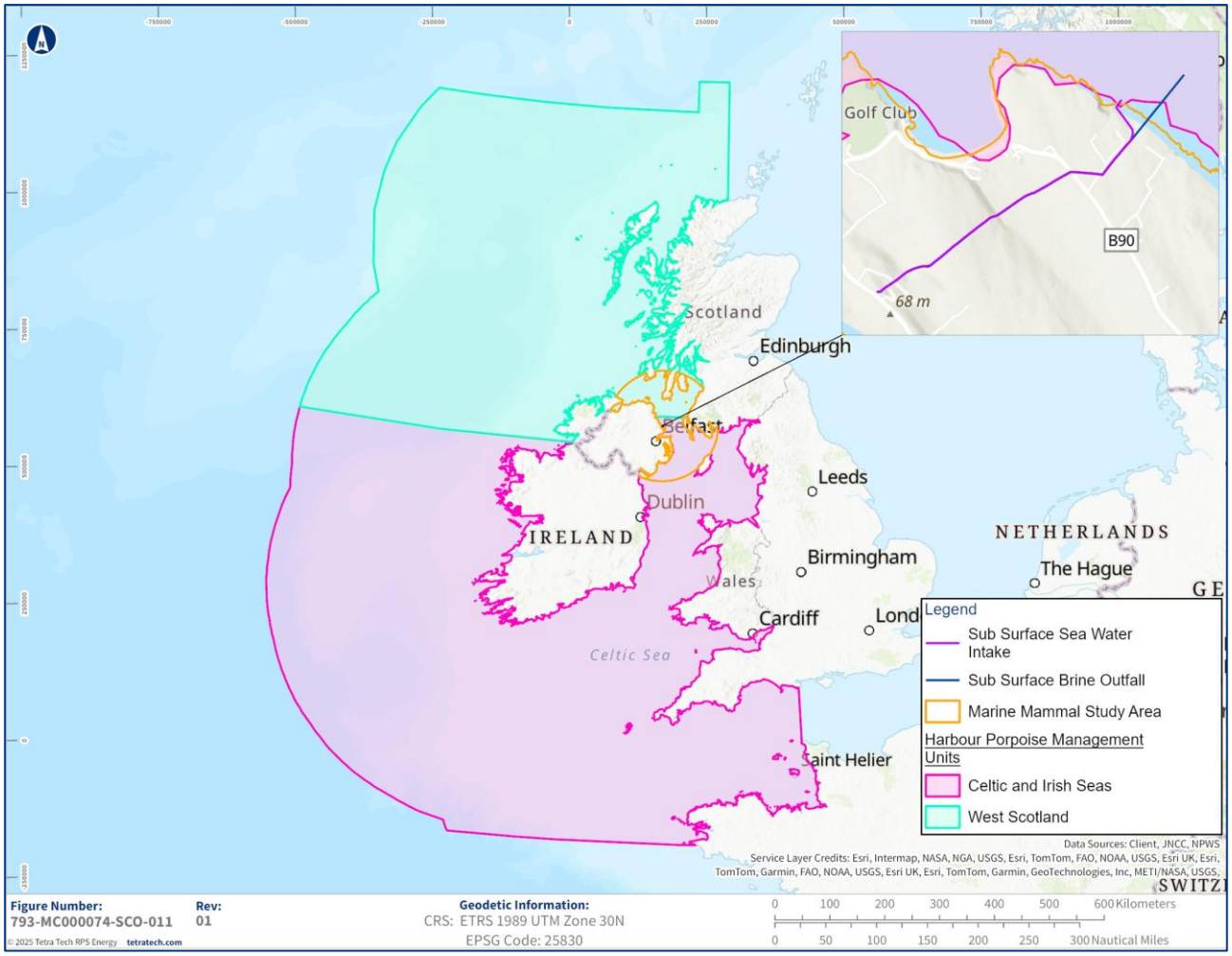


Figure 4-2: Location of Harbour Porpoise Management Units in relation to the Project[1]

The CIS MU extends to the west coast of France, which covers 16 French designated Sites of Community Interest (SCIs); the following SCIs were considered, due to their location within the CIS MU:

- Mers Celtiques - Talus du golfe de Gascogne SCI;
- Ouessant-Molène SCI;

- Côte de Granit rose-Sept-Iles SCI;
- Anse de Goulven, dunes de Keremma SCI;
- Tregor Goëlo SCI;
- Côtes de Crozon SCI;
- Chaussée de Sein SCI;
- Cap Sizun SCI;
- Récifs du talus du golfe de Gascogne SCI;
- Anse de Vauville SCI;
- Cap d'Erquy-Cap Fréhel SCI;
- Baie de Saint-Brieuc - Est SCI;
- Banc et récifs de Surtainville SCI;
- Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard SCI;
- Estuaire de la Rance SCI; and
- Baie du Mont Saint Michel SCI.

The closest French SCI is located approximately 646km from the Project. As such, there is no potential for the Project to result in impacts on qualifying Annex II marine mammal features of these sites. Therefore, these sites have not been taken forward to a detailed determination of LSE.

For bottlenose dolphin, the Project is located within the Irish Sea (IS) MU, and in proximity to the Coastal West Scotland and Hebrides (CWSH) MU (Figure 4-3), and therefore any European Site with bottlenose dolphin as a qualifying interest feature within these two MU's has been taken forward for determination of LSE. Two European sites designated for bottlenose dolphin were identified to be taken forward for determination of LSE (Table 4-1).

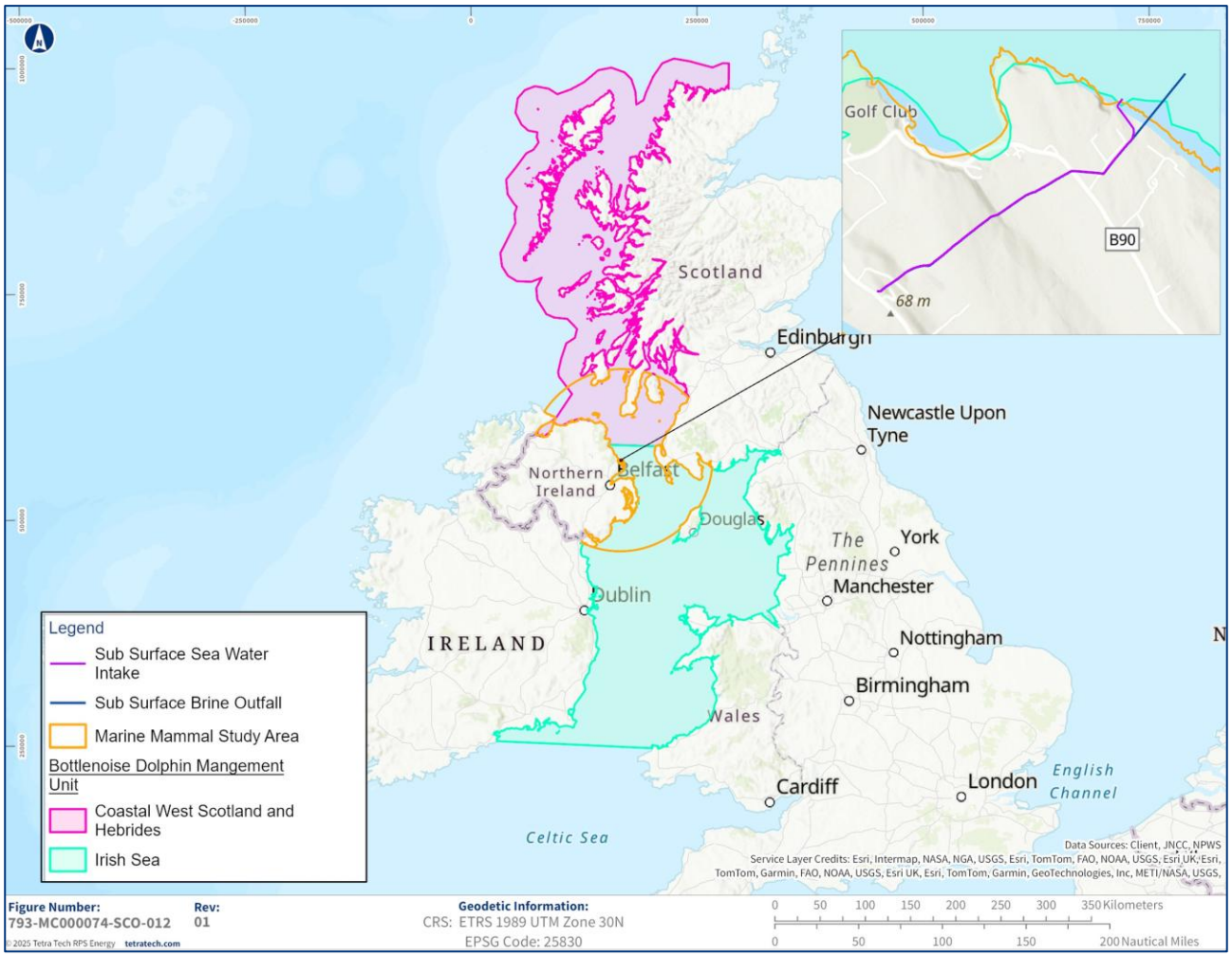


Figure 4-3: Location of Bottlenose Dolphin Management Units in relation to the Project[1]

Pinnipeds

The Seal Management Units (SMUs) for grey seal and harbour seal are defined by the Special Committee on Seals (SCOS, 2024). The Project is located within the Northern Ireland (NI) SMU, as illustrated in Figure 4-4.

Grey seal typical foraging ranges are up to 100km from their haul out sites, although individuals have been recorded further than 100km (SCOS, 2022). Therefore, for the initial identification of sites for grey seal, SACs within the NI SMU, South West Scotland (SWS) SMU, and WS SMU have been taken forward for the determination of LSE. On this basis, three European Sites were identified to be taken forward for the determination of LSE (see Table 4-1).

Harbour seals are generally considered to have greater site fidelity than grey seals, with few long-range movements between distant haul-out sites (SCOS, 2022). Foraging ranges vary substantially both regionally and within sites. Some harbour seals have been observed to forage more than 100km from their nearest haul out sites, while most foraging trips remain close inshore within an average 50km of haul out sites (SCOS, 2022). The Project is located within the NI SMU, therefore, SACs within this SMU have been taken forward for the determination of LSE. On this basis, two European Sites were identified to be taken forward for the determination of LSE (see Table 4-1).

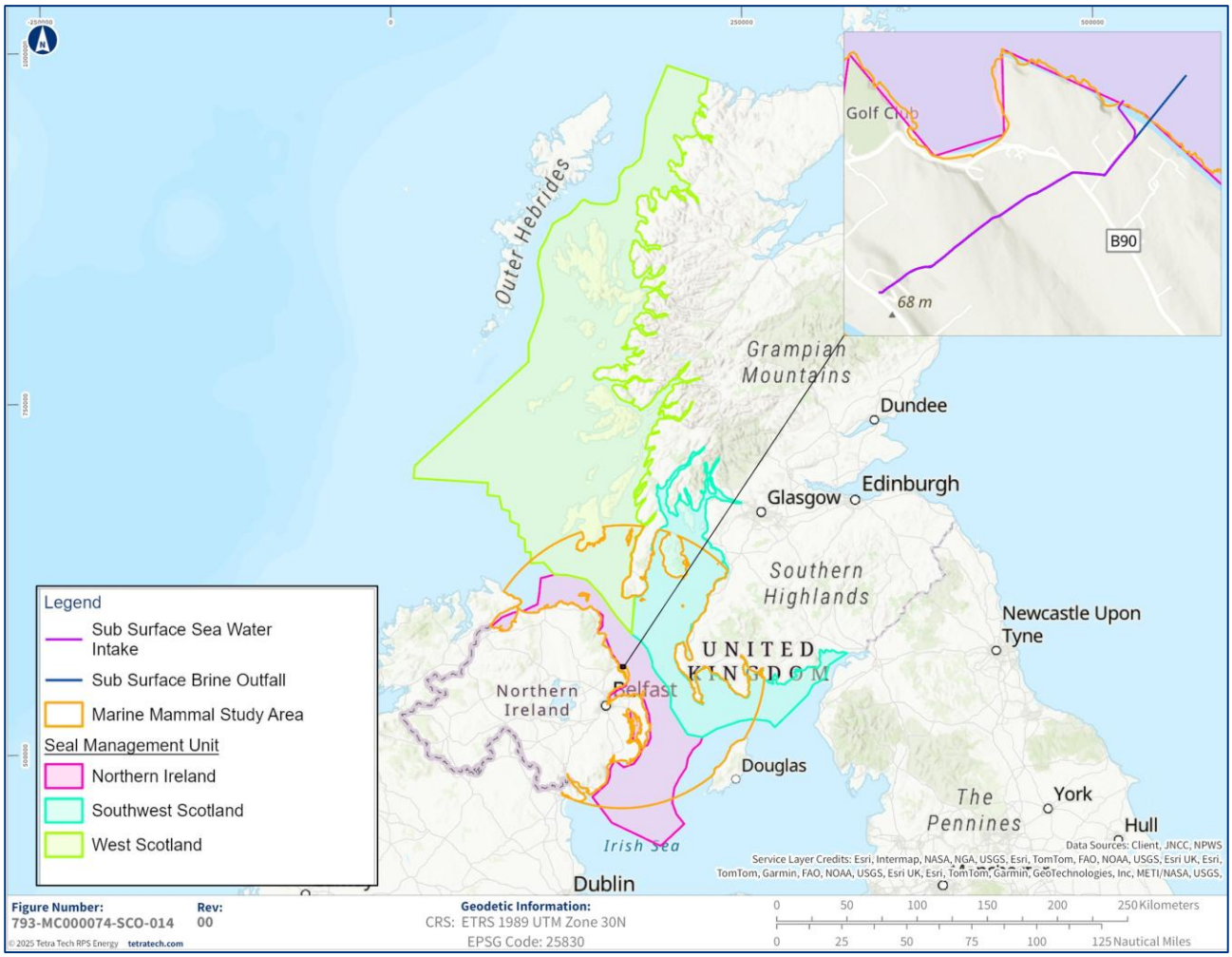


Figure 4-4: Location of Seal Management Units in relation to the Project[1]

Criterion 3 considers European sites and/or qualifying interest features which are located within the potential ZoI of impacts associated with the Project (e.g. noise disturbance). Given the large buffers proposed above for both cetaceans and pinnipeds in Criterion 2, the ZoI for key impacts to marine mammals are anticipated to be well within this area. No additional European sites with Annex II marine mammal species as qualifying interest features, beyond those already identified for Criterion 2, are therefore considered further on the basis of this criterion.

Table 4-1: European sites designated for Annex II marine mammals taken forward for the determination of LSE

Site Name	Site Code	Relevant Annex II Marine Mammal Qualifying Features	Distance from Brine Outfall End Point (km)	Distance from Seawater Intake End Point (km)
North Channel SAC	UK0030399	Harbour porpoise	0.0	0.0
The Maidens SAC	UK0030384	Grey seal	1.0	1.4
Strangford Lough SAC	UK0016618	Harbour seal	63.4	63.7
Skerries and Causeway SAC	UK0030383	Harbour porpoise	69.7	69.7
Murlough SAC	UK0016612	Harbour seal	80.3	80.5
Inner Hebrides and the Minches SAC	UK0030393	Harbour porpoise	96.9	97.0
North Anglesey Marine / Gogledd Môn Forol SAC	UK0030398	Harbour porpoise	118.0	118.5
Rockabill to Dalkey Island SAC	003000	Harbour porpoise	150.1	150.4
Treshnish Isles SAC	UK0030289	Grey seal	192.5	192.5
Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC	UK0013117	Bottlenose dolphin Grey seal*	223.0	223.3
West Wales Marine / Gorllewin Cymru Forol SAC	UK0030397	Harbour porpoise	223.0	223.3
Cardigan Bay/ Bae Ceredigion SAC	UK0012712	Bottlenose dolphin Grey seal*	288.5	288.8
Monach Islands SAC	UK0012694	Grey seal	323.3	323.2
Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC	UK0030396	Harbour porpoise	389.0	389.3
Roaringwater Bay and Islands SAC	000101	Harbour porpoise Grey seal*	535.4	535.7
Blasket Islands SAC	002172	Harbour porpoise Grey seal*	653.0	653.2

* These European sites are located outside of the ZoI identified for the identification of grey seal sites (within the NI SMU, SWS SMU, and WS SMU). As such, the grey seal qualifying interest feature of these sites has not been taken forward to determination of LSE.

4.1.4 Sites Designated for Annex II Otter

The following section details the results of the stepwise process to identify the European sites with relevant Annex II otters to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in Section 2.3.

4.1.4.1 Initial Identification of Sites

Criterion 1 considers European sites which overlap with the boundaries of the Project. As there are no European sites with Annex II otter as qualifying interest features which overlap with the Project, no sites have been taken forward for detailed determination of LSE for otter, on the basis of this criterion.

Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project. Annex II otters are mobile and forage over certain areas away from the coast. Therefore, there is the potential for activities associated with the construction/decommissioning and operation of the Project to result in impacts on these qualifying interest features at a distance from the European sites. The size of an otter's home range depends on the quality of the habitat and food supply (Kruuk, 1995), but males can range linearly along rivers for 35km (UK Government, 2022). A precautionary approach to the identification of relevant sites has been adopted in order to capture all sites with the potential for connectivity with the Project. On this basis, it has been considered that sites with Annex II otters as qualifying features, which are located within a 20km buffer of the Project could potentially be affected. This precautionary 20km buffer was adopted as otter ranges along the coast are a lot smaller (3-4km) than the male river range of 35km, with distribution depending on a nearby freshwater source (UK Wild Otter Trust, no date). No SACs were identified within this buffer; therefore, based on professional judgement, no sites have been taken forward for detailed determination of LSE, on the basis of this criterion.

Criterion 3 considers European sites and/or qualifying interest features which are located within the potential ZoI of impacts associated with the Project (e.g. habitat loss/disturbance). Given the large buffer proposed for criterion 2 above (20km), the ZoI for key impacts to mobile otters (i.e. temporary disturbance) are anticipated to be well within this range. No additional European sites with Annex II otters as qualifying features are therefore considered further on the basis of Criterion 3.

The initial site identification process has not identified any European sites with Annex II otter as a qualifying interest feature to be taken forward for the determination of LSE in this report.

4.1.5 Sites Designated for Marine Ornithology Features

The following section details the results of the stepwise process to identify the European sites with relevant ornithology qualifying interest features to be taken forward for detailed determination of LSE based on the methodology and criteria outlined in Section 2.3.

4.1.5.1 Initial Identification of Sites

Criterion 1 considers European sites which overlap with the boundaries of the Project. On the basis of this criterion, no sites were identified as the Project does not sit within any European site.

Criterion 2 considers European sites with qualifying mobile features/species whose range (e.g. foraging, migratory, overwintering, breeding or natural habitat range) overlaps with the Project. On the basis of this Criterion, one site was identified (Table 4-2) and taken forward for detailed determination of LSE in Section 4.2.4 of this report: Larne Lough SPA[2].

Criterion 3 considers European sites and/or qualifying interest features that are located within the potential ZoI of impacts associated with the Project. Birds are highly mobile species which can forage and migrate over large areas. Birds present in intertidal and offshore waters, and potentially affected by the Project, will be predominantly seabirds (defined for this report as auks (puffin, guillemot and razorbill), terns, gannets, skuas, shearwaters, petrels, gulls and divers), and waterbirds (defined for this report as waders, ducks, geese, swans, grebes and cormorants). These species have the potential to be present in the vicinity of the Project during the breeding and non-breeding seasons (including the spring and autumn passage periods). Many bird species are known to switch roost, breeding or foraging sites dependent upon local resource availability. However, due to the temporary and localised nature of the construction/decommissioning and operation of the Project, and the comparatively large foraging ranges of seabirds and waterbirds, it is unlikely that the Project will cause LSE on the qualifying ornithological receptors of European sites outside of those identified based on Criterion 2. Therefore, no European sites have been identified based on this Criterion, based on professional judgement.

[2] Since 2015, the Larne Lough SPA has subsumed the previous Swan Island SPA, incorporating it fully within its boundaries.

Table 4-2: European sites designated for ornithological features screened into the HRA

European designated site name (EU site code)	Site area (ha)	Distance from the Project	SPA qualifying species and status at last round of condition monitoring	Foraging range (km)
Larne Lough SPA (UK9020042)[2]	395.94	60m from the nearest cavern location, and 300m from the nearest intake/outfall	Sandwich tern – 413 breeding pairs (5-year mean 2010-2014), 11.2% of Irish population	34.3 ± 23.2*
			Common tern *Sterna Hirundo* – 295 breeding pairs (5-year mean 2010-2014), 7% of Irish population	18.0 ± 8.9*
			Roseate tern *Sterna dougallii* – 1 breeding pair (5-year mean 2010-2014), <1% of Irish population	12.6 ± 10.6*
			Pale-bellied brent goose *Branta bernicla hrota* – 358 non-breeding individuals (5-year peak mean 2008/09-2012/13), 0.9% of international biogeographical population	53 ± 23.4**
			Mediterranean gull *Ichthyaetus melanocephalus* – 3 breeding pairs (5-year mean 2010-2014), 10% of Irish population (assessed against 2014 population estimate)	20*, ***
*** Woodward et al. (2019) – mean maximum foraging range ± 1 standard deviation** ****Klausen et al. (2013) – mean maximum foraging range ± 1 standard deviation** *****No SD available for the mean maximum value**				

4.2 Determination of Likely Significant Effects

The initial screening process, documented in Section 4.1, generated a list of European Sites and qualifying interest features for further determination of LSE as a result of the Project. This section of the LSE screening process, therefore, documents the determination of LSE for those European sites which were taken forward in Section 4.1 for further consideration.

4.2.1 Methodology

The assessment of LSE in the following sections is presented as a table setting out whether no LSE can be concluded for the relevant features of the European sites identified in Section 4.1.

The approach adopted for this LSE Screening Report focuses on the qualifying interest features for which there is considered to be a potential for impact as a result of the Project. Whilst only these qualifying interest

features have been screened in for further consideration, it is acknowledged that the competent authority must undertake the LSE screening, and any subsequent Appropriate Assessment, at the site level and not for individual qualifying interest features.

The following key is applicable to the table presented in the subsequent section:

✓ - Potential for an LSE/ LSE cannot be ruled out

× – No potential for an LSE

C = Construction/decommissioning

O = Operation

Given that no sites were identified in the initial screening process (Section 4.1) to be taken forward for determination of LSE for Annex II diadromous fish (Section 4.1.2) and Annex II otters (Section 4.1.4), the Sections below refer only to Annex I habitats (Section 4.1.1), Annex II marine mammals (Section 4.1.3) and marine ornithology features (Section 4.1.5).

4.2.2 Assessment of LSE for Annex I Habitats

This section summarises the assessment undertaken to conclude whether there is a potential for LSE as a result of the Project on The Maidens SAC which is designated for Annex I habitats. The pathways for LSE are defined as the potential impacts and effects which could arise from the construction/decommissioning and operation of the Project. The impacts considered to have a potential pathway to LSE are:

- Effects on benthic receptors (Benthic Subtidal Ecology) associated with the discharge of brine during operation of the outfall (construction/decommissioning phase[3]);
- Temporary habitat loss/disturbance (Receptor: Benthic Subtidal Ecology) (construction/ decommissioning phase);
- Long-term habitat loss for benthic habitats (Receptor: Benthic Subtidal Ecology) (construction/ decommissioning and operation phase);
- Introduction and colonisation of hard structures. (Receptor: Benthic Subtidal Ecology) (construction and operation phase); and
- Effect of heat from brine discharge (Receptor: Benthic Subtidal Ecology) (construction/ decommissioning phase).

As The Maidens SAC does not overlap with the Project, there is no impact pathway as a result of temporary or long-term habitat loss, disturbance, or the introduction and colonisation of hard structures. Therefore, only the following subset of impacts will be assessed below:

[3] It is not envisaged that the outfall will be required for decommissioning; however, it would be available should a cavern discharge be required due to a change in decommissioning best practice for the caverns. Is it assumed that brine discharge will occur during the decommissioning phase of the Project as a worst-case scenario.

- Effects on benthic receptors (Benthic Subtidal Ecology) associated with the discharge of brine during operation of the outfall (construction/decommissioning phase[3]); and
- Effect of heat from brine discharge (construction/decommissioning phase).

These are consistent with impacts that have been scoped in within Chapter 8 (Benthic Subtidal and Intertidal Ecology) of the 'Islandmagee Gas Storage Facility Marine Consents Application - EIA Scoping Report'.

4.2.2.1 Effects on benthic receptors (Benthic Subtidal Ecology) associated with the discharge of brine during operation of the outfall (construction/decommissioning phase[3])

During the cavern formation, wells will be drilled from the onshore wellsite at Ballydown, and the caverns will be sequentially formed using seawater drawn from the seawater intake at Dundressan/Castle Robin, and the resulting brine will be discharged. The caverns will be surveyed during the lifetime of the Project although based on the FEED Design, future leaching is unlikely to be required; thus although the intake and outfall are to remain in place on the seabed, they will not be operational during the operation phase. Instead, they are likely to be capped (the active heads/diffuser valves removed and replaced with blank plates) after the caverns are created. If leaching to maintain cavern shape is required in the future, then Islandmagee Energy Limited will need to apply for new abstraction licences and Water Order Consents at that time, which will involve further environmental assessment.

Brine discharge during cavern construction is anticipated to cause localised increases in salinity, with levels ranging between 37.6 and 50.5 Practical Salinity Units (PSU) (RPS, 2019a). Salinity levels exceeding 40PSU (approximately 5.8PSU above background) are predicted to extend only 10–15m from the outfall location (RPS, 2019a), potentially affecting osmoregulation in subtidal benthic fauna.

The Maidens SAC is located 1km from the brine outfall, and it is therefore considered that, due to the distance from the Project, and the rapid dispersion of brine discharge, there will be no impact upon the Annex I Habitats within the Maidens SAC. Therefore, this potential impact has not been carried forward to the determination of LSE.

4.2.2.2 Effect of heat from brine discharge on Benthic Subtidal Ecology (construction/decommissioning phase).

The brine discharged during the construction/decommissioning phase of the Project will have an elevated temperature, approximately 2°C above ambient. This discharge is expected to persist for approximately four years for the cavern construction. This localised thermal enrichment may influence the benthic ecology at the seabed during the construction phase of the Project.

The Maidens SAC is located 1km from the brine outfall, and it is therefore considered that due to the distance from the Project, and the rapid dispersion of the brine discharge, there will be no impact upon the Annex I Habitats within the Maidens SAC. Therefore, this potential impact has not been carried forward to the determination of LSE.

4.2.3 Assessment of LSE for Annex II Marine Mammals

This section summarises the assessment undertaken to conclude whether there is a potential for LSE as a result of the Project on any SACs designated for Annex II marine mammals, as listed in Section 4.1.3. The pathways for LSE are defined as the potential impacts and effects which could arise from the construction/decommissioning and operation of the Project. The impacts considered to have a potential pathway to LSE include:

- Effects on marine mammals associated with cavern construction/decommissioning and operation (construction/decommissioning and operation phase);
- Underwater noise emissions from the construction/decommissioning and operation of the intake and outfall (construction/decommissioning phase);
- Effects on marine mammal receptors associated with the discharge of brine during operation of the outfall (construction/decommissioning phase[3]);
- Effects on marine mammal receptors from entrainment and impingement associated with the operation of the seawater intake (construction/decommissioning phase);
- Increased underwater noise from vessels (construction/decommissioning and operation phases);
- Changes to prey availability (construction/decommissioning phase);
- Disturbance to Annex II seals at haul-out sites (construction/decommissioning phase);
- Increased vessel activity, which may result in collision risk (construction/decommissioning and operation phases);
- Increases in Suspended Sediment Concentrations (SSCs) and associated sediment deposition (construction/decommissioning phase); and
- Accidental pollution (construction/decommissioning and operation phases).

These are consistent with the impacts scoped in Chapter 10 (Marine Mammals) of the 'Islandmagee Gas Storage Facility Marine Consents Application - EIA Scoping Report'.

4.2.3.1 Effects on marine mammals associated with cavern construction/decommissioning and operation (construction/decommissioning and operation phase)

Any underwater noise levels associated with the construction/decommissioning and operation of the caverns (In-sediment or underground drilling) are sub-seabed surface will be attenuated by the sediment. The level of underwater noise is not considered to be of concern for marine mammal receptors. As such, there is no potential effect on marine mammal designated features of European sites and no pathway to LSE. Therefore, this potential impact has not been carried forward to the determination of LSE in Table 4-3.

4.2.3.2 Underwater noise emissions from construction/decommissioning of intake and outfall (construction/decommissioning phase)

The main source of noise during the construction/decommissioning phase will come from the construction/decommissioning of the seawater intake and the brine outfall pipes on the seabed. The construction/decommissioning of these assets requires the use of heavy machinery. Tunnelling, excavation and drilling activities (including Horizontal Directional Drilling (HDD)) on/below the seabed will represent worst-case noise events during construction. Any other construction/decommissioning activities will be of short duration and have a lower impact in terms of underwater noise.

The construction of the intake and outfall will be undertaken over an estimated 6-month period. The nature of the construction/decommissioning activities means the type of noise generated will be non-impulsive noise and confined to a geographically small area (i.e. the immediate vicinity of the construction/decommissioning activities). The propagation of construction/decommissioning noise in the water was estimated using an underwater noise model, the results of which were used to estimate the likelihood of effects on marine mammals (see Annex C of RPS, 2019a and RPS 2019b). Drilling and tunnelling are only part of the construction activity associated with the intake and outfall and will operate at full noise output for less than half of the overall construction time (3 months).

The tunnel machine will be located below the seabed and thus will not contribute significantly to underwater noise levels. The worst-case underwater noise emission will be when the tunnel reception pit is being excavated; the excavation of the pit and recovery of the tunnel machine are estimated to take 18 days, and worst-case noise levels will be limited to a fraction of this time. Underwater noise emissions will also occur during the final stages of HDD punch-out at the seabed for the outfall.

During construction/decommissioning of the caverns, there will be operational noise from pumps and infrastructure; however, this will be attenuated through the pipeline and diffuser systems, resulting in noise levels that are close to baseline and below those arising from ferry traffic (RPS, 2019).

The potential effects of construction noise on Annex II marine mammals include auditory injury and disturbance. This includes all cetaceans and pinnipeds known to be sensitive to underwater noise. As such, this impact has been taken forward to the determination of LSE in Table 4-3.

There is no significant underwater noise generated during the operational phase of the Project. Consequently, no impact receptor pathway exists for Annex II marine mammals during operation, and this is not considered in the determination of LSE.

4.2.3.3 Effects on marine mammal receptors associated with the discharge of brine during operation of the outfall (construction/decommissioning phase[3])

Marine mammals are osmoregulators, meaning they actively maintain internal salinity and water balance despite external salinity changes. However, marine mammals may avoid hypersaline areas; therefore, the main potential direct effect on marine mammals is avoidance behaviour) whereby the animal may move away from the area affected by the brine discharge. There is also the potential for an indirect impact on marine

mammals due to changes in prey availability (e.g. due to changes in prey abundance or distribution; see Section 4.2.3.6).

The Brine Dispersion Modelling Report produced for the 2019 Marine Environmental Conditions Update (RPS, 2019a) showed that the discharge of up to 1,000m^3/hour of saturated brine via the proposed outfall and diffuser will have minimal impact on salinity levels beyond the immediate vicinity of the outfall. Salinity increases of more than 0.5PSU above background are not anticipated to occur more than a few hundred metres from the diffuser and salinities in excess of 36PSU are not predicted to occur more than 100m from the diffuser. Since these values are within the normal variations to salinity experienced in the North Channel, overlapping with the Project, it is unlikely this impact will pose any adverse effects to Annex II marine mammal receptors. Further, the brine outflow will tend to sink towards the seabed due to its relatively higher density. This means that even within the vicinity of the outflow pipe, much of the water column above will only experience minor increases in salinity.

However, following stakeholder consultation, concerns were raised on the potential for brine discharge to impact movements of marine mammal receptors through the North Channel (e.g. through avoidance behaviour or due to changes in prey availability). As such, on a precautionary basis, this impact has been taken forward to the determination of LSE in Table 4-3.

Salinity effects for the operation phase are not considered in the determination of LSE, as no brine is discharged during this period, only during the construction/decommissioning phase. Therefore, there is no pathway for salinity-related impacts on Annex II marine mammal receptors during operation.

4.2.3.4 Effects on marine mammal receptors from entrainment and impingement associated with the operation of the intake (construction/decommissioning phase)

The intake structure is not operational during the operation phase; therefore, as there is no impact pathway, this impact has not been carried forward to the determination of LSE for the operation phase.

During the construction phase, wells will be drilled from an onshore wellsite, and the caverns will be sequentially formed using seawater drawn from seawater intake. During seawater intake during construction/decommissioning, small marine fauna may be vulnerable to both entrainment (direct intake via the intake head of fauna which are small enough to pass through the intake screen mesh, into the salt caverns and then discharged with the brine) and impingement (when animals which are sufficiently large to avoid going through the intake screen are trapped against them by the force of the flowing water).

The intake pipe will be fitted with a 12mm mesh screen to prevent the entrainment of marine fauna, and therefore, Annex II marine mammals will be prevented from entrainment. Studies have shown that because entrance velocities in passive screen intakes are generally low (for this project, a maximum velocity of 0.15m/s is proposed), impingement for marine mammals is highly unlikely (EPRI, 2006). Marine mammals are highly agile and mobile receptors; the likelihood of impingement is negligible.

As such, there is no potential effect on the marine mammal designated features of European sites and no pathway to LSE. Therefore, this potential impact has not been carried forward to the determination of LSE in Table 4-3.

4.2.3.5 Increased underwater noise from vessels (construction/decommissioning and operation phases)

There is potential for increased underwater noise from vessels to impact Annex II marine mammals; this impact is likely to be restricted to along vessel routes. There will be limited vessel traffic associated with the Project during construction/decommissioning, including a construction/decommissioning vessel and a support vessel (construction/decommissioning phase). During operation, there will be occasional ongoing visits to and from the site (e.g. for site inspections and sampling). Until details of specific vessels to be used are known, on a precautionary basis, this impact has been carried forward to the determination of LSE in Table 4-3.

4.2.3.6 Changes to prey availability (construction/decommissioning phase)

Changes in prey abundance and distribution during the construction/decommissioning phase of the Project may have an indirect impact on Annex II marine mammals. For example, affecting the ability for Annex II marine mammals to forage within the vicinity of the Project. The potential effects on Annex II marine mammal prey species are described in Chapter 9 (Fish, Shellfish and Plankton Ecology) of the 'Islandmagee Gas Storage Facility Marine Consents Application - EIA Scoping Report'. Given the potential for effects, this impact has been carried forward to the determination of LSE in Table 4-3.

4.2.3.7 Disturbance to Annex II seals at haul-out sites (construction/decommissioning phase)

The closest seal haul-out sites are found at Maiden Rocks. This is approximately 7km from the outfall site and therefore there is no realistic risk of disturbance. As such, there is no potential effect on Annex II seal designated features of European sites and no pathway to LSE. Therefore, this potential impact has not been carried forward to the determination of LSE in Table 4-3.

4.2.3.8 Increased vessel activity which may result in collision risk (construction/decommissioning and operation phases)

Increased vessel traffic during all phases of the Project has the potential to increase the risk of collisions with Annex II marine mammals, which may result in fatality and permanent injury. However, there will be only a minor uplift in vessel numbers associated with the Project (likely two vessels during construction/decommissioning and one during operation; see Section 4.2.3.5) and this impact will be restricted to vessel routes. However, until details of specific vessels to be used are known, and in the absence of mitigation measures, on a precautionary basis, this impact has been carried forward to the determination of LSE in Table 4-3.

4.2.3.9 Increases in SSCs and associated sediment deposition (construction/decommissioning phase)

Tunnelling, excavation and HDD punchout activities are all expected to generate sediment plumes, resulting in temporary and localised increases in SSC and subsequent deposition. However, given the short-term and spatially limited nature of these effects during the construction/decommissioning phase, potential impacts to Annex II marine mammals are considered negligible, and therefore, this potential impact has not been carried

forward to the determination of LSE in Table 4-3. Similarly, no activities during the operation phase are expected to cause significant increases in SSCs.

4.2.3.10 Accidental pollution (construction/decommissioning and operation phase)

There is a risk of accidental pollution from vessels and equipment during construction/decommissioning and operation. This risk will be minimised through the use of good industry practice for vessels and the application of relevant guidelines for the prevention of pollution at sea (such as those from the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), International Maritime Organisation (IMO), and the International Convention for the Prevention of Pollution from Ships (MARPOL)). Thus, it is unlikely that accidental pollution will occur. However, in the absence of mitigation measures (which will be considered at the Appropriate Assessment stage), there is potential for impacts upon Annex II marine mammal receptors. As such, this impact has been carried forward to the determination of LSE in Table 4-3.

Table 4-3: Pathways for LSE: potential impacts on Annex II marine mammal features

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
• **North Channel SAC**	Harbour porpoise	Underwater noise emissions from the construction/ decommissioning of the intake and outfall (construction/ decommissioning phase)	Tunnelling, excavation and drilling activities (including HDD) involved in the construction/decommissioning of the intake and outfall have the potential to generate underwater noise within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, which may result in effects (including auditory injury and disturbance) on the harbour porpoise feature of the North Channel SAC, in the absence of mitigation. Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where underwater noise impacts may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC	✓
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	There is potential for effects on harbour porpoise from the discharge of brine during the operation of the outfall (construction/decommissioning phase[3]). The main potential effects include changes in behaviour (e.g. avoidance of the area) and indirect effects to harbour porpoise due to changes in prey availability. Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where effects associated with brine discharge may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Changes to prey availability (construction/ decommissioning phase)	There is potential for effects on harbour porpoise from changes to prey availability during the construction/decommissioning phase (e.g. affecting foraging). Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be foraging in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where changes to prey availability may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC.	✓
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	There is potential for effects on harbour porpoise from increased underwater noise from vessels during the construction/decommissioning and operation phases, including potential for injury and disturbance. Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC.	✓
		Increased vessel activity, which may result in collision risk (construction/ decommissioning and operation phase)	Potential increased vessel traffic during all phases of the Project has the potential to increase the risk of collisions with harbour porpoise, which may result in fatality and permanent injury. Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Accidental pollution (construction/ decommissioning and operation phases)	There is potential for effects on harbour porpoise from accidental pollution resulting from vessels and equipment associated with the Project during construction/decommissioning and operation. This risk will be reduced through the implementation of good industry practice and the use of relevant guidelines. Given the spatial overlap between the North Channel SAC and the Project, there is potential for the harbour porpoise feature of the North Channel SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels and equipment associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the North Channel SAC.	✓
• **Skerries and Causeway SAC** • **Inner Hebrides and the Minches SAC** • **North Anglesey Marine / Gogledd Môn Forol SAC**	Harbour porpoise	Underwater noise emissions from the construction/ decommissioning of intake and outfall (construction/ decommissioning phase)	Tunnelling, excavation and drilling activities (including HDD) involved in the construction/decommissioning of the intake and outfall have the potential to generate underwater noise within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, which may result in effects (including auditory injury and disturbance) on the harbour porpoise feature of the listed SACs (the Skerries and Causeway SAC, Inner Hebrides and Minches SAC and the North Anglesey Marine / Gogledd Môn Forol SAC), in the absence of mitigation. Since harbour porpoise are mobile and known to travel long distances, there is potential for harbour porpoise qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where underwater noise impacts may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the harbour porpoise feature of the listed SACs.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	There is potential for effects on harbour porpoise from the discharge of brine during the operation of the outfall (construction/decommissioning phase[3]). The main potential effects include changes in behaviour (e.g. avoidance of the area) and indirect effects to harbour porpoise due to changes in prey availability. Since harbour porpoise are mobile and known to travel long distances, there is potential for harbour porpoise qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where effects associated with brine discharge may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the harbour porpoise feature of the listed SACs.	✓
		Changes to prey availability (construction/ decommissioning phase)	There is potential for effects on harbour porpoise from changes to prey availability during the construction/decommissioning phase (e.g. affecting foraging). Since harbour porpoise are mobile and known to travel long distances, there is potential for the harbour porpoise feature of the listed SACs to be foraging in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where changes to prey availability may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the listed SACs.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	There is potential for effects on harbour porpoise from increased underwater noise from vessels during the construction/decommissioning and operation phases, including potential for injury and disturbance. Since harbour porpoise are mobile and known to travel long distances, there is potential for the harbour porpoise feature of the listed SACs to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the listed SACs.	✓
		Increased vessel activity, which may result in collision risk (construction/ decommissioning and operation phase)	Increased vessel activity, which may result in collision risk (construction/decommissioning and operation phase). Potential increased vessel traffic during all phases of the Project has the potential to increase the risk of collisions with harbour porpoise, which may result in fatality and permanent injury. Since harbour porpoise are mobile and known to travel long distances, there is potential for the harbour porpoise feature of the listed SACs to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the listed SACs.	✓
		Accidental pollution (construction/ decommissioning and operation phases)	There is potential for effects on harbour porpoise from accidental pollution resulting from vessels and equipment associated with the Project during construction/decommissioning and operation. This risk will be reduced through the implementation of good industry practice and the use of relevant guidelines. Since harbour porpoise are mobile and known to travel long distances, there is potential for the harbour porpoise feature of the listed SACs to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			Surface Sea Water Intake End Point, where vessels and equipment associated with the Project may occur. As such, there is the potential for an LSE on the harbour porpoise feature of the listed SACs.	
• **Bristol Channel Approaches / Dynesfeydd Môr Hafren SAC** • **West Wales Marine / Gorllewin Cymru Forol SAC** • **Rockabill to Dalkey Island SAC** • **Roaringwater Bay and Islands SAC** • **Blasket Islands SAC**	Harbour porpoise	Underwater noise emissions from the construction/ decommissioning of intake and outfall (construction/ decommissioning phase)	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1km south of the Project. As such, it is considered extremely unlikely that harbour porpoise designated features of the listed SACs would be affected by underwater noise emissions from the construction/decommissioning of intake and outfall structures associated with the Project, given these effects will be localised to within the immediate vicinity of the construction/decommissioning activities (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The impact will also occur over a limited temporal scale (over an estimated 6-month period), further limiting the potential for a qualifying feature to be present in the area where underwater noise impacts may occur. As such, there is considered to be no route to impact on the harbour porpoise qualifying feature of the listed SACs and no potential for LSE.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1km south of the Project. As such, it is extremely unlikely that harbour porpoise designated features of the listed SACs would be affected by effects associated with the discharge of brine during operation of the outfall (e.g. behavioural effects and indirect effects due to changes in prey availability). These effects will be of small spatial scale, limiting the potential for a qualifying feature to be present in the area where these effects could occur. As such, there is considered no route to impact on the qualifying feature of the listed SACs and no potential for LSE.	×
		Changes to prey availability (construction/ decommissioning phase)	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1km south of the Project. As such, it is considered extremely unlikely that harbour porpoise designated features of the listed SACs would be affected by changes to prey availability arising from the Project, given these effects will likely be localised to within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, especially when considering the large amount of available foraging habitat in the North Channel and surrounding areas. As such, there is considered to be no potential for LSE on the harbour porpoise feature of the listed SACs.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150 km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1 km south from the Project. As such, it is considered extremely unlikely that harbour porpoise designated features of the listed SACs would be affected by increased underwater noise from vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited (likely two during construction/decommissioning and one during the operation phase) further limiting the potential for effects on a qualifying feature. As such, there is considered no route to impact on the harbour porpoise qualifying feature of the listed SACs and no potential for LSE.	×
		Increased vessel activity, which may result in collision risk (construction/ decommissioning and operation phase)	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1km south of the Project. As such, it is considered extremely unlikely that harbour porpoise designated features of the listed SACs would collide with vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			(likely two during construction/decommissioning and one during the operation phase), further limiting the potential for effects on a qualifying feature. As such, there is considered to be no route to impact on the harbour porpoise qualifying feature of the listed SACs and no potential for LSE.	
		Accidental pollution (construction/ decommissioning and operation phases)	The listed SACs (Bristol Channel Approaches / Dynesfeydd Môr Hafren, West Wales Marine / Gorllewin Cymru Forol SAC, Rockabill to Dalkey Island SAC, Roaringwater Bay and Islands SAC and Blasket Islands SAC) designated for harbour porpoise are located at least 150km from the Project, with the closest listed SAC (Rockabill to Dalkey Island SAC) located 150.1km south of the Project. As such, it is considered extremely unlikely that harbour porpoise designated features of the listed SACs would be affected by accidental pollution (e.g. from Project vessels and/or equipment), since these effects will be localised to the movements of such vessels and locations of equipment (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The use of good industry practice and the use of relevant guidelines will further reduce the potential for an impact. As such, there is considered to be no realistic route to impact on the harbour porpoise qualifying feature of the listed SACs and no potential for LSE.	×
• **Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC**	Bottlenose dolphin	Underwater noise emissions from construction/ decommissioning of intake and outfall (construction/	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is considered extremely unlikely that bottlenose dolphin designated features of the listed SACs would be affected by underwater	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
• **Cardigan Bay/ Bae Ceredigion SAC**		decommissioning phase)	noise emissions from the construction/decommissioning of intake and outfall structures associated with the Project, given these effects will be localised to within the immediate vicinity of the construction/decommissioning activities (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The impact will also occur over a limited temporal scale (over an estimated 6-month period), further limiting the potential for a qualifying feature to be present in the area where underwater noise impacts may occur. As such, there is considered to be no route to impact on the bottlenose dolphin qualifying feature of the listed SACs and no potential for LSE.	
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is extremely unlikely that bottlenose dolphin designated features of the listed SACs would be affected by effects associated with the discharge of brine during operation of the outfall (e.g. behavioural effects and indirect effects due to changes in prey availability). These effects will be of a small spatial scale, limiting the potential for a qualifying feature to be present in the area where these effects could occur. As such, there is considered to be no route to impact on the qualifying feature of the listed SACs and no potential for LSE.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Changes to prey availability (construction/ decommissioning phase)	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is considered extremely unlikely that bottlenose dolphin designated features of the listed SACs would be affected by changes to prey availability arising from the Project, given these effects will likely be localised to within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, especially when considering the large amount of available foraging habitat in the North Channel and surrounding areas. As such, there is considered to be no potential for LSE on the bottlenose dolphin feature of the listed SACs.	×
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is considered extremely unlikely that bottlenose dolphin designated features of the listed SACs would be affected by increased underwater noise from vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited (likely two during construction/decommissioning and one during the operation phase), further limiting the potential for effects on a qualifying feature. As such, there is considered to be no route to impact on the bottlenose dolphin qualifying feature of the listed SACs and no potential for LSE.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Increased vessel activity, which may result in collision risk (construction/ decommissioning and operation phase)	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is considered extremely unlikely that bottlenose dolphin designated features of the listed SACs would collide with vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited (likely two during construction/decommissioning and one during the operation phase), further limiting the potential for effects on a qualifying feature. As such, there is considered to be no route to impact on the bottlenose dolphin qualifying feature of the listed SACs and no potential for LSE.	×
		Accidental pollution (construction/ decommissioning and operation phases)	The listed SACs (Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC and Cardigan Bay/ Bae Ceredigion SAC) designated for bottlenose dolphin are located over 150km from the Project, with the closest listed SAC (the Pen Llŷn a`r Sarnau/Lleyn Peninsula and the Sarnau SAC) located 223km southeast of the Project. As such, it is considered extremely unlikely that bottlenose dolphin designated features of the listed SACs would be affected by accidental pollution (e.g. from Project vessels and/or equipment), since these effects will be localised to the movements of such vessels and locations of equipment (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The use of good industry practice and the use of relevant guidelines will further reduce the potential for an impact. As such, there is considered to be no	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			realistic route to impact on the bottlenose dolphin qualifying feature of the listed SACs and no potential for LSE.	
• **The Maidens SAC**	Grey seal	Underwater noise emissions from the construction/ decommissioning of intake and outfall (construction/decommissioning phase)	Tunnelling, excavation and drilling activities (including HDD) involved in the construction/decommissioning of the intake and outfall have the potential to generate underwater noise within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, which may result in effects (including auditory injury and disturbance) on the grey seal feature of The Maidens SAC, in the absence of mitigation. Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for grey seal qualifying features of The Maidens SAC to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where underwater noise impacts may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the grey seal feature of The Maidens SAC.	✓
		Effects on marine ecology receptors associated with the discharge of brine during operation of the outfall (construction/ decommissioning phase[3])	There is potential for effects on grey seal from the discharge of brine during the operation of the outfall. The main potential effects include changes in behaviour (e.g. avoidance of the area) and indirect effects to harbour porpoise due to changes in prey availability. Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for grey seal qualifying features of The Maidens SAC to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where effects associated with brine discharge may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the grey seal feature of The Maidens SAC.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Changes to prey availability (construction/ decommissioning phase)	There is potential for effects on grey seal from changes to prey availability during the construction/decommissioning phase (e.g. affecting foraging). Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for the grey seal feature of the Maidens SAC to be foraging in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where changes to prey availability may occur. As such, there is the potential for an LSE on the grey seal feature of the Maidens SAC.	✓
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	There is potential for effects on grey seal from increased underwater noise from vessels during the construction/decommissioning and operation phases, including potential for injury and disturbance. Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for the grey seal feature of the Maidens SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the grey seal feature of the Maidens SAC.	✓
		Increased vessel activity, which may result in collision risk (construction/decommissioning and operation phase)	Potential increased vessel traffic during all phases of the Project has the potential to increase the risk of collisions with grey seal, which may result in fatality and permanent injury. Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for the grey seal feature of the Maidens SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the grey seal feature of the Maidens SAC.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Accidental pollution (construction/ decommissioning and operation phases)	There is potential for effects on grey seal from accidental pollution resulting from vessels and equipment associated with the Project during construction/decommissioning and operation. This risk will be reduced through the implementation of good industry practice and the use of relevant guidelines. Given the close proximity of the Maidens SAC to the Project (1km away), there is potential for the grey seal feature of the Maidens SAC to be present in the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, where vessels and equipment associated with the Project may occur. As such, there is the potential for an LSE on the grey seal feature of the Maidens SAC.	✓
• **Treshnish Isles SAC** • **Monach Islands SAC**	Grey seal	Underwater noise emissions from the construction /decommissioning of intake and outfall (construction/ decommissioning phase)	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5km north-northwest from the Project. As such, it is considered extremely unlikely that grey seal designated features of the listed SACs would be affected by underwater noise emissions from the construction/decommissioning of intake and outfall structures associated with the Project, given these effects will be localised to within the immediate vicinity of the construction/decommissioning activities (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The impact will also occur over a limited temporal scale (over an estimated 6-month period), further limiting the potential for a qualifying feature to be present in the area where underwater noise impacts may occur. As such, there is considered no route to impact on the grey seal qualifying feature of the listed SACs and no potential for LSE.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5km north-northwest of the Project. As such, it is extremely unlikely that grey seal designated features of the listed SACs would be affected by effects associated with the discharge of brine during operation of the outfall (e.g. behavioural effects and indirect effects due to changes in prey availability). These effects will be of a small spatial scale, limiting the potential for a qualifying feature to be present in the area where these effects could occur. As such, there is considered to be no route to impact on the qualifying feature of the listed SACs and no potential for LSE.	×
		Changes to prey availability (construction/ decommissioning phase)	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5km north-northwest of the Project. As such, it is considered extremely unlikely that grey seal designated features of the listed SACs would be affected by changes to prey availability arising from the Project, given these effects will likely be localised to within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, especially when considering the large amount of available foraging habitat in the North Channel and surrounding areas. As such, there is considered to be no potential for LSE on the grey seal feature of the listed SACs.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5km north-northwest of the Project. As such, it is considered extremely unlikely that grey seal designated features of the listed SACs would be affected by increased underwater noise from vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited (likely two during construction/decommissioning and one during the operation phase), further limiting the potential for effects on a qualifying feature. As such, there is considered no route to impact on the grey seal qualifying feature of the listed SACs and no potential for LSE.	×
		Increased vessel activity, which may result in collision risk (construction/decommissioning and operation phase)	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150 km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5 km north-northwest of the Project. As such, it is considered extremely unlikely that grey seal designated features of the listed SACs would collide with vessels associated with the Project, given these effects will be localised to the movements of such vessels (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The number of vessels associated with the Project is also limited (likely two during construction/decommissioning and one during the operation phase), further limiting the potential for effects on a qualifying feature. As such, there is considered to be no route to impact on the grey seal qualifying feature of the listed SACs and no potential for LSE.	×

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Accidental pollution (construction/ decommissioning and operation phases)	The listed SACs (Treshnish Isles SAC and Monach Islands SAC) designated for grey seal are located over 150 km from the Project, with the closest listed SAC (Treshnish Isles SAC) located 192.5 km north-northwest of the Project. As such, it is considered extremely unlikely that grey seal designated features of the listed SACs would be affected by accidental pollution (e.g. from Project vessels and/or equipment), since these effects will be localised to the movements of such vessels and locations of equipment (i.e. within the immediate vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point). The use of good industry practice and the use of relevant guidelines will further reduce the potential for an impact. As such, there is considered to be no realistic route to impact on the grey seal qualifying feature of the listed SACs and no potential for LSE.	×
• **Strangford Lough SAC** • **Murlough SAC**	Harbour seal	Underwater noise emissions from the construction/ decommissioning of intake and outfall (construction/decommissioning phase)	Tunnelling, excavation and drilling activities (including HDD) involved in the construction/decommissioning of the intake and outfall have the potential to generate underwater noise within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point, which may result in effects (including auditory injury and disturbance) on the harbour seal feature of the listed SACs (Strangford Lough SAC and Murlough SAC), in the absence of mitigation. Harbour seals typically travel up to 50km but have been observed on occasion to travel up to 100km, there is potential for harbour seal qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where underwater noise impacts may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the harbour seal feature of the listed SACs.	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Effects on marine ecology receptors associated with the discharge of brine during the operation of the outfall (construction/ decommissioning phase[3])	There is potential for effects on harbour seal from the discharge of brine during the operation of the outfall. The main potential effects include changes in behaviour (e.g. avoidance of the area) and indirect effects to harbour porpoise due to changes in prey availability. Harbour seals typically travel up to 50km, but have been observed on occasion to 100km, there is potential for harbour seal qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where effects associated with brine discharge may occur) at some point during their lifecycle. As such, on a precautionary basis, there is considered to be a potential for an LSE on the harbour porpoise feature of the listed SACs.	✓
		Changes to prey availability (construction/ decommissioning phase)	There is potential for effects on harbour seal from changes to prey availability during the construction/decommissioning phase (e.g. affecting foraging). Harbour seals typically travel up to 50km but have been observed on occasion to 100km. There is potential for harbour seal qualifying features of the listed SACs to be foraging within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel (where effects associated with brine discharge may occur). As such, there is considered to be a potential for an LSE on the harbour seal feature of the listed SACs	✓
		Increased underwater noise from vessels (construction/ decommissioning and operation phases)	There is potential for effects on harbour seal from increased underwater noise from vessels during the construction/decommissioning and operation phases, including potential for injury and disturbance. Harbour seals typically travel up to 50km but have been observed on occasion to 100km. There is potential for harbour seal qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface	✓

European site/s	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour seal feature of the listed SACs.	
		Increased vessel activity, which may result in collision risk (construction/ decommissioning and operation phase)	Increased vessel activity, which may result in collision risk (construction/decommissioning and operation phase). Potential increased vessel traffic during all phases of the Project has the potential to increase the risk of collisions with harbour seal, which may result in fatality and permanent injury. Harbour seals typically travel up to 50km but have been observed on occasion to 100km. There is potential for harbour seal qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel, where vessels associated with the Project may occur. As such, there is the potential for an LSE on the harbour seal feature of the listed SACs.	✓
		Accidental pollution (construction/ decommissioning and operation phases)	There is potential for effects on harbour seal from accidental pollution resulting from vessels and equipment associated with the Project during construction/decommissioning and operation. This risk will be reduced through the implementation of good industry practice and use of relevant guidelines. Harbour seals typically travel up to 50km but have been observed on occasion to 100km. There is potential for harbour seal qualifying features of the listed SACs to be transiting through the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point and North Channel, where vessels and equipment associated with the Project may occur. As such, there is the potential for an LSE on the harbour seal feature of the listed SACs.	✓

4.2.4 Assessment of LSE for Marine Ornithology Features

This section summaries the assessment undertaken to conclude whether there is a potential for LSE as a result of the Project on any SPAs designated for offshore and intertidal ornithology, as listed in Section 4.1.5. The pathways for LSE are defined as the potential impacts and effects which could arise from the construction/decommissioning and operation of the Project. The impacts considered to have a potential pathway to LSE are:

- Noise and visual disturbance during construction/decommissioning; and
- Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during the construction/decommissioning phase[3].

These are consistent with the impacts scoped in in Chapter 7 (Offshore and Intertidal Ornithology) of the 'Islandmagee Gas Storage Facility Marine Consents Application - EIA Scoping Report'.

Table 4-4 summarises the potential impacts on ornithological qualifying interest features of European sites, including a justification for the screening decision.

4.2.4.1 Noise and visual disturbance during construction/decommissioning

The primary source of noise during the construction/decommissioning phase of the Project will originate from the construction/decommissioning of the seawater intake and brine outfall pipes, utilising tunnelling, excavation and HDD. The nature of these construction/decommissioning activities means any noise generated will be non-impulsive. Construction of the intake and outfall is expected to take six months and will be confined to a geographically small area (i.e. the immediate vicinity of the construction/decommissioning activities). Drilling and tunnelling are only part of the intake and outfall construction and will operate at full noise output for less than half of the overall construction time (three months). The tunnel machine will be located below the seabed and thus will not contribute significantly to construction/ decommissioning noise levels. The worst-case scenario for noise emission will be during the excavation of the tunnel reception pit and the recovery of the tunnel machinery. This is expected to take eighteen days, and worst-case noise levels will be limited to a fraction of this time.

Caverns will also be constructed in a three-stage leaching concept of sump, main and roof phases. Construction of each cavern will take twenty-two months, with several in leaching at any one time. The overall construction of all seven caverns is expected to take up to four years. Whilst this is significantly longer than the construction of the intake and outfall, impacts of disturbance are likely to be minimal due to the less invasive leaching techniques in comparison to tunnelling and drilling, and the cavern locations being deep beneath the seabed.

The potential effects of noise and visual disturbance during construction/decommissioning of the seawater intake and brine outfall pipes include the disturbance of bird species from foraging or roosting areas, causing changes in behaviour or displacing them from the affected areas. Temporary disturbance/displacement may lead to a reduction in foraging opportunities or increased energy expenditure, resulting in decreased survival

rates or productivity in the population. As such, this impact has been taken forward to the determination of LSE in Table 4-4.

4.2.4.2 Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during construction/decommissioning[3]

The Brine Dispersion Modelling Report produced for the 2019 Marine Environmental Conditions Update (RPS, 2019a) found that discharges of up to 1,000m^3/hour of saturated brine through the proposed outfall and diffuser will minimally impact salinity levels beyond the immediate vicinity of the outfall. Increases in salinity >0.5PSU above background levels is not expected to occur at distances greater than 200m from the diffuser, with salinities >36PSU not expected to occur at distances greater than 100m from the diffuser. These values are within the normal variations of salinity for the area. Furthermore, the brine outflow is likely to be of high density and will sink towards the seabed. Therefore, much of the water column above will experience only minor increases in salinity. Consequently, it is unlikely that the brine outflow will pose any significant adverse effects to ornithological receptors or their prey species.

The potential effects of this impact include changes in prey distribution availability or abundance, resulting in indirect displacement from foraging grounds in the area or reduced energy intake, affecting survival rates or productivity in the population in the short-term.

Table 4-4: Pathways for LSE: potential impacts on marine ornithology features

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
Larne Lough SPA[2]	Pale-bellied brent goose	Noise and visual disturbance during construction/ decommissioning	Tunnelling, excavation and drilling activities (e.g. HDD) involved in the intake and outfall construction/ decommissioning have the potential to generate noise and visual disturbance within the vicinity of the Brine Outfall End Point and Sea Water Intake End Point locations. Flocks of pale-bellied brent geese have been historically observed foraging within the Inner Larne Lough (Booth Jones et al., 2023). Small numbers were also seen foraging in the vicinity of intake and outfall construction/decommissioning activities (e.g. Browns Bay, Ferris Bay). However, birds can typically habituate to noise over time and therefore any disturbance to overwintering birds due to increased noise levels is likely to subside over time. Bird populations in the area are also likely to be somewhat habituated to operational noise at Ballylumford Power Station, with small flocks of pale-bellied brent geese consistently observed foraging in this area during site-specific surveys. As such, it is considered unlikely that pale-bellied brent geese designated at Larne Lough SPA[2] would be affected by any noise or visual disturbance from the construction/decommissioning of intake and outfall structures associated with the Project, given these effects will be localised to within the immediate vicinity of the construction/decommissioning activities and there are other foraging locations the geese can move to. The intake and outfall structures are 300 m away on the other side of the Islandmagee Peninsula, so there will be no line of sight and therefore no visual disturbance from this element of the Project. The impact will also occur over a limited temporal scale (estimated 6 months for intake and outfall). As such, there is considered to be no route to impact on the pale-bellied brent goose qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during the construction/ decommissioning phase[3]	The discharge of brine during the operation of the outfall (construction/decommissioning phase[3]) has the potential to indirectly cause disturbance to ornithological receptors via food resource depletion within the vicinity of the Brine Outfall End Point. Pale-bellied brent geese were largely observed foraging within Brown Bay and Ferris Bay, approximately 2-3km from the proposed Brine Outfall End Point (straight line distance). The species has also historically shown a preference to forage within the Inner Larne Lough area (Booth Jones et al., 2023). Given that the proposed outfall and diffuser will minimally impact salinity levels beyond the immediate vicinity of the outfall (100-200m) and that much of the dense brine will sink toward the seabed, it is unlikely that brine discharges at the outfall will significantly impact pale-bellied brent geese, which primarily feed on eelgrass, seaweed, grasses and winter cereals in mudflat, estuarine and terrestrial habitats. As such, there is considered to be no route to impact on the pale-bellied brent goose qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	×
	Sandwich tern	Noise and visual disturbance during construction/ decommissioning	Tunnelling, excavation and drilling activities (e.g. HDD) involved in the intake and outfall construction/decommissioning have the potential to generate noise and visual disturbance within the vicinity of the Brine Outfall End Point and Sea Water Intake End Point. In Larne Lough, Sandwich tern largely concentrate in Portmuck Bay to forage, approximately 2-4km away from the intake and outfall locations. Aggregations also occur near Browns Bay, which may be subject to some noise and visual disturbance during intake and outfall construction/decommissioning. However, birds can typically habituate to noise over time, and therefore any disturbance to overwintering birds due to increased noise levels will subside over time. There is also likely to already be a degree of habituation in flocks	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			within Browns Bay to operational noise from the nearby Ballylumford Power Station. As such, it is considered unlikely that the Sandwich tern designated at Larne Lough SPA[2] would be affected by noise or visual disturbance from the construction/decommissioning of intake and outfall structures associated with the Project, given these effects will be localised to within the immediate vicinity of the construction/decommissioning activities. The intake and outfall structures are 300m away on the other side of the Islandmagee Peninsula, so there will be no line of sight and therefore no visual disturbance from this element of the Project. The impact will also occur over a limited temporal scale (estimated 6 months for intake and outfall). As such, there is considered no route to impact on the Sandwich tern qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	
		Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during the construction/ decommissioning phase[3]	The discharge of brine during the operation of the outfall (construction/ decommissioning phase[3]) has the potential to indirectly cause disturbance to ornithological receptors via food resource depletion within the vicinity of the Brine Outfall End Point. Sandwich tern are specialised foragers feeding almost exclusively on clupeids and sandeels. They are therefore more likely to struggle in finding alternative foraging locations with suitable prey species in comparison to opportunistic species (e.g. common tern, Arctic tern). However, whilst Sandwich tern were seen to favour feeding within the Loch as opposed to the open coast, regular flocks were not recorded within the vicinity of the Sub Surface Brine Outfall End Point. Given that the proposed outfall and diffuser will minimally impact salinity levels beyond the immediate vicinity of the outfall (100-200m) and that much of the dense brine will sink toward the seabed, it is unlikely that brine discharges at the outfall will significantly impact Sandwich tern. As such, there is considered no	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			route to impact on the Sandwich tern qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	
	Mediterranean gull	Noise and visual disturbance during construction/ decommissioning	Tunnelling, excavation and drilling activities (e.g. HDD) involved in the intake and outfall construction/decommissioning have the potential to generate noise and visual disturbance within the vicinity of the Sub Surface Brine Outfall End Point and Sub Surface Sea Water Intake End Point. However, the intake and outfall structures are 300m away on the other side of the Islandmagee Peninsula, so there will be no line of sight and therefore no visual disturbance from this element of the Project. The rarity of Mediterranean gull locally and within the site-specific surveys during both the breeding and wintering season suggests any impacts from construction/decommissioning noise or visual disturbance is highly unlikely. As such, there is considered to be no route to impact on the Mediterranean gull qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	×
		Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during the construction/ decommissioning phase[3]	The discharge of brine during the operation of the outfall (construction/decommissioning phase[3]) has the potential to indirectly cause disturbance to ornithological receptors via food resource depletion within the vicinity of the Brine Outfall End Point. The rarity of Mediterranean gull locally and within the site-specific surveys during both the breeding and wintering season suggests any indirect impact from construction/decommissioning noise or visual disturbance is highly unlikely. As such, there is considered to be no route to impact on the Mediterranean gull qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
Larne Lough SPA[2]	Roseate tern	Noise and visual disturbance during construction/ decommissioning	Tunnelling, excavation and drilling activities (e.g. HDD) involved in the intake and outfall construction/decommissioning have the potential to generate noise and visual disturbance within the vicinity of the Brine Outfall End Point and Sea Water Intake End Point. Roseate tern was not observed during site-specific surveys, with just one known breeding pair recorded historically on Swan Island (the only known breeding pair in NI and therefore of national significance) (Wilson et al., 2019). The seawater intake location is 3.9km away, and the brine outfall location is 4.3km away from Swan Island. Therefore, construction/decommissioning-related visual and noise disturbance effects are unlikely. As such, there is considered to be no impact pathway between the Project and Larne Lough SPA[2] via roseate terns. As such, on a precautionary basis, there is considered to be potential for an LSE on the roseate tern qualifying feature of the Larne Lough SPA[2] without appropriate mitigation. Therefore, it is recommended that construction/decommissioning be limited to September to March to avoid the breeding season of the roseate tern.	x
		Indirect pollution impacts causing disturbance via food resource depletion from the excess of brine at the outfall during the construction/ decommissioning phase[3]	The discharge of brine during the operation of the outfall (construction/decommissioning phase[3]) has the potential to indirectly cause disturbance to ornithological receptors via food resource depletion within the vicinity of the Brine Outfall End Point. Roseate terns have been shown to have a more restricted diet than other tern species (feeding almost exclusive on sandeels, herring and sprat) and are therefore more vulnerable to indirect resource depletion as opposed to more opportunistic species (e.g. common tern, Arctic tern). However, roseate tern was not observed during site-specific surveys, with just one known breeding pair recorded historically on Swan Island (the only known breeding pair in NI and therefore of national significance) (Wilson et al., 2019). The pair typically forage within the Loch on shallow sand bars and within the	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
			estuary, approximately 3km (straight line distance) from the Brine Outfall End Point. Given that the proposed outfall and diffuser will minimally impact salinity levels beyond the immediate vicinity of the outfall (100-200m) and much of the dense brine will sink toward the seabed, it is unlikely that brine discharges at the outfall will significantly impact roseate tern at Swan Island. As such, there is considered to be no route to impact on the roseate tern qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	
	Common tern	Noise and visual disturbance during construction/ decommissioning	Tunnelling, excavation and drilling activities (e.g. HDD) involved in the intake and outfall have the potential to generate noise and visual disturbance within the vicinity of the Brine Outfall End Point and Sea Water Intake End Point. Common tern are observed in frequent aggregations within Larne Lough SPA[2], with flocks recorded commuting between Larne Lough, Browns Bay and Portmuck to forage for juveniles during the breeding season (April to August). Flying individuals are therefore likely to directly overlap with intake and outfall construction/decommissioning activities and may be subject to impacts from noise and visual disturbance. As such, on a precautionary basis, there is considered to be potential for an LSE on the common tern qualifying feature of the Larne Lough SPA[2] without appropriate mitigation. Therefore, it is recommended that construction/decommissioning is limited to September to March to avoid the breeding season of common tern.	✓
		Indirect pollution impacts causing disturbance via food resource	The discharge of brine during the operation of the outfall (construction/decommissioning phase) has the potential to indirectly cause disturbance to ornithological receptors via food resource depletion within the vicinity of the Brine Outfall End Point.	×

European site	Relevant qualifying feature	Potential impact	Justification for screening decision	Potential for an LSE to occur
		depletion from the excess of brine at the outfall during the construction/ decommissioning phase[3]	Common tern are highly opportunistic feeders, changing prey species and foraging up to 37km from breeding colonies depending on resource availability (Wilson et al., 2010). Therefore, they are likely to adapt easily to any impacts from food resource depletion as a result of excess brine at the Brine Outfall End Point. However, whilst common tern were recorded in frequent aggregations around Browns Bay, no individuals were observed in the vicinity of the Brine Outfall End Point. Given that the proposed outfall and diffuser will minimally impact salinity levels beyond the immediate vicinity of the outfall (100-200m) and that much of the dense brine will sink toward the seabed, it is unlikely that brine discharges at the outfall will significantly impact common tern. As such, there is considered to be no route to impact on the common tern qualifying feature of the Larne Lough SPA[2] and no potential for LSE.	

4.3 Approach to the In-Combination Assessment

The Habitats Regulations require the consideration of the potential effects of the Project on European sites both alone and in-combination with other plans or projects. It is not necessary at the LSE screening stage to consider sites/features for which an LSE 'alone' has already been identified, as in-combination effects will be considered at the Appropriate Assessment. The focus at this stage should be to identify sites/features for which no LSE alone was concluded, but there is potential for an LSE in-combination with other plans and projects.

For Annex II diadromous fish and Annex II otters, no qualifying sites or features are identified, and therefore, there is no potential for in-combination effects to occur. For Annex II marine mammals, no proposed developments were identified as likely to cause in-combination effects with the Project. For Annex I habitats, no potential for LSE was identified for the Project alone. There is either no pathway to effect, or the Project would result in only negligible effects that would not contribute (even collectively) in a material way to in-combination effects, and therefore, no additional in-combination issues are identified.

5 Summary

This HRA LSE Screening Report has identified that there is the potential for LSE on identified features within seven SACs and two SPAs during the construction/decommissioning and operational phases of the Project, which will be taken forward for Appropriate Assessment. A summary of these potential LSE is provided in Table 5-1.

All other remaining potential effects on features of identified European Sites have been screened out in section 4 above and will therefore not be taken forward for appropriate assessment.

Table 5-1: Summary of European sites taken forward for Appropriate Assessment

European Site	Relevant qualifying interest features	Project phase	Impact
• **North Channel SAC;** • **Skerries and Causeway SAC;** • **Inner Hebrides and the Minches SAC; and** • **North Anglesey Marine / Gogledd Môn Forol SAC**	Harbour Porpoise	Construction/decommissioning	Underwater noise emissions from the construction/ decommissioning of the intake and outfall
		Construction/decommissioning	Effects on marine ecology receptors associated with the discharge of brine during operation of the outfall[3]
		Construction/decommissioning and Operation	Increased underwater noise from vessels
		Construction/decommissioning	Changes to prey availability
		Construction/decommissioning and Operation	Increased vessel activity, which may result in collision risk
		Construction/decommissioning and Operation	Accidental pollution
• **The Maidens SAC**	Grey Seal	Construction/decommissioning	Underwater noise emissions from the construction/ decommissioning of the intake and outfall
		Construction/decommissioning	Effects on marine ecology receptors associated with the

European Site	Relevant qualifying interest features	Project phase	Impact
			discharge of brine during operation of the outfall[3]
		Construction/decommissioning and Operation	Increased underwater noise from vessels
		Construction/decommissioning	Changes to prey availability
		Construction/decommissioning and Operation	Increased vessel activity which may result in collision risk
		Construction/decommissioning and Operation	Accidental pollution
• **Strangford Lough SAC; and** • **Murlough SAC**	Harbour Seal	Construction/decommissioning	Underwater noise emissions from the construction/ decommissioning of intake and outfall
		Construction/decommissioning	Effects on marine ecology receptors associated with the discharge of brine during operation of the outfall[3]
		Construction/decommissioning and Operation	Increased underwater noise from vessels
		Construction/decommissioning	Changes to prey availability
		Construction/decommissioning and Operation	Increased vessel activity, which may result in collision risk
		Construction/decommissioning and Operation	Accidental pollution
• **Larne Lough SPA[2]**	Roseate tern Common tern	Construction/decommissioning	Noise and visual disturbance during construction/ decommissioning

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