MERC Consultants
environmental and conservation services

Natura Impact Statement

Department of the Environment, Climate and Communications: Geophysical Reconnaissance Survey in support of offshore renewable energy development

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1. Introduction

There is a requirement for a geological reconnaissance survey to inform the potential suitability of marine areas for possible offshore wind and grid infrastructure development. The area of interest is on the South East Coast between Cork & Waterford, in 10 – 70m water depth (Figure 1). The reconnaissance survey data collected by this initial and future survey works will provide information in the upper 100 m of sub-surface geology, to inform the potential suitability of marine areas for possible offshore wind and grid infrastructure development, should these areas be identified as suitable for offshore wind and/or grid development within the final South Coast DMAP.

A full description of the proposed project and its associated scope of works is presented in the Supporting Information for Screening for Appropriate Assessment (SISAA), (MERC, 2024). In summary, the scope of works includes the deployment of a suite of mapping instruments including multibeam, sub bottom profiler, deployment of a day or Hammon grab, side scan sonar, a sparker system and if further penetration is required, an air gun source. These will provide appropriate datasets for the various sub-bottom requirements for a ground investigation for offshore wind development.

Based on the Screening Determination (MARA, 2024), this report represents a Natura Impact Statement (NIS) for the proposed project.

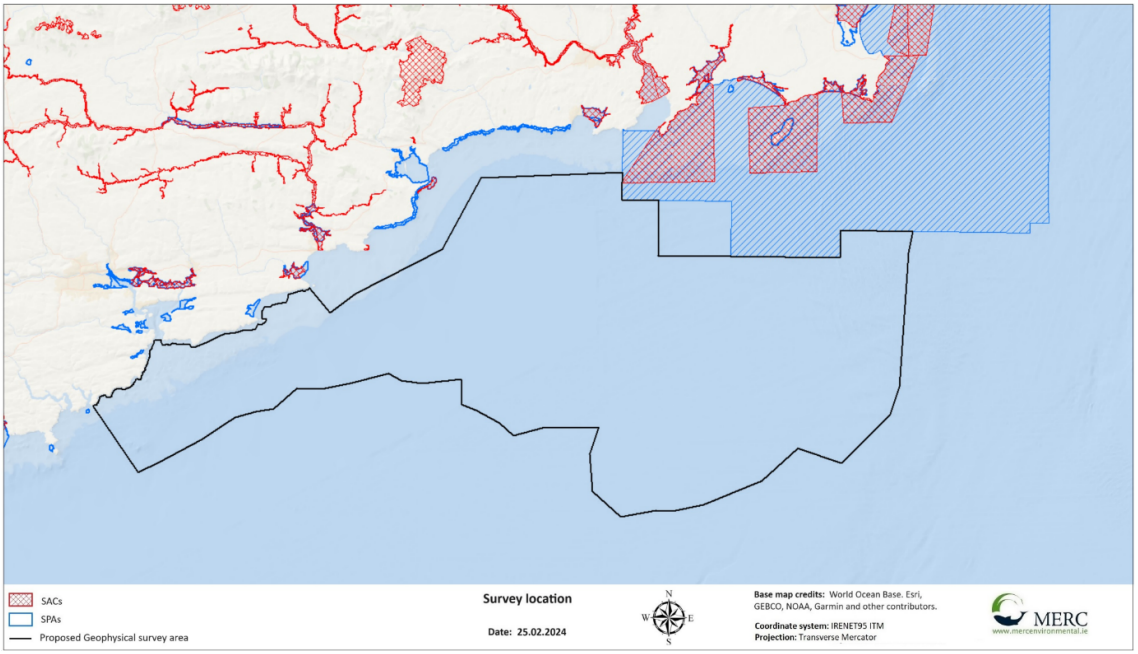

Fig. 1. Overview of proposed survey area relative to adjacent European sites.

2. Statement of authority

This report was prepared by Louise Scally of MERC Consultants. MERC are a specialist marine ecological survey and consultancy firm. Core staff have more than 60 years of combined experience and specialist knowledge in relation to Irish aquatic habitats and species in addition to the assessment and management of conservation interests. MERC were responsible for preparing the NPWS national monitoring of marine Annex I habitats for compliance under Article 17 of the EU Habitats Directive in the period 2015-2019. In this context MERC were responsible for the assessment and reporting of marine Annex I habitats in Ireland and were the authors of all Article 17 reports and overarching site monitoring reports. MERC are currently engaged in conducting surveys and preparing the relevant reports for the current (2022-2025) monitoring cycle.

In addition to their scientific expertise MERC have an in-depth knowledge of Irish and European Environmental legislation and policy. In 2011 MERC prepared the text describing Activities Requiring Consent (ARCs) for inclusion in a handbook detailing the regulatory framework for all developments within designated sites in Ireland on behalf of the National Parks and Wildlife Service. They have also produced numerous Conservation Management Plans for the same department. To-date MERC have conducted in excess of 200 ecological reports in support of Appropriate Assessment under Article 6(3) of the EU Habitats Directive.

Louise Scally MCIEEM is a professional marine ecologist with a wide range of experience in the field of conservation biology, marine habitat mapping and ecology. She completed a M.Sc. in ecology and taxonomy at Trinity College Dublin in 1989 and a Ph.D. in taxonomy also at Trinity College Dublin in 2001. She is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). For the last 20 years she has specialised in the ecology of marine ecosystems. She has specialised in the assessment of benthic habitats with a focus on intertidal and subtidal reef habitats and sensitive seabed species and habitats. For the last 15 years she has conducted extensive marine monitoring surveys and assessments of EU Habitats Directive marine Annex I habitats and their associated species within European sites in Ireland to assist Ireland in complying with monitoring obligations under the EU Habitats Directive.

3. Methods

3.1. Guidelines and legislation

This report has been prepared, *inter alia*, with reference to the following European Directives, national legislation and guidance on the appropriate assessment of projects and plans with regard to the implementation of the provisions of Article 6(3) and (4) of the EU Habitats Directive 92/43/EEC.

- Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna. Official Journal of the European Communities.
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version).
- European Communities (Birds and Natural Habitats) Regulations 2011. SI No. 477 of 2011.
- Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. European Commission 2018. 7621 final. Office for Official Publications of the European Communities, Luxembourg.

- Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological Guidance on the provisions of Articles 6(3) and (4) of the Habits Directive 92/43/EEC. European Commission, 2002;
- Appropriate Assessment Screening for Development Management. OPR Practice Note PN01. Office of the Planning Regulator. March 2021.
- Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Department of Arts, Heritage and the Gaeltacht, 2014.
- Relevant case law.

4. Screening determination

A SISAA report was prepared (MERC, 2024) to assist the Competent Authority, in undertaking a screening exercise for Appropriate Assessment (AA). The SISAA concluded that the proposed project, without mitigation "*will not give rise to significant effects on any European site*". Accordingly, it concluded that an Appropriate Assessment of the proposed project was not required.

MARA in their screening determination of 27th March 2024 (LIC240006) subsequently determined "*It is uncertain whether the proposal will have a significant/possible effect on a European site*" and further determined Appropriate Assessment was required. Subsequently MARA requested that an Natura Impact Statement (NIS) for the proposed project was prepared.

MARAs Screening for Appropriate Assessment determined:

- Disturbance from underwater noise had the potential for possible temporal impacts on Marine Mammals and Birds.
- Disturbance & displacement by underwater noise had the potential for possible temporal impacts on Birds.
- Potential for in-combination effects related to 18 projects and 3 plans identified by MARA

A list of European sites and the relevant Qualifying Interests (QIs) and Special Conservation Interests (SCIs) screened in are given in **Table 1**.

Table 1. European sites and relevant QIs and SCIs screened in (MARA, LIC240006. 27/3/2024). *MU = Management Unit for the QI species.

European site	Distance	Relevant QI screened in	Reason
Saltee Islands SAC [Site code IE000707]	15.4	*Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise
Slaney River Valley SAC [Site code IE 000781	42	*Phoca vitulina* (Harbour Seal) [1365]	Possible disturbance from underwater noise
Roaringwater Bay and Islands SAC [Site code IE000101]	75	*Halichoerus grypus* (Grey Seal) [1364] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Kenmare River SAC [Site code IE002158]	132	*Phoca vitulina* (Harbour Seal) [1365]	None provided
Glengarriff Harbour and Woodland SAC [Site code IE000090]	150	*Phoca vitulina* (Harbour Seal) [1365]	Possible disturbance from underwater noise
Blasket Islands SAC [Site code IE002172]	188	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Lambay Island SAC [Site code IE000204]	175	*Halichoerus grypus* (Grey Seal) [1364]	Possible disturbance from underwater noise
Lower River Shannon SAC [Site code IE002165]	Within MU*	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
West Connacht Coast SAC [Site code IE002998]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Duvillaun Islands SAC [Site code IE000495]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Rockabill to Dalkey Island SAC [Site code IE003000]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Slyne Head Islands SAC [Site code IE000328]	348/ Within MU	*Halichoerus grypus* (Grey Seal) [1364] *Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	None provided
Inishbofin and Inishshark SAC [Site code IE000278]	373	*Halichoerus grypus* (Grey Seal) [1364]	None provided
Slyne Head Peninsula SAC [Site code IE002074]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Lleyn Peninsula and the Sarnau SAC [Site code UK0013117]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Cardigan Bay SAC [Site code UK0012712]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Moray Firth SAC [Site code UK0019808]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
North Anglesey Marine SAC [Site code UK0030398]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
West Wales Marine SAC [Site code UK0030397]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Bristol Channel Approaches SAC [Site code UK003039]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Chaussée de Sein SAC [Site code FR5302007]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Cap Sizun SAC [Site code FR5300020]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Côtes de Crozon [Site code FR5302006]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Ouessant-Molène [Site code FR5300018]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise

Abers - Côte des legends [Site code FR5300017]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Côte de Granit rose-Sept-Iles [Site code FR5300009]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Tregor Goëlo [Site code FR5310070]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Baie de Saint- Brieuc [Site code FR5300066]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Cap d'Erquy-Cap Fréhel [Site code FR5300011]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard [Site code FR5300012]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Iles de la Colombiere, de la Nelliere et des Haches [Site code FR5310052]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Côte de Cancale à Paramé [Site code FR5300052]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349]	Possible disturbance from underwater noise
Chausey [Site code FR2500079]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Baie du Mont Saint-Michel [Site code FR2500077]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Nord Bretagne DH [Site code FR2502022]	Within MU	*Tursiops truncatus* (Common Bottlenose Dolphin) [1349] *Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Récifs et landes de la Hague SAC [Site code FR2500084]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Anse de Vauville SAC [Site code FR2502019]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Banc et récifs de Surtainville SAC [Site code FR2502018]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Estuaire de la Rance SAC [Site code FR5300061]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Baie de Morlaix SAC [Site code FR5300015]	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	Possible disturbance from underwater noise
Seas off Wexford SPA [IE004237]	0/abuts SPA boundary	Red throated Diver (*Gavia stellata*) [A001] Fulmar (*Fulmarus glacialis*) [A009] Manx Shearwater (*Puffinus puffinus*) [A013] Gannet (*Morus bassanus*) [A016]	Possible disturbance & displacement by underwater noise

		Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Common Scoter (*Melanitta nigra*) [A065] Razorbill (*Alca torda*) [A200] Puffin (*Fratercula arctica*) [A204]	
Cork Harbour SPA [IE004030]	1.2	Cormorant [A017] Shoveler [A056] Little Grebe [A004]	Possible disturbance & displacement by underwater noise
Helvick Head to Ballyquin SPA [IE004192]	6.5	Cormorant (*Phalacrocorax carbo)* [A017]	Possible disturbance & displacement by underwater noise
Mid-Waterford Coast SPA [IE004030]	7	Cormorant (*Phalacrocorax carbo*) [A017]	Possible disturbance & displacement by underwater noise
Saltee Islands SPA	13.5	Fulmar (*Fulmarus glacialis*) [A009] Gannet (*Morus bassanus*) [A016] Cormorant (*Phalacrocorax carbo*) [A017] Shag (*Phalacrocorax aristotelis*) [A018] Guillemot (*Uria aalge*) [A199] Razorbill (*Alca torda*) [A200] Puffin (*Fratercula arctica*) [A204]	Possible disturbance & displacement by underwater noise
Since MARAs Screening for Appropriate Assessment was issued. The following additional species have been added to the European sites listed below			
European site	**Distance km (Approx)**	**Relevant QI screened in**	**Reason**
Lambay Island SAC	175	*Phocoena phocoena* (Harbour Porpoise) [1351]	It is assumed here that MARA may now wish to Screen these sites it.
Kilkieran Bay and Islands SAC	331	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Kenmare River SAC	132	*Phocoena phocoena* (Harbour Porpoise) [1351]	
West Connacht Coast SAC	Within MU	*Phocoena phocoena* (Harbour Porpoise) [1351]	
St Johns Point SAC	566	*Tursiops truncates* (Common Bottlenose Dolphin) [1349]	
Inishmore Island SAC	320	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Buduff Lough and Machair/Trawalua/Mullaghmore SAC	556	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Hook Head SAC	0/abuts SAC boundary	*Phocoena phocoena* (Harbour Porpoise) [1351] *Tursiops truncates* (Common Bottlenose Dolphin) [1349]	
Gweedore Bay and Islands SAC	622	*Phocoena phocoena* (Harbour Porpoise) [1351]	

Carnsore Point SAC	19.1	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Lough Swilly SAC	520	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Belgica Mount Province SAC	222	*Phocoena phocoena* (Harbour Porpoise) [1351] *Tursiops truncates* (Common Bottlenose Dolphin) [1349]	
South-west Porcupine Bank SAC	537	*Tursiops truncates* (Common Bottlenose Dolphin) [1349]	
Blackwater Bank SAC	33	*Phocoena phocoena* (Harbour Porpoise) [1351]	
Porcupine Bank Canyon SAC	560	*Tursiops truncates* (Common Bottlenose Dolphin) [1349]	
Codling Fault Zone SAC	151	*Phocoena phocoena* (Harbour Porpoise) [1351]	

5. Impact assessment

The screening determination identified the following as having the potential for likely significant effects.

- Disturbance from underwater noise with the potential for possible temporal impacts on Marine Mammals and Birds.
- Disturbance & displacement by underwater noise with the potential for possible temporal impacts on Birds.
- Potential for in-combination effects related to 18 projects and 3 plans.

The site specific Qualifying Interests (QIs) for the SACs and Specific Conservation Interests (SCIs) for the SPAs screened in, as giving in table 1, are further discussed below and recommended mitigation measures are proposed.

5.1. Marine Mammals

5.1.1. Grey Seal

Underwater noise resulting from the proposed survey has the potential to impact grey seal should they be within the ZoI of the survey during operations. The foraging range of grey seal is currently believed to be up to 448km (Carter *et al*, 2022). The nearest site designated for grey seal to the proposed project site is the Saltee Islands SAC, which is 15.4km distant at its nearest point. As noted in the SISAA, grey seals are present within this site, and additional SACs, as listed in table 1, throughout their life cycle. The SISAA considered that, as the Conservation Objectives for grey seal in Ireland are relevant to the species within the site and as the distance from the proposed project area to the nearest site was over 15km and the ZoI caused by artificial barriers (acoustic noise) did not extend to this site, no potential for impact on the Conservation Objectives for grey seal within the site was likely. **However, with due regard to the precautionary principle and the screening determination of MARA**, mitigation to ensure the proposed surveys do not give rise to significant effects on any European Site designated for grey seal the mitigation proposed in section 6.2 is proposed.

5.1.2. Harbour Seal

Underwater noise resulting from the proposed survey has the potential to impact Harbour seal should they be within the ZoI of the survey during operations. The foraging range of harbour seal is currently believed to be up to 273km (Carter *et al*, 2022). The nearest site designated for harbour seal to the proposed project site is the Saltee Islands SAC, which is 15.4km distant at its nearest point. As noted in the SISAA, habrbour seals are present within this site, and additional SACs, as listed in table 1, throughout their life cycle. The SISAA considered that, as the Conservation Objectives for harbour seal in Ireland are relevant to the species within the site and as the distance from the proposed project area to the nearest site was over 15km and the ZoI caused by artificial barriers (acoustic noise) did not extend to this site, no potential for impact on the Conservation Objectives for harbour seal within the site was likely. **However, with due regard to the precautionary principle and the screening determination of MARA**, mitigation to ensure the proposed surveys do not give rise to significant effects on any European Site designated for harbour seal the mitigation proposed in section 6.2 is proposed.

5.1.3. Bottlenose Dolphin

Underwater noise resulting from the proposed survey has the potential to impact Bottlenose dolphin should they be within the ZoI of the survey during operations. Bottlenose Dolphin is a QI for Hook Head SAC. As with Grey and Harbour seals, the site specific Conservation Objectives for Bottlenose dolphin are for the species within the site. **However, with due regard to the precautionary principle and the screening determination of MARA**, mitigation to ensure the proposed surveys do not give rise to significant effects on any European Site designated for bottlenose dolphin the mitigation proposed in section 6.1 is proposed.

5.1.4. Harbour Porpoise

Underwater noise resulting from the proposed survey has the potential to impact Harbour porpoise should they be within the ZoI of the survey during operations. As with Grey seals, Harbour seals and Bottlenose dolphins, the site specific Conservation Objectives for Harbour porpoise are for the species within the site. While it is recognised that harbour porpoise associated Hook Head SAC may use the proposed project area for foraging, noise related impacts leading to disturbance to harbour porpoise within their site would not be significant due to the large area of additional foraging habitat for this wide ranging species. Therefore, no potential for impact on the Conservation Objectives for harbour porpoise within the site was considered likely. **However, with due regard to the precautionary principle and the screening determination of MARA**, mitigation to ensure the proposed surveys do not give rise to significant effects on any European Site designated for Harbour porpoise the mitigation proposed in section 6.1 is proposed.

5.2. Seabirds

Table 2 presents a list of SPAs and their associated diving seabirds screened in by MARA. The impacts of underwater noise on diving seabirds is poorly understood and there is a paucity of data on the potential effects of underwater noise on diving seabirds. Recent reviews (e.g. Hartley Anderson Limited. 2020, Harding, 2022) have noted that evidence of harm to diving seabirds as a result of underwater noise is limited, but some studies have shown behavioural effects in diving seabirds. Research suggests (Yelverton *et al*. 1973, Cooper 1982, Stemp 1985, Danil & St Leger 2011) that likely impacts would be confined to an areas within very close proximity of very high-amplitude low-frequency underwater noise (10's of metres) to the sound source. These studies relate to the use of explosives and there is a paucity of data on the effects of other forms of acoustic instrumentation including multibeam and mini-airguns.

Very high-amplitude low-frequency underwater noise may result in acute trauma to diving birds, with several studies reporting mortality of diving birds in close proximity (i.e. tens of metres) to underwater explosions (Yelverton *et al*. 1973, Stemp 1985 and Danil K and St. Leger JA. 2011). Some studies (Cooper J. 1982) reported mortality in Penguins resulting from blasting, but details of the nature of the noise sources and distance to the species are lacking. Others (Danil K and St. Leger JA. 2011) reported mortality in diving seabirds associated with underwater detonation exercises. However, again the distance and profile of the blast is not documented. (Stemp, 1985) reported no significant difference in the abundance of thick-billed murre (Brünnich's guillemot) during seismic surveys using explosives and air guns) over 3 years. Stemp (1985) reported some mortality of birds in close proximity to explosive charges (up to 11 meters), but none associated with airguns.

The existing reviews recommend the need for dedicated research on the impacts of underwater noise from various sound sources on diving seabirds, while also suggesting a range of potential mitigations in the interim.

While potential for impacts from underwater noise is recognised in the SISAA it was considered that any seabirds present in the area would be temporarily displaced by the presence of the vessel and the effects therefore, would be the same as vessel displacement i.e. as few seabirds would be present, impacts on their fitness will not lead to any population-level effects at the SPAs or other adjacent colonies. **However, with due regard to the precautionary principle and the screening determination of MARA**, mitigation to ensure the proposed surveys do not give rise to significant effects on any European Site designated for diving seabirds the mitigation proposed in section 6.3 is proposed.

Table 2. SCI species screened in (MARA, LIC240006. 27/3/2024).

Species	SPA Screened in (MARA)	Description
Red-throated Diver	Seas off Wexford SPA	Red-throated Diver is a SCI for the Seas off Wexford SPA which abuts the proposed project area. During the non-breeding period divers (primarily Great Northern and Red-throated Diver) in the western Irish Sea are known to concentrate in the shallower coastal areas. Red-throated Diver can be quite mobile and it is likely that there is interchange between this SPA and adjacent areas (NPWS, 2024).
Fulmar	Seas off Wexford SPA Saltee Islands SPA	Breeding Fulmar is also a SCI of Saltee Islands SPA. These birds use the marine waters of the Seas off Wexford SPA during the breeding season. As Fulmar can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Islands SPA breeding population. Fulmar breeding at other colonies and non-breeding individuals may also use Seas off Wexford SPA during the breeding period (NPWS, 2024).
Manx Shearwater	Seas off Wexford SPA	Manx Shearwater is a SCI for the Seas off Wexford SPA and the area of marine waters on the south-east has been identified as being an important foraging resource for Manx Shearwater breeding in colonies located around the periphery of the Irish Sea. The area is also recognised as a transiting area for the species on long range foraging trips (NPWS, 2024).
Gannet	Seas off Wexford SPA Saltee Islands SPA	Gannet is a SCI for the Seas off Wexford SPA and Breeding Gannet is also a SCI for Saltee Islands SPA The breeding population exploits the surrounding marine waters of Seas off Wexford SPA during the breeding season. As Gannet can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Island SPA breeding population (NPWS, 2024).
Cormorant	Seas off Wexford SPA Saltee Islands SPA Helvic Head to Ballyquin SPA Cork Harbour SPA Mid-Waterford Coast SPA	Cormorant is a SCI for the Seas off Wexford SPA. It is also an SCI for Saltee Islands SPA, Keeragh Islands SPA*, Mid-Waterford Coast SPA, Raven SPA and Cork Harbour SPA. The breeding Cormorant of Saltee Islands SPA and Keeragh Islands SPA use Seas off Wexford SPA as a foraging resource.
Shag	Seas off Wexford SPA Saltee Islands SPA	Shag is a SCI for the Seas off Wexford SPA. Breeding Shag is also an SCI for Saltee Islands SPA.
Common Scoter	Seas off Wexford SPA	Common Scoter utilise the shallow nearshore coastal waters off County Wexford across the non-breeding period. Common Scoter flocks can be quite mobile and it

		is likely that there is interchange between this SPA and adjacent areas (e.g the Raven SPA*)
Razorbill	Seas off Wexford SPA Saltee Islands SPA	Breeding Razorbill is also a SCI of Saltee Islands SPA. These birds exploit Seas off Wexford SPA during the breeding season. As birds can range large distances from the colony during the breeding season it is likely that this SPA does not contain all relevant foraging resources for the Saltee Islands SPA breeding population. Razorbill from other colonies and nonbreeding individuals may use this SPA during the breeding period (NPWS, 2024).
Puffin	Seas off Wexford SPA Saltee Islands SPA	Breeding Puffin is also a SCI Saltee Islands SPA. This breeding population exploits the surrounding marine waters of Seas off Wexford SPA during the breeding season. As Puffin can range large distances from their nest sites during the breeding season it is likely that the Seas off Wexford SPA does not contain all relevant foraging resources for the Saltee Island SPA breeding population.
Guillemot	Saltee Islands SPA	Breeding Guillemot is also a SCI for Saltee Islands SPA. This species comes ashore to nest from May onwards, colonies are deserted by the first week in August. Wintering at sea, It is thought that some birds winter near their nesting sites.
Shoveler	Cork Harbour SPA	The Species is an SCI for Cork Harbour SPA. Shoveler prefer shallow eutrophic waters rich in plankton, and is unlikely to be actively utilising the waters of the proposed survey area.
Little grebe	Cork Harbour SPA	The Species is an SCI for Cork Harbour SPA. The species favours sheltered coasts, estuaries and coastal lakes and lagoons and is unlikely to be actively utilising the waters of the proposed survey area.

**Not Screened in by MARA*

5.3. Potential for in-combination effects

In their screening determination MARA identified the 18 projects and 3 plans given in table 2 as having the potential for likely significant effects.

Table 3 In-combination effects: Potential projects and plans (MARA, LIC240006. 27/3/2024).

Project No	Application Ref	Project	Approximate Distance from MUL Area	Project Status	Cumulative Effects
1	FS007616	Ruby Offshore Energy. Site Investigations for Offshore Wind Farm, off the coast of Counties Wexford, Waterford and cork	0km	Proposed – Foreshore licence submitted 23/02/23	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
2	FS007471	Floating Cork Offshore Wind Ltd. Site investigations	0km	Proposed – Foreshore licence submitted 22/09/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
3	FS007318	RWE Renewables Ireland East Celtic Ltd. Site investigations for proposed offshore wind park	0km	Proposed – Foreshore licence submitted 10/03/21	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
4	FS007445	Blackwater OWL Offshore Wind Ltd. Marine surveys off the Wexford coast	0km	Proposed – Foreshore licence submitted 09/05/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
5	FS006982	Energia. Site investigations for wind farm off Helvick Head	0km	Approved but not completed – Foreshore licence awarded 28/09/21	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
6	FS007384	Celtic Horizon Offshore Wind Farm Ltd. Site investigations off the coast of Wexford and Waterford	0km	Proposed – Foreshore licence submitted 02/06/21	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
7	FS007464	Bore Array Ltd. Site investigations for wind farm off Co. Wexford	0km	Proposed – Foreshore licence submitted 08/04/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
8	FS007488	Celtic Offshore Renewable Energy. Site investigation off the coast of Wexford and Waterford	0km	Proposed – Foreshore licence submitted 22/04/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
9	FS007621	Péarla Offshore Wind Ltd. Site investigations for export cable for proposed offshore wind farm	0km	Proposed – Foreshore licence submitted 24/10/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap

10	FS007436	Voyage Offshore Array Ltd. Site investigations off coast of Wexford and Waterford	0km	Proposed – Foreshore licence submitted 14/02/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
11	FS007431	Tulca Offshore Array Ltd. Site investigations off County Cork	0km	Proposed – Foreshore licence submitted 14/02/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
12	FS007575	Kinsale Offshore Wind Ltd. Site investigations off County Cork	0km	Proposed – Foreshore licence submitted 26/08/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
13	FS006983	SSE Renewables Celtic Sea. Site investigations off County Cork	0km	Proposed – Foreshore licence submitted 19/03/19	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
14	LIC230017	Microsoft Ireland Operations Ltd. Site investigations for fibre optic cable	0km	Proposed – Maritime Usage Licence submitted 14/12/23	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
15	S0013-03	Port of Cork Company. Dumping at Sea permit	0km	Approved but not completed - permission granted 04/08/2023	Spatial overlap with Doyle shipping Maritime Usage Licence Area.
16	FS007126	Port of Cork. Maintenance Dredging	0km	Approved but not completed - licence granted 08/09/2023	Spatial overlap with Doyle shipping Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
17	FS007376	Uisce Éireann. ADCP Surveys at Cork Harbour	0km	Proposed – Foreshore licence submitted 30/09/22	Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap
18	FS007482	Department of Defence. Dredging at Haulbowline Naval Base	5km	Proposed – Foreshore licence submitted 13/07/23	No Spatial overlap with DECC Maritime Usage Licence Area. Within the CESS. Possible temporal overlap.
	Plans				
1	The Climate Action Plan 2023		These plans promote sustainable development in the maritime environment and particularly Ireland's Climate Action Plan's renewable electricity target of 80% of energy generated from renewable electricity sources by 2030.		No element of the proposed project has the potential to act in-combination with any of the 3 identified projects to result in any negative in-combination effects. Rather, the proposed project may contribute towards positive sustainable development in the maritime environment without the potential to contribute towards negative impacts on any European site.
2	River Basin Management Plans (RBMP)				
3	Designated Maritime Area Plans(DMAPs)				

MARAs screening determination noted that "*Likely significant in-combination effects between this project and the above listed 18 projects and 3 plans on the conservation objectives of Natura 2000 sites considered in this report cannot be excluded at this stage*".

MARAs screening determination does not indicate the basis for their assessment of in-combination. However, MARA has screened in the following:

- Disturbance from underwater noise: Possible temporal impacts on Marine Mammals and Birds
- Disturbance & displacement by underwater noise: Possible temporal impacts on Birds.

It is, therefore, been assumed here that MARA consider that in-combination effects relate to the above two elements.

Project 1-14 listed in table 1 include elements with the same or similar potential for underwater noise impacts. Projects 15,16 and 18 relate to maintenance dredging and dumping at sea which also have an element of underwater noise production. Project 17 relates to the installation of ADCPs, which has very limited potential to contribute to anthropogenically induced underwater noise.

Mitigation to address the potential for in-combination impacts is proposed in section 6.4.

6. Mitigation measures

6.1. Bottlenose dolphin and Harbour porpoise

NPWS (2014) provides guidance to manage the risk to marine mammals from man-made sound sources in Irish waters. This document provides guidance and mitigation measures to address key potential sources of anthropogenic sound that may impact negatively on marine mammals in Irish waters. The guidance set out in NPWS (2014), relates to geophysical acoustic surveys (seismic, multibeam and single beam surveys) and should be fully implemented as detailed below.

1. A qualified and experienced marine mammal observer (MMO) shall be appointed to monitor for marine mammals and to log all relevant events using standardised data forms.
2. Acoustic surveying using the geophysical survey equipment specified for this project shall not commence if marine mammals are detected within a 500m radial distance of the sound source intended for use, i.e., within the Monitored Zone.

<u>Pre-Start Monitoring</u>
Sound-producing activities shall only commence in daylight hours where effective visual monitoring, as performed and determined by the MMO, has been achieved. Where effective visual monitoring, as determined by the MMO, is not possible the sound-producing activities shall be postponed until effective visual monitoring is possible.

An agreed and clear on-site communication signal must be used between the MMO and the Works Superintendent as to whether the relevant activity may or may not proceed, or resume following a break (see below). It shall only proceed on positive confirmation with the MMO.

The MMO shall conduct pre-start-up constant effort monitoring at least 30 minutes before the sound-producing activity is due to commence. Sound-producing activity shall not commence until at least 30 minutes have elapsed with no marine mammals detected within the Monitored Zone by the MMO.

This prescribed Pre-Start Monitoring shall subsequently be followed by a Ramp-Up Procedure which should include continued monitoring by the MMO.

Ramp-Ip Procedure

In commencing an acoustic survey operation using the above equipment, the following Rampup Procedure (i.e., "soft-start") must be used, including during any testing of acoustic sources, where the output peak sound pressure level from any source exceeds 170 dB re: 1µPa @1m:

(a) Where it is possible according to the operational parameters of the equipment concerned, the device's acoustic energy output shall commence from a lower energy start-up (i.e., a peak sound pressure level not exceeding 170 dB re: 1µPa @1m) and thereafter be allowed to gradually build up to the necessary maximum output over a period of 20 minutes.

(b) This controlled build-up of acoustic energy output shall occur in consistent stages to provide a steady and gradual increase over the ramp-up period.

(c) Where the acoustic output measures outlined in steps (a) and (b) are not possible according to the operational parameters of any such equipment, the device shall be switched "on" and "off" in a consistent sequential manner over a period of 20 minutes prior to commencement of the full necessary output.

In all cases where a Ramp-Up Procedure is employed the delay between the end of ramp-up and the necessary full output must be minimised to prevent unnecessary high-level sound introduction into the environment.

Once the Ramp-Up Procedure commences, there is no requirement to halt or discontinue the procedure at night-time, nor if weather or visibility conditions deteriorate nor if marine mammals occur within a 500m radial distance of the sound source, i.e., within the Monitored Zone.

Breaks in sound output

If there is a break in sound output for a period greater than 30 minutes (e.g., due to equipment failure, shut-down, survey line or station change) then all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) must be undertaken.

For higher output survey operations which have the potential to produce injurious levels of underwater sound (see sections 2.4, 3.2) as informed by the associated risk assessment, there is likely to be a regulatory requirement to adopt a shorter 5-10 minute break limit after which period all Pre-Start Monitoring and a subsequent Ramp-up Procedure (where appropriate following Pre-Start Monitoring) shall recommence as for start-up.

Reporting

Full reporting on MMO operations and mitigation undertaken must be provided to the Regulatory Authority as outlined in Appendix 6 of NPWS (2014).

6.2. Mitigation measures: Grey seal and Harbour seal,

In line with the guidance to manage the risk to marine mammals (NPWS, 2014), the mitigation proposed in section 6.1 for Cetacean species are also proposed for grey and harbour seal.

6.3. Mitigation measures: Red throated diver, Fulmar, Manx Shearwater, Gannet, Cormorant, Shag, Common Scoter, Razorbill, Guillemot, Puffin, Shoveler, Little grebe

No reconnaissance surveys are proposed to be conducted within any SPA. However, it is noted that the proposed survey area abuts the Seas off Wexford SPA and is within close proximity (1.2-13.5km) of Cork Harbour SPA, Helvik Head to Ballyquin SPA, Mid-Waterford Coast SPA and Saltee Islands SPA.

To minimise the potential for underwater noise related disturbance or displacement on the diving seabirds associated these SPAs, the mitigation detailed below is proposed.

- The project MMO will also have suitable ornithological expertise in the identification of diving seabirds.
- Where the MMO observers a significant cluster of actively fishing, diving birds in the survey pathway, within 500 m of the vessel and within a 500m buffer zone of an SPA, the survey route will be modified to aim to maintain a 500m buffer distance from the diving birds.

6.4. Mitigation: In-combination effects

Sections 6.1 to 6.3 set out the proposed mitigation to avoid the potential for likely significant effects as a result of:

- Disturbance from underwater noise: Possible temporal impacts on Marine Mammals and Birds
- Disturbance & displacement by underwater noise: Possible temporal impacts on Birds.

As the identified projects (listed in table 3) are likely to result in the same or very similar underwater noise/disturbance effects, the implementation of the proposed mitigation will act to eliminate any potential for in-combination effects on the qualifying interests and special conservation interests of European sites within the Zone of Influence of the project. It should be noted that there is no potential for temporal overlap between the proposed project and project numbers 1-14 as these projects can not take place in advance of the proposed project, as documented in the SISAA (MERC, 2024).

7. Transboundary effects

Transboundary effects relate to the likelihood of significant effects on a site which is part of the Natura 2000 network but lies outside our national boundaries. Since 1 January 2021 nature conservation areas in the UK (including Northern Ireland) are no longer part of the Natura 2000 network (OPR, 2021).

The ZoI of the proposed project has been estimated and all European sites with the potential for project related impacts have been assessed, including *ex-situ* effects. This process and the subsequent assessment did not identify any potential for transboundary effects.

8. Residual impacts

No residual impacts of the proposed project have been identified or are considered possible.

9. Natura Impact Statement Conclusion

This assessment is based on complete, precise and definitive findings in the light of the best scientific knowledge. It objectively concludes that provided the mitigation measures described in this document are fully implemented, **no adverse effect on the integrity** of any European site will occur.

10. References

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