
Ilen Array Offshore Wind Farm Foreshore Licence Application for Site Investigation Works

Non-statutory Environmental Report

Document Control

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This report is produced in support of an Application for a site investigation licence under Section 3 of the Foreshore Act 1933, as amended, and should not be used for any other purpose apart from that expressly stated in this document.

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List of Abbreviations

AA	Appropriate Assessment
ADCP	Acoustic Doppler Current Profiler
AIS	Automatic Identification System
AONB	Area of Outstanding Natural Beauty
API	American Petroleum Institute
BH	Borehole
BIM	Bord Iascaigh Mhara
BSF	Below Seafloor
CO	Conservation Objective
CPOD	Cetacean Passive Acoustic Network
CPT	Cone Penetration Test
DAFM	Department of Agriculture, Food and the Marine
DAHG	Department of Culture, Heritage and the Gaeltacht
DHLGH	Department of Housing, Local Government and Heritage
EC	European Commission
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EPA	Environment Protection Agency
EPS	European Protected Species
EU	European Union
FLO	Fisheries Liaison Officer
GDG	Gavin and Doherty Geosolutions Ltd.
HABs	Harmful Algal Blooms
IBTSWG	International Bottom Trawl Survey Working Group
ICES	International Council for the Exploration of the Sea
IGS	Irish Groundfish Survey
IMO	International Maritime Organization
ISO	International Organization for Standardization
ITM	Irish Transverse Mercator
JNCC	Joint Nature Conservation Committee
LiDAR	Light Detection and Ranging
LSE	Likely Significant Effects
MAP	Marine Area Planning Bill
MARPOL	The International Convention for the Prevention of Pollution from Ships
MBES	Multibeam echosounder
MI	Marine Institute
MMO	Marine Mammal Observer
NIGS	Northern Ireland Groundfish Survey
NIS	Natura Impact Statement
NM	Nautical Mile
NPWS	National Parks and Wildlife Service
NSER	Non-Statutory Environmental Report
OECC	Offshore Export Cable Corridor
OWF	Offshore Wind Farm
PTS	Permanent Threshold Shift
SCA	Seascape Character Area

SCI	Special Conservation Interest
SISAA	Supporting Information for Screening for Appropriate Assessment
SPL	Sound Pressure Level
SSS	Side Scan Sonar
SWCGS	Scottish West Coast Groundfish Survey
SWD	Shellfish Waters Directive
TTS	Temporary Threshold Shift
UK	United Kingdom
UTM	Universal Transverse Mercator
VC	Vibrocore
VMS	Vessel Electronic Monitoring System
WGS	World Geodetic System
WTG	Wind Turbine Generator

Glossary of Terms

Acoustic Doppler Current Profiler (ADCP)	An Acoustic Doppler Current Profiler is a hydroacoustic current meter similar to a sonar, used to measure water current velocities over a depth range using the Doppler effect of sound waves scattered back from particles within the water column.
Boreholes	A borehole is a narrow shaft bored in the ground, either vertically or horizontally.
Cone Penetration Test (CPT)	The cone penetration or cone penetrometer test (CPT) is a method used to determine the geotechnical engineering properties of soils and delineating soil stratigraphy.
Exclusive Economic Zone	Marine area from the territorial seas boundary seaward to a distance of 200 miles or otherwise as agreed under international statute.
Foreshore	The foreshore of Ireland is classed as the land and seabed between the high water of ordinary or medium tides (shown HWM on Ordnance Survey maps) and the twelve-mile limit (12 nautical miles equals approximately 22.24 kilometres). Foreshore also covers tidal areas of rivers particularly estuaries.
Foreshore Licence Application Area	In this report means the area within the 12 NM limit of the Irish coastline where an Application for a Licence under Section 3 of the Foreshore Act 1933, as amended, is being submitted to the Department of Housing, Local Government and Heritage (DHLGH) for a licence to undertake site investigation activities.
Geophysical Surveys	Geophysical surveys are sound-based physical sensing techniques that produce a detail image or map of an area. Ground-based surveys may include: Seismic surveys - vibrations are recorded with geophones to provide information about the properties of rocks.
Geotechnical Surveys	Geotechnical investigation and evaluation which includes methods to acquire and evaluate subsurface information (i.e. drilling and sampling, laboratory testing, cone penetration testing, and pressure meter testing).
Grab Samples	A grab sample is a sample of sediment taken from the seabed.
Habitats Directive	Adopted in 1992, the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.
Interim Campaign	Site Investigation surveys designed to build on the level of detail acquired during the preliminary campaign with the aim of developing a detailed ground model of the site that will feed into the overall design of the wind farm. For this Application it refers to the second geotechnical campaign.
Irish Transverse Mercator (ITM)	Irish Transverse Mercator (ITM) is the geographic coordinate system for Ireland. It was implemented jointly by the Ordnance Survey Ireland (OSi) and the Ordnance Survey of Northern Ireland (OSNI) in 2001. The name is derived from the Transverse Mercator projection it uses and the fact that it is optimised for the island of Ireland. ITM95 (EPSG:2157) is used to map the project area for the Foreshore Licence Map.
LiDAR	LiDAR is a method for measuring distances by illuminating the target with laser light and measuring the reflection with a sensor. Differences in laser return times and wavelengths can then be used to make digital 3-D representations of the target. It has terrestrial, airborne, and mobile applications.
Magnetometer	A magnetometer is a device that measures magnetism—the direction, strength, or relative change of a magnetic field at a particular location. The measurement of the magnetization of a magnetic material is an example
Maritime Area Planning Bill	Legislation reforming consenting within Ireland's marine area, including introducing both an offshore specific consenting regime and extending the powers of the State to enable the State to operate a consenting regime across its entire EEZ and agreed continental shelf.

MARPOL	MARPOL is the main international convention aimed at the prevention of pollution from ships caused by operational or accidental causes. It was adopted at the International Maritime Organization (IMO) in 1973. The Protocol of 1978 was adopted in response to a number of tanker accidents in 1976–1977.
Metocean	Metocean conditions refer to the combined wind, wave and climate (etc.) conditions as found on a certain location. They are most often presented as statistics, including seasonal variations, scatter tables, wind roses and probability of exceedance.
Minister	In this report, Minister means the Minister for Housing, Local Government and Heritage
Multibeam Echosounder (MBES)	An echosounder uses sound waves to measure water depth. A transducer mounted under the vessel emits a pulse which travels through the water to the seafloor and bounces back to a receiver. The time it takes for the signal to return is measured, and because the speed of sound through water (~1500 m/s) is known, the water depth under the boat is measured. This is the basic principle of hydrography and seafloor mapping. A multibeam echosounder (MBES) measures multiple echoes at a time.
Offshore Export Cable Corridor	Area where site investigations will take place to determine the suitability of that area as a route for the export electricity cable from the wind farm to land.
Offshore Wind Farm Area	Area where site investigations will take place to determine the suitability of that area for the installation of Wind Turbine Generators and inter-array cabling.
Pollution Event	A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur.
Preliminary Campaign	Site Investigation surveys early in the project development programme designed to give an overview of the receiving environment with the aim of developing a first stage ground model. For this Application it refers to the first geotechnical campaign.
Side Scan Sonar (SSS)	Side-scan uses a sonar device that emits conical or fan-shaped pulses down toward the seafloor across a wide-angle perpendicular to the path of the sensor through the water, which may be towed from a surface vessel or submarine or mounted on the ship's hull.
Sub-Bottom Profiler	A Sub-bottom profiler is a type of sonar system that produces a 2-dimensional stratigraphic cross section by using acoustic energy to image sub-surface features in an aquatic environment.
Universal Transverse Mercator (UTM)	The UTM (Universal Transverse Mercator) coordinate system divides the world into sixty north-south zones, each 6 degrees of longitude wide. UTM zones are numbered consecutively beginning with Zone 1 and progress eastward to Zone 19. UTM 29N (EPSG:32629) is used to map the project area.
Vibrocore	Vibrocore is the state-of-the-art sediment sampling methodology for retrieving continuous, undisturbed cores. Vibrocorers can work in a variety of water depths and can retrieve core samples at different lengths depending on sediment lithology and project objectives.
Wave Buoy	Wave buoy – used to measure the movement of the water surface as a wave train. The wave train is analysed to determine statistics like the significant wave height and period, and wave direction.
World Geodetic System (WGS)	The World Geodetic System (WGS) is a standard for use in cartography, geodesy, and satellite navigation including GPS. WGS84 is a geocentric reference ellipsoid and a geodetic datum, in that it defines the centre of mass of the earth as its origin, and the direction of the earth's axis as the minor axis of the reference ellipsoid. WGS84 (EPSG:4326) is used to map the project area.

1 Introduction

Ilen Array Ltd. proposes to investigate the feasibility of developing an offshore wind farm, Ilen Array Offshore Wind Farm, in the Atlantic Ocean off the coasts of County Kerry and County Clare.

Ilen Array Ltd. have commissioned Gavin and Doherty Geosolutions (GDG) to prepare this report in support of an Application for a Foreshore Licence under Section 3 of the Foreshore Act 1933, as amended, to carry out site investigation activities to determine the suitability of the Foreshore Licence Application Area for the development of an offshore wind farm.

Ilen Array Ltd. intends to undertake a survey campaign at the proposed Foreshore Licence Application Area in order to inform the location and design of the proposed OWF and OECC to shore. The marine surveys will include geophysical, geotechnical, environmental, metocean and archaeological marine surveys. These surveys are described in detail in the Schedule of Works document which was submitted with this Application and summarised in Section 2 of this report

1.1 Aim of this Report

This report is part of the Foreshore Licence Application to the Foreshore Unit of DHLGH (FS reference number FS007244) and includes information documenting the current state of the environment in the vicinity of the proposed site investigation activities in an effort to quantify the effects, if any, on the environment; it also highlights how the survey design and proposed mitigation measures will be implemented to prevent or minimise impacts on the environment.

As part of this application an Environmental Impact Assessment (EIA) Screening exercise has been undertaken and detailed within Section 3 of this report, which will accompany the Foreshore Licence Application.

The EIA Screening exercise within Section 3 is being submitted as part of the application process and has been prepared to assist the Minister for Housing, Local Government and Heritage to make a determination as to whether EIA is required. EIA, and Screening for EIA, are required only in relation to project types listed in Annex I or Annex II of the Directive 2011/92/EU as revised by Directive 2014/52/EU (EIA Directive) and/or the corresponding classes of project listed in Schedule 5, Parts 1 and 2, of the Planning and Development Regulations 2001, as amended (Planning Regulations).

Section 13A of the Foreshore Act 1933, as amended, applies where the project would be of a class specified in either Part 1 or Part 2 of Schedule 5 of the Planning Regulations. The proposed geotechnical, geophysical, environmental, metocean and archaeological marine surveys do not correspond to any of the project types in Part 1. This report considers whether any of the proposed site investigation activities could be said to fall within a class of project listed in Part 2 (Refer Chapter 3).

This report documents the EIA Screening exercise undertaken, describes the current state of the environment in the vicinity of the proposed site investigation activities in an effort to quantify the effects, if any, on the environment, and highlights how the survey design and proposed mitigation measures will be implemented to prevent or minimise impacts on the environment.

While the evaluation of effects is non-statutory, this report considers the effects of the proposed site investigation activities on environmental aspects such as population and human health, biodiversity (marine benthos, marine mammals, birds, fish and Natura 2000 sites), water, air & climate, socio-economic activities (commercial fisheries, aquaculture, marine traffic, tourism & recreation, material assets and other proposed developments), archaeology and cultural heritage, landscape and seascape and major accidents and disasters. Where relevant, these are addressed in this report.

This report has been prepared in accordance with the following guidance:

1. Guidelines on the Information to be contained in Environmental Impact Assessment Reports, from the Environmental Protection Agency (EPA) (Draft, August 2017)
2. Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, from the Department of Housing, Planning, Community and Local Government (August 2018)
3. OPR Practice Note PN02 Environmental Impact Assessment Screening, from the Office of the Planning Regulator (June 2021)
4. Environmental Impact Assessment of Projects, Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU), from the European Commission (2017)

This report was completed by Catarina Aires and reviewed by Jeannine Dunne. Catarina holds a Master of Science in Marine Biology, specialising in Ecology and Marine Conservation, and has undertaken multiple environmental assessments under both the Habitats and Environmental Impact Assessment Directives as a regulator with Marine Scotland and for multiple applicants for licences in Ireland under the Foreshore Act 1933, as amended, with a particular focus on marine renewable projects. Jeannine is an experienced and professional former Civil Servant with fifteen years of experience of working within both the terrestrial and marine planning systems. Her areas of work included drafting of legislation and in particular permitting legislation within the terrestrial consenting system and the transposition of Directive 2014/52/EU with respect to activities and development under the Foreshore Act 1933, as amended.

1.2 Structure of the Report

This report is structured into the following chapters, to include information relating to the proposed site investigation activities, a description of the known receiving environment baseline for the Foreshore Licence Application Area, as well as the identification of the potential environmental impacts of the proposed site investigation activities and assessment of these impacts on the receiving environment. Specifically, the chapters describe or comprise the following elements:

- Chapter 1 (this chapter): Introduction to the report
- Chapter 2: Describes the proposed site investigation activities
- Chapter 3: Documents the Environmental Impact Assessment Screening exercise and reports on its conclusion
- Chapter 4: Non-statutory environmental assessment
- Chapter 5: Summarises the proposed mitigation measures
- Chapter 6: Presents the conclusions from this report

2 Description of the Proposed Site Investigation Activities

This document is in support of the Foreshore Licence Application which seeks consent to conduct site investigation activities to establish the potential for offshore wind development off the coast of County Kerry. This is not an application for a wind farm development. If the proposed survey work, together with desktop studies and stakeholder engagement, indicates the feasibility of progressing the proposed wind farm project to the next step, that step will need to be progressed in accordance with the National Marine Planning Framework and other relevant legislation in due course, including the new consenting regime for offshore renewable energy through the Maritime Area Planning Bill 2021 (MAP).

2.1 Foreshore Licence Application Area

The proposed site investigation activities area is limited to within 12 NM of the coast, in keeping with the current foreshore legislation which does not provide for site investigation licences beyond that distance.

The site is defined as an irregular polygon which extends approximately 76 kilometres northeast-southwest at its longest point and 23 kilometres southeast-northwest at its widest point, with the depths ranging between 0 – 103 m. The north-western boundary is defined by the Irish 12 NM limit. The Foreshore Licence Application Area measures 629.80 km² in total. The Foreshore Licence Application Area consists of the Offshore Wind Farm (OWF) Area (322.66 km²) and the Offshore Export Cable Corridor (OECC) Area (307.14.6km²). The western boundary of the Foreshore Licence Application area is adjoined by the 12 NM boundary. The Foreshore Licence Application area, OECC area and OWF area are shown in Figure 2-1. The coordinates of the site extent are set out (in UTM29N, WG84 and ITM95) in Table 2-1.

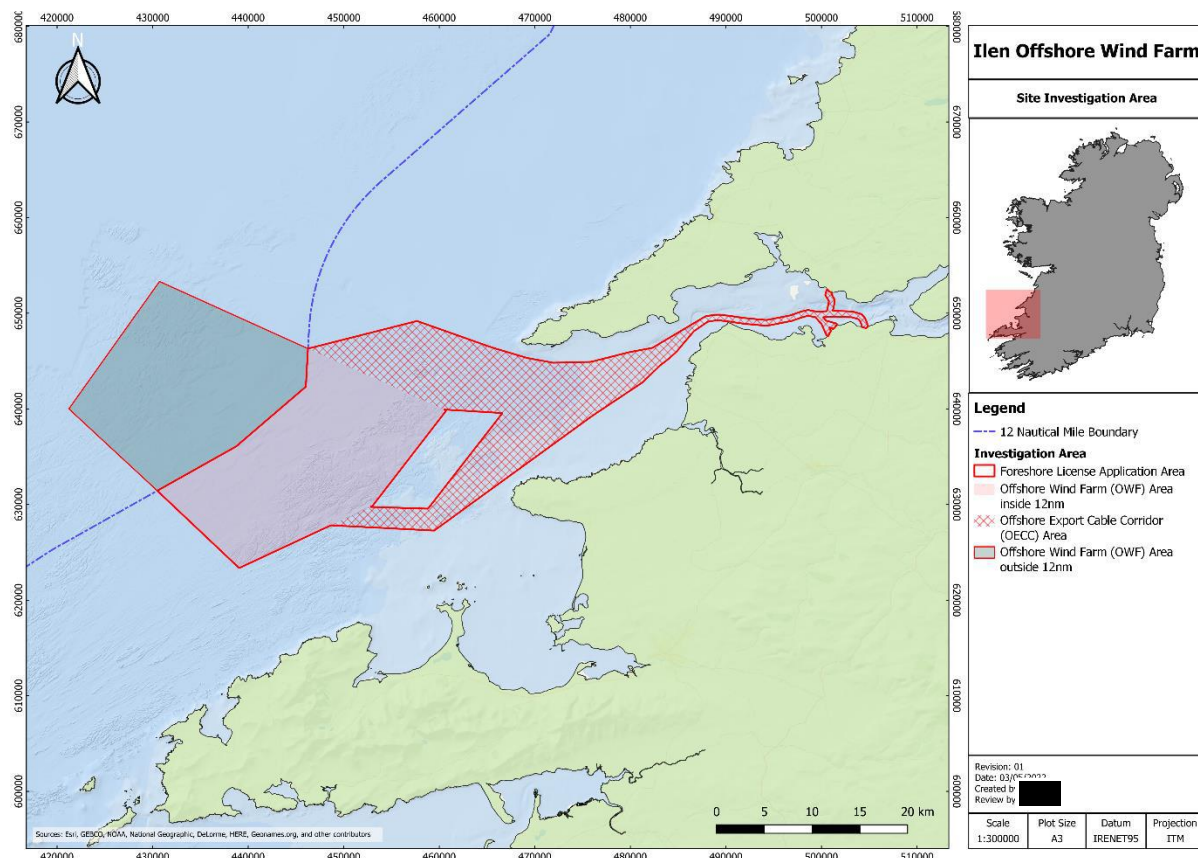


Figure 2-1: Foreshore Licence Application Area (red) and Offshore Wind Farm Area outside 12 NM (grey; for information purposes only)

Table 2-1: Foreshore Licence Application Area Coordinates

Point No.	WGS84 / UTM Zone 29N EPSG:32629		WGS84 Geographic EPSG:4326		IRENET95 / Irish Transverse Mercator EPSG:2157	
	X	Y	Longitude	Latitude	X	Y
1	398534.58	5807493.87	-10.49165	52.40826	430483.70	631448.17
2	414091.21	5822564.04	-10.26690	52.54637	446254.36	646307.90
3	425459.39	5825607.96	-10.09997	52.57541	457668.32	649195.12
4	433364.32	5822938.96	-9.98281	52.55244	465538.58	646415.71
5	437007.75	5821912.04	-9.92888	52.54364	469168.83	645337.98
6	439764.57	5821439.89	-9.88815	52.53971	471919.88	644827.48
7	443721.20	5821592.09	-9.82984	52.54150	475879.72	644924.88
8	447721.76	5822663.12	-9.77103	52.55153	479896.21	645940.74
9	450116.63	5823140.76	-9.73578	52.55605	482298.34	646385.30
10	455608.70	5826509.53	-9.65523	52.58681	487838.55	649678.79
11	456554.17	5826689.24	-9.64130	52.58850	488786.75	649845.43
12	457124.41	5826705.72	-9.63289	52.58869	489357.36	649854.01
13	458178.68	5826599.20	-9.61731	52.58782	490410.42	649732.83
14	458677.05	5826530.84	-9.60995	52.58724	490907.97	649657.55
15	459629.24	5826406.45	-9.59588	52.58619	491858.66	649519.93

16	460522.32	5826328.55	-9.58269	52.58556	492750.89	649429.62
17	462022.84	5826215.27	-9.56053	52.58465	494250.21	649295.50
18	464468.59	5826731.20	-9.52449	52.58945	496703.70	649777.63
19	465633.43	5827151.09	-9.50734	52.59330	497874.64	650181.47
20	466334.68	5827329.03	-9.49700	52.59494	498578.53	650349.72
21	467271.16	5827172.52	-9.48316	52.59360	499513.06	650180.19
22	468309.21	5827222.63	-9.46784	52.59411	500552.04	650215.91
23	468408.10	5827660.49	-9.46643	52.59805	500657.03	650652.50
24	468501.11	5828124.56	-9.46510	52.60223	500756.50	651115.39
25	468511.33	5828306.40	-9.46496	52.60386	500769.24	651297.14
26	468122.04	5828911.49	-9.47077	52.60928	500388.26	651907.77
27	468249.92	5829418.79	-9.46893	52.61385	500523.20	652413.40
28	468346.50	5829532.06	-9.46752	52.61487	500621.37	652525.37
29	468820.01	5829225.14	-9.46049	52.61214	501090.74	652211.80
30	468767.21	5829017.19	-9.46125	52.61027	501035.05	652004.53
31	469121.07	5828467.16	-9.45598	52.60534	501381.36	651449.47
32	469097.55	5828048.42	-9.45628	52.60158	501352.02	651030.96
33	468994.80	5827535.75	-9.45775	52.59696	501242.13	650519.60
34	468932.23	5827257.46	-9.45865	52.59446	501175.69	650242.11
35	469171.05	5827270.78	-9.45513	52.59459	501414.75	650252.12
36	469930.60	5827270.08	-9.44391	52.59463	502174.47	650240.88
37	471044.24	5827225.35	-9.42747	52.59428	503287.74	650180.70
38	471951.63	5826971.67	-9.41405	52.59205	504191.81	649914.38
39	472295.81	5826594.12	-9.40894	52.58867	504530.84	649531.96
40	472539.83	5826069.39	-9.40530	52.58397	504767.64	649003.73
41	472627.26	5825637.82	-9.40397	52.58009	504849.10	648570.85
42	472019.01	5825619.52	-9.41294	52.57990	504240.47	648560.98
43	471966.09	5825880.79	-9.41375	52.58225	504191.15	648823.05
44	471790.70	5826257.93	-9.41637	52.58563	504020.95	649202.71
45	471624.36	5826440.40	-9.41884	52.58726	503857.11	649387.53
46	470950.20	5826628.87	-9.42881	52.58892	503185.40	649585.39
47	469918.28	5826670.32	-9.44404	52.58923	502153.83	649641.16
48	469187.46	5826670.99	-9.45483	52.58920	501422.85	649651.97
49	469112.37	5826666.81	-9.45594	52.58916	501347.68	649648.82
50	468816.93	5826646.67	-9.46030	52.58896	501051.89	649632.78
51	467918.77	5826603.25	-9.47355	52.58852	500152.92	649601.81
52	468254.46	5826235.81	-9.46856	52.58523	500483.59	649229.63
53	469343.78	5825953.57	-9.45245	52.58276	501569.26	648932.21
54	469418.69	5825833.25	-9.45134	52.58168	501642.51	648810.82
55	469067.93	5825405.47	-9.45647	52.57782	501285.73	648387.81
56	468594.07	5825528.22	-9.46348	52.57889	500813.47	648517.16
57	468770.18	5825142.13	-9.46084	52.57543	500984.26	648128.54
58	468476.10	5824611.17	-9.46513	52.57064	500682.76	647601.53
59	468304.62	5824717.65	-9.46767	52.57159	500512.71	647710.42
60	467781.77	5825863.99	-9.47550	52.58186	500005.64	648864.27

61	467120.96	5826589.53	-9.48532	52.58835	499354.74	649599.15
62	466360.08	5826716.70	-9.49657	52.58944	498595.44	649736.89
63	465809.30	5826576.94	-9.50468	52.58815	498042.59	649604.74
64	464632.97	5826152.91	-9.52200	52.58426	496860.10	649196.92
65	464006.77	5826020.81	-9.53123	52.58304	496231.92	649073.48
66	462062.97	5825610.77	-9.55987	52.57922	494281.96	648690.29
67	460473.69	5825730.75	-9.58333	52.58018	492693.95	648832.34
68	459564.30	5825810.07	-9.59676	52.58083	491785.44	648924.29
69	458597.45	5825936.37	-9.61105	52.58189	490820.11	649064.04
70	458107.76	5826003.53	-9.61828	52.58246	490331.22	649138.01
71	457884.36	5826026.11	-9.62158	52.58264	490108.08	649163.68
72	457102.84	5826105.07	-9.63313	52.58329	489327.45	649253.51
73	456619.24	5826091.09	-9.64026	52.58313	488843.54	649246.23
74	455849.02	5825944.70	-9.65161	52.58175	488071.10	649110.48
75	454422.48	5824933.32	-9.67252	52.57254	486630.17	648118.63
76	454214.12	5824680.38	-9.67556	52.57025	486418.24	647868.51
77	452658.88	5822792.41	-9.69824	52.55314	484836.43	646001.61
78	451853.24	5822031.97	-9.71001	52.54624	484020.04	645252.14
79	450931.74	5821307.90	-9.72349	52.53965	483088.25	644540.66
80	449412.77	5819786.10	-9.74565	52.52583	481547.80	643039.52
81	449161.56	5819534.43	-9.74932	52.52354	481293.04	642791.26
82	443943.29	5815957.73	-9.82562	52.49088	476023.80	639285.90
83	427560.29	5803727.38	-10.06422	52.37901	459466.77	627278.81
84	416745.38	5804129.56	-10.22317	52.38109	448654.05	627830.73
85	407210.11	5799527.98	-10.36195	52.33820	439052.01	623359.52
86	420845.61	5806108.30	-10.16341	52.39948	452782.96	629753.36
87	426878.49	5806010.24	-10.07473	52.39944	458816.35	629571.79
88	434527.87	5816107.33	-9.96430	52.49117	466607.80	639565.97
89	428630.64	5816383.06	-10.05120	52.49291	460712.65	639923.48
90	428381.31	5816397.44	-10.05488	52.49301	460463.44	639941.32
91	428642.91	5816284.55	-10.05100	52.49203	460723.56	639824.77
92	421069.14	5806216.17	-10.16015	52.40049	453008.06	629858.17

2.2 Site Investigation Activities

The objective of the site investigation activities is to determine detailed site conditions including soil stability, the seafloor and subsurface geological characteristics, metocean conditions and environmental characteristics.

This includes detailed mapping of geology, seabed features (i.e. archaeology) and baseline environmental conditions within the site. This will provide all geotechnical design data for the proposed OWF and OECC development and confirmation of seabed character. The data will also allow impacts to be predicted, and subsequently appropriate mitigation measures to be developed. It may

also be used at a later stage to provide a baseline for the purpose of post construction and operational stage monitoring, as well as decommissioning studies.

The proposed programme of site investigations to be undertaken within the Foreshore Licence Application Area is summarised in Table 2-2 below and discussed in more detail in the Schedule of Works document accompanying this Application.

The exact technical specifications of the equipment to be used will not be known until the survey contract has been awarded. However, a description of the typical equipment and survey parameters is described in the Schedule of Works document accompanying this Application. For the purposes of this report, typical acoustic properties of equipment are provided. The acoustic frequencies given below are typical of the frequencies used in surveys to obtain information suitable for offshore wind in these water depths. The vessel will be transiting at a relatively slow speed (c. 5 knots) throughout the survey activities and normal speeds whilst transiting to survey site.

All efforts will be made to follow survey recommendations outlined in the Guidance on Marine Baseline Ecological Assessments & Monitoring Activities for Offshore Renewable Energy Projects Part 1 and 2 (DCCAE, April 2018), where the specific timeframes are indicated for the survey provision.

Table 2-2: Summary of proposed survey methodologies

Survey	Methods	Purpose
Hydrographical and Geophysical	Multibeam Echosounder (MBES)	MBES is a system for collecting detailed topographical data of the seabed. Typical equipment includes the Kongsberg EM3002D multi-beam system with mounting system including AML SV Smart Probe, Kongsberg EM 2040 or similar. For these surveys the equipment will operate at a typical central frequency of 200 - 400kHz (700kHz optional) with sound pressure levels in the range of 200-228dB re1μPa @1m.
	Side Scan Sonar (SSS)	SSS surveys are used to determine sediment characteristics and seabed features. The EdgeTech 4200 may be taken as an indicate example of an SSS device and for these surveys will have a potential operating frequency range of approximately 230/540kHz in the offshore area and 540/850kHz in the shallower nearshore area with sound pressure levels of 228dB re1μPa @1m.
	Magnetometer	A magnetometer is used to identify magnetic anomalies and hazard mapping for metal obstructions, shipwrecks and unexploded ordnance on the surface and in the shallow sub-surface. The Geometrics G-882 can be taken as an indicative equipment example, it is a passive device (i.e. it does not emit any sound waves into the marine environment).
	Sub-bottom Profiling (SBP)	SBP is used to develop an image of the subsurface, identifying different strata encountered in the shallow sediments. The Innomar SES-2000 Medium or Medium 100 are indicative examples of parametric system with primary and secondary frequency ranges of 85-115kHz and 2-22kHz, respectively, and sound pressure levels of up to 247 dB (typically operated at <200dB) re1μPa @ 1m, which would be used in both nearshore and offshore areas. The Applied Acoustics AA301 is an indicative example of a boomer, with sound pressure levels in the range of 208-215dB re1μPa @ 1m which would be used in the nearshore shallower area. The applied Acoustics Duraspark 400 is an indicative example of a sparker system used in sub-bottom profiling, with sound pressures in the range of 204-216dB re1μPa @1m.

Survey	Methods	Purpose
Geotechnical	Boreholes	Up to 40 no. boreholes will be required for the Preliminary Campaign. Boreholes may be up to 80m deep within the OWF area however within the OECC area they will likely be around 20 m deep. All drilling equipment used will follow the relevant ISO and API technical specifications for drilling equipment.
	Cone Penetration Tests (CPT)	CPTs are a method used for testing the soils strength parameters. CPTs can be performed as either Seabed CPTs or as Down Borehole CPTs. Up to 247 no. CPTs will be required for the Preliminary Campaign. The spacing interval will be determined by the variability and level of understanding of the shallow geology. The final number and location of SI points will be informed by the geophysical survey results.
	Vibrocore / Gravity Corer	Vibrocore (VC) and Gravity Corer (GC) are two methods of collecting un-consolidated seabed samples. Up to 273 no. sample locations for either vibrocore or gravity sampling with a target depth of 6m BSF will be required for the Preliminary Campaign.
Metocean	Floating LiDAR	Up to 2 floating LiDAR buoys will be deployed to measure the wind resource within the OWF Area. Deployment of this buoy will include anchor points on the seafloor. LiDAR may be deployed for a period of between 12 to 24 months.
	Acoustic Doppler Current Profiler (ADCP)	Up to 5 ADCPs may be used to examine wave and current conditions in the Foreshore Licence Application Area. This equipment is installed on the seabed and anchored with a suitable mooring structure. It is generally a short-term deployment used to gather seasonal data (e.g. winter storm data) however may be deployed for longer.
	Wave Buoy	Up to 2 wave rider buoys may be deployed to measure wave heights and direction to feed into the detailed design of the project within the OWF area. They will be moored to the seabed by a suitably sized mooring structure.
Ecology	Bird Survey	Identify bird species distribution and behaviour within the Foreshore Licence Application Area using non-intrusive aerial surveys. This does not require a licence under the Foreshore Act 1933, as amended and is included for information only.
	Fisheries Survey	Identify fish species distribution within the Foreshore Licence Application Area. Exact details of monitoring required will be determined through engagement with the relevant authorities such as SFPA, the Marine Institute and through local knowledge where appropriate.
	Benthic Ecology (subtidal benthic survey, intertidal habitat walkover survey)	<p>This survey is designed to identify the expected benthic communities and habitats within the Foreshore Licence Application Area. This may consist of an intertidal walkover survey with a biotope mapping exercise of the intertidal part of the OECC and its proposed landfalls with identification of the existing habitats. Where appropriate, core/quadrat sampling and hard substrate quadrat sampling will be carried out.</p> <p>In the intertidal area features of conservation importance such as reefs will be identified by means of visual inspection and mapped. Where the Annex I Habitat reef is a qualifying interest for an SAC, MNCR Phase II surveys will be used to survey pre-selected sites within the SAC. MNCR Phase I surveys will be used for all other intertidal reef.</p> <p>Subtidal sample locations may be subject to drop down video in advance of sampling. In the subtidal area features of conservation</p>

Survey	Methods	Purpose
		importance such as reefs will be identified by means of visual inspection. There will be up to 273 no. subtidal locations within the Foreshore Licence Application Area and typically up to 4 samples will be taken at each location.
	Marine Mammal Survey	Identify marine mammal species distribution within the Foreshore Licence Application Area. This does not require a licence under the Foreshore Act 1933, as amended and is included for information only. The marine mammal observational studies will be run concurrently with the at site bird surveys.
	Marine Mammal Acoustic Monitoring	Marine mammal acoustic monitoring using CPODs deployed on the seabed. SoundTrap hydrophones may be deployed alongside the CPODs for periods throughout the monitoring campaign. Either 2 permanent sites will be selected, or the 2 sites will be relocated every 3 months during battery change. The CPOD locations are subject to archaeological survey results.
Archaeology	Underwater Archaeology	Identification and assessment of metallic and other targets recorded during the marine geophysical surveys.

Figure 2-2 below shows the indicative survey locations across the Foreshore Licence Application Area.

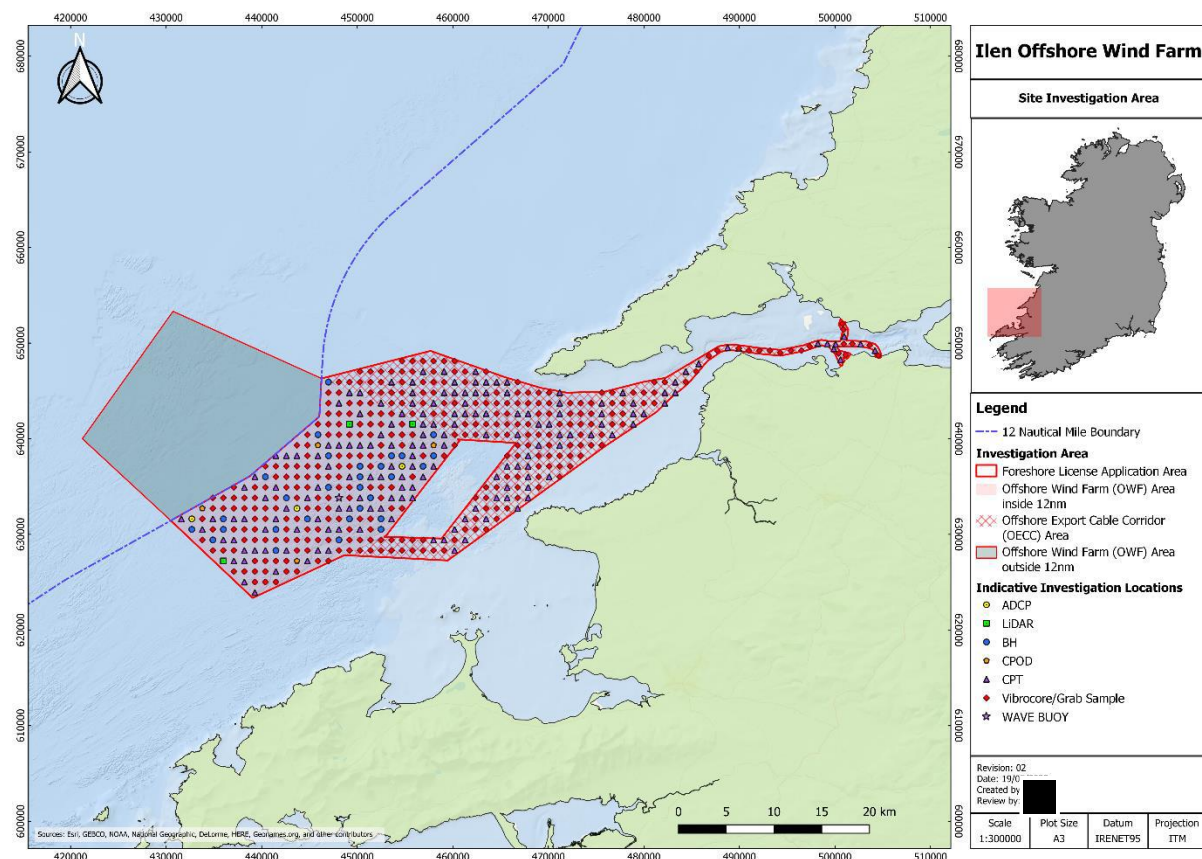


Figure 2-2: Indicative Geotechnical and Metocean Survey Locations

2.3 Survey Schedule

Subject to the award of a Foreshore Licence, as well as favourable weather conditions, Ilen Array Ltd. propose a site investigation activities schedule that will be phased over a total of 5 years.

The intention is to begin survey activities as soon as feasible following award of the Foreshore Licence, possibly in Spring of 2023 with a staged programme of investigations over the subsequent four years (2024, 2025, 2026, 2027), capitalising on suitable weather windows over the total period of five years. This phased approach will progress the overall development towards detailed design stage. Procurement of survey contractors will be undertaken to ensure that suitable weather windows can be utilised as soon as possible following licence award. The exact survey mobilisation dates will be known at that point in the process. For further details on the proposed site investigation activities please see the Schedule of Works document that has been provided in support of the Application.

3 EIA Screening

3.1 EIA Directive Requirements

Article 2(1) of the EIA Directive¹ provides:

“Member States shall adopt all measures necessary to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects on the environment. Those projects are defined in Article 4.”

Article 4(1) requires that *“...projects listed in Annex I shall be made subject to an assessment...”*. EIA is therefore mandatory for the project types listed in Annex I. Article 4(2) requires that Member States must determine for Annex II project types whether EIA is required, through

- a) a case-by-case assessment, or
- b) thresholds or criteria set by the member State.

The Foreshore Acts 1933, as amended transposes the Article 4 requirement through Section 13A as follows:

“13A.— (1)(a) The appropriate Minister shall, as part of his consideration of a relevant application, in accordance with paragraph (b), ensure that, before a decision on the application is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to an environmental impact assessment.

(b) (i) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a relevant application for consent where the proposed development would be of a class specified in—

(I) Part 1 of Schedule 5 of the Planning and Development Regulations 2001, and either—

(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or

(B) no quantity, area or other limit is specified in that Part in respect of the development concerned,

or

(II) Part 2 of Schedule 5 of the Planning and Development Regulations 2001 and either—

(A) such development would exceed any relevant quantity, area or other limit specified in that Part, or

¹Environmental Impact Assessment (EIA) Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU)

(B) no quantity, area or other limit is specified in that Part in respect of the development concerned.

ii) An environmental impact assessment shall be carried out by the appropriate Minister in respect of a proposed development where such development—

(I) would be of a class specified in Part 2 of Schedule 5 of the Planning and Development Regulations 2001 but does not exceed the relevant quantity, area or other limit specified in that Part, and

(II) the appropriate Minister determines that the proposed development would be likely to have significant effects on the environment.”

If a project is not of a class listed in Annex I or II of the EIA Directive, or Schedule 5 of the Planning Regulations, the EIA Directive is not applicable².

Part 1 of Schedule 5 of the Planning and Development Regulations 2001, as amended (Planning Regulations) lists the project types for which EIA is mandatory, transposing Annex I of the EIA Directive. Part 2 lists project types for which EIA is mandatory if a specified threshold is exceeded. For all other project types listed in Part 2, corresponding to Annex II, which do not exceed a threshold or for which no threshold is set, a screening analysis and determination are required on a case-by-case basis. An EIA is also required for projects which do not exceed the threshold, but where the Minister determines that the proposed project will be likely to have significant effects on the environment.

3.2 Approach to EIA Screening

The Office of the Planning Regulator issued a practice note, OPR Practice Note PN02, on Environmental Impact Assessment Screening for development proposals (Office of the Planning Regulator, 2021). While the aim of the Practice Note is to provide guidance for compliance with the planning legislation, it provides useful guidance for EIA Screening for other consent regimes.

The Practice Note recommends a step-by-step approach to EIA Screening, as follows:

Step 1: Understanding the proposal

The first step comprises the following tests:

- a) Is the proposed development a project as per the EIA Directive?
If not, then the proposed development is not subject of EIA Directive, no screening is required, and no EIA is required.
- b) Is the project listed in Schedule 5 Part 1 or does it meet or exceed the thresholds in Part 2 of the Planning and Development Regulations, SI 600 of 2001, as amended?
If it does, no screening is required and EIA is mandatory.
- c) Is the project sub threshold?

² See *Uí Mhuirín* [2019] IEHC 824 specifically in connection with Foreshore Act 1933, as amended. See also Case C-156/07, *Aiello & Others*; Case C-275/09, *Brussels Hoofdstedelijk Gewest*; *Kavanagh* [2020] IEHC 259; and *Sweetman* [2020] IEHC 39.

If it is, then the project must proceed to Step 2, as preliminary examination is required.

Step 2: Preliminary Examination & Conclusion

This step consists of a preliminary examination of, at least, the nature, size, **or** location of the development, considering:

- **Nature** of the development including production of wastes and pollutants
- **Size** of the development
- **Location** of the development including proximity to ecologically sensitive sites and the potential to affect other environmental sensitivities in the area

Step 2 will have one of three outcomes:

- a) There is no real likelihood of a significant effect on the environment and no further action is required. The reasons for this conclusion will be recorded.
- b) There is significant doubt as to the effects on the environment; the project must proceed to Step 3, as a formal screening determination is required.
- c) There is a real likelihood of a significant effect on the environment and an EIA is required.

Step 3: Formal Screening Determination

In this step, a Screening exercise must be carried out in order to determine if the proposal is likely to have significant effects on the environment. In making the determination, the planning authority must have regard to Schedule 7 criteria, Schedule 7A information, results of other relevant EU assessments, the location of sensitive ecological sites, or heritage or conservation designations. Mitigation measures may be considered.

The Screening Determination must record the outcome of the Screening exercise and state the main reasons and considerations, with reference to the relevant criteria listed in Schedule 7 of the Regulations and mitigation if relevant.

3.3 Screening for Mandatory EIA

3.3.1 Part 1 of Schedule 5

All of the project types in Part 1 have been considered in the preparation of this report. The proposed site investigation activities do not constitute a project type or class listed in Part 1 of Schedule 5 of the Regulations.

3.3.2 Part 2 of Schedule 5

All of the project types in Part 2 have been considered in the preparation of this report. The following class listed in Part 2 of Schedule 5 is the only class that is considered to be relevant to the proposed surveys, and is therefore given more detailed consideration below:

“Class 2 Extractive Industry

2 (e) With the exception of drilling for investigating the stability of the soil, deep drilling, consisting of—

(iv) any other deep drilling, except where, in considering whether or not an environmental impact assessment will be carried out—

(IV) it is decided, in accordance with section 13A of the Foreshore Act 1933 (No. 12 of 1933) (in this subparagraph referred to as the “Act of 1933”), by the appropriate Minister (within the meaning of the Act of 1933) that the drilling concerned will not have a significant effect on the environment,”

The proposed site investigation activities include geotechnical surveys comprising the drilling of up to 140 no. boreholes distributed by two survey campaigns: Preliminary and Interim campaigns. The boreholes that will be undertaken at the landfall locations will be shallow in nature (generally c. 15-20 m and in some cases up to 40 m deep) to investigate the stability of the soils to determine the most suitable installation method for the cable at the landfall point. CPT and Vibrocores (generally with a target depth of down to 6 m) will be undertaken along the OECC to inform a refined cable route location and design.

Within the OWF, boreholes and seabed CPTs will likely be the preferred methods to investigate the stability of the soil, to determine the most suitable location and installation method for the WTGs. Boreholes will generally have a target depth of up to 80m (both sampling and CPT boreholes) and seabed CPTs will likely have a target depth of 30m, although might reach 45m in some seabed conditions.

The purpose of the drilling of the boreholes and core holes is to investigate the stability of the soil at the potential turbine foundation locations and on the export cable route.

As deep drilling for investigating the stability of the soil is excluded from Class 2(e), the proposed site investigation activities are not of a class listed in Part 2 of Schedule 5 of the Regulations and, therefore, the proposed site investigation activities are exempt as per the EIA Directive.

3.4 Conclusion of the EIA Screening

In answering **Step 1, question (a): Is the proposed development a project as per the EIA Directive?** as per OPR Practice Note 02, the answer is **‘No’**, and the conclusion is that the proposed site investigation activities are not subject of the EIA Directive, no Screening is required, and no EIA is required.

4 Non-statutory Environmental Assessment

A description of the known receiving environment baseline for the Foreshore Licence Application Area, as well as the identification of the potential environmental impacts of the proposed site investigation activities and assessment of these impacts on the receiving environment, is included in a number of reports submitted in support of the Application. These are:

- Supporting Information for Screening of Appropriate Assessment (SISAA)
- Natura Impact Statement (NIS)
- European Protected Species Risk Assessment for Annex IV Species (EPSRA)

The reports above are often referred to within this section of the Non-statutory Environmental Report. Table 4-1 sets out, for each of the documents listed above, the specific sections and sub-sections where relevant information for this Non-statutory Environment Assessment can be found.

Table 4-1: Relevant sections and sub-section in other reports submitted in support of the Application

Report	Section/Subsection	Content Description
Supporting Information for Screening of Appropriate Assessment (SISAA)	Section 3. Potential Environmental Impacts 3.1 Physical Disturbance to Marine Benthic Communities 3.2 Disturbance from vibration and underwater noise 3.3 Injury due to Collision 3.4 Physical and noise disturbance to bird species 3.5 Pollution Event	Describes potential environmental impacts from the proposed site investigation activities on the receiving environment
	Section 4.2 Identification of relevant SPAs and SACs Section 4.2.1 SACs and Annex I Habitats Section 4.2.2 SACs and Annex II Species Section 4.2.3 SPAs and Special Conservation Interests (Birds)	Describes the Natura 2000 considered relevant to the site investigation activities, i.e. the Special Protected Areas and their Special Conservation Interests and the Special Areas of Conservation, designated Annex I Habitats and designated Annex II Species considered relevant to be included for Appropriate Assessment Stage 1 Screening (and subsequent Stage 2 Appropriate Assessment where necessary)
	Section 5.3 Screening Assessment of Likely Significant Effects (LSE)	Assesses the likelihood of significant effects from the proposed site investigation activities on the integrity of relevant Natura 2000 sites and their Conservation Objectives (COs)
	Section 5.4 Screening for In-combination effects	Describes other known or proposed plans and projects in the vicinity of the site investigation activities, including other proposed wind farm and export cable route activities known at the time of submission of the Application documentation, and their interactions with the proposed site investigation activities Assesses the likelihood of in-combination significant effects, from the proposed site investigation activities with the described plans, and projects on the integrity relevant Natura 2000 sites and their Conservation Objectives
	Section 5.5 Screening Statement Outcome	Details the conclusions of the AA Stage 1 Screening and identifies the Natura 2000 sites screened in for a Stage 2 AA, together with the impacts that may

Report	Section/Subsection	Content Description
		result in LSE to their COs in the absence of mitigation measures
Natura Impact Statement (NIS)	Section 4 Impact Assessment	Assesses the likelihood of significant effects from the proposed site investigation activities on the integrity of relevant Natura 2000 sites and their Conservation Objectives (COs) Proposes measures necessary to avoid, reduce or offset any identified negative effects
	Section 4.7 Cumulative Impacts	Describes other plans and projects in the Zone of Influence of the proposed site investigation activities, and assesses the likelihood of in-combination significant effects, from the proposed site investigation activities with the described plans and projects, on the integrity relevant Natura 2000 sites and their Conservation Objectives Proposes measures necessary to avoid, reduce or offset any identified negative effects
	Section 5 AA Conclusion	Presents the conclusion of the Stage 2 AA described in the sections above
European Protected Species Risk Assessment for Annex IV Species (EPSRA)	Section 3 Annex IV Species Section 5.1 Identification of Relevant Annex IV Species	Describes the European Protected Species (Annex IV species) which may be found on site
	Section 4 Potential Environmental Impacts 4.1 Disturbance from vibration and underwater noise 4.2 Injury due to Collision 4.3 Pollution Event	Describes potential environmental impacts from the proposed site investigation activities on Annex IV species
	Section 5.2 Impact Assessment	Assesses the impacts identified above on Annex IV species in the absence of any mitigation measures
	Section 6. Protection measures to prevent harm to Annex IV species	Proposes measures necessary to avoid, reduce or offset any identified negative effects

This Non-statutory Environmental Assessment considers potential impacts from the proposed site investigation activities under the following aspects:

1. Population and Human Health
2. Marine Benthos
3. Natura 2000 Sites
4. Marine Mammals
5. Birds
6. Fish and Shellfish Ecology
7. Water, Air and Climate
8. Commercial Fisheries
9. Aquaculture
10. Marine Traffic
11. Tourism and Recreation
12. Material Assets
13. Archaeology and Cultural Heritage
14. Landscape and Visual
15. Major Accidents and Disasters

4.1 Population and Human Health

One of the main concerns from Ilen Array Ltd. is that individuals or communities should experience no significant diminution in their quality of life from the direct or indirect effects arising from the proposed site investigation activities. Ultimately, all the impacts of a project or development have the potential to impinge on human health, directly and indirectly, positively and negatively. The key issues examined in this section include human health and health and safety.

All proposed site investigation activities will be conducted in accordance with all relevant Health and Safety Legislation and Regulations, and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention. With the implementation of these, there will be no impact nor any significant effects on human health and on health and safety during the proposed survey activities.

4.2 Marine Benthos

The benthic macroinfaunal invertebrates are considered a useful group to study in species assemblage mapping and environmental monitoring studies. This is because the majority of species are essentially sedentary, and their natural distributions usually show good relationships with their sedimentary habitat and depth. Their responses to environmental change can be easily measured. They are an integral part of marine food webs and can be an important source of food for certain commercially exploited fish and invertebrates. More practically, the taxonomic literature on the worms, crustaceans, molluscs and echinoderms that are the main components of the macrofauna is generally good. Soft-bottom benthos can be readily sampled by grabs, dredges and trawls.

Available data regarding benthic habitats present in the Foreshore Licence Application Area, as per the European Nature Information System (EUNIS) Classification³ (EUSeaMap, 2021), indicate that the main benthic habitats present are predominantly of the *A.5 – Sublittoral sediment* EUNIS Level 2 habitat type, based on substrate type and biological zones. The sediments underlying these habitats are comprised predominantly of coarse sediment with significant areas of rock. Water depths across the Foreshore Licence Application Area range from 0 m (at the proposed landfalls) to 103 m.

Figure 4-1 below illustrates the predominant habitat types present in the proposed survey area, classified down to EUNIS Level 4 habitat types where possible. Detailed descriptions of these habitat types are also provided in the paragraphs below.

³ <https://eunis.eea.europa.eu/habitats-code-browser.jsp>

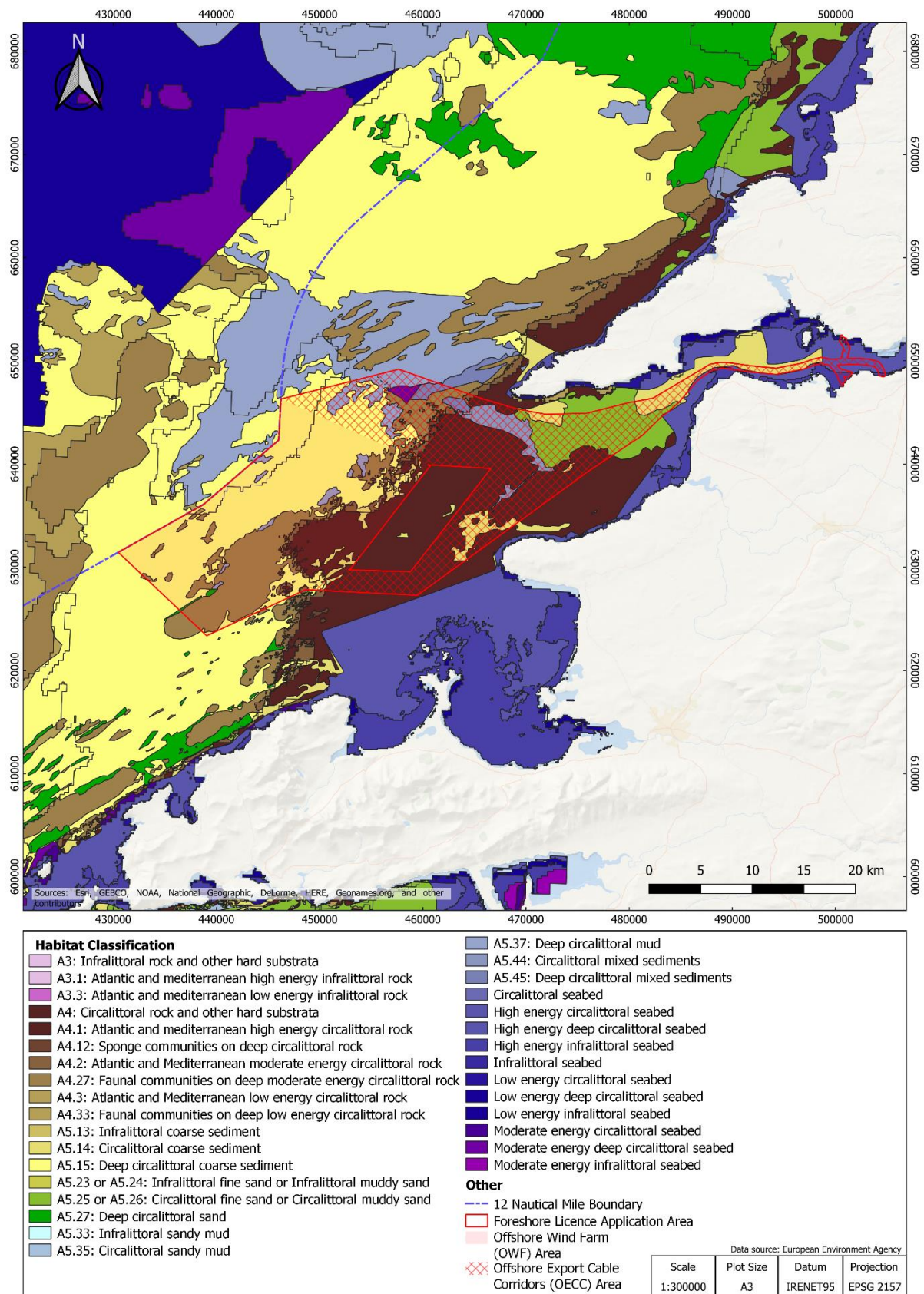


Figure 4-1: Predominant Benthic Habitat Type as per EUNIS Classification (EUSEaMap, 2021)

A4.1 - Atlantic and Mediterranean high energy circalittoral rock

Occurs on extremely wave-exposed to exposed circalittoral bedrock and boulders subject to tidal streams ranging from strong to very strong. Typically found in tidal straits and narrows. The high energy levels found within this habitat complex are reflected in the fauna recorded. Sponges such as *Pachymatisma johnstonia*, *Halichondria panicea*, *Esperiopsis fucorum* and *Myxilla incrustans* may all be recorded. Characteristic of this habitat complex is the dense 'carpet' of the hydroid *Tubularia indivisa*. The barnacle *Balanus crenatus* is recorded in high abundance on the rocky substrata. On rocky outcrops, *Alcyonium digitatum* is often present.

A4.12 - Sponge communities on deep circalittoral rock

This habitat type typically occurs on deep (commonly below 30 m depth), wave-exposed circalittoral rock subject to negligible tidal streams. The sponge component of this biotope is the most striking feature, with similar species to the bryozoan and erect sponge habitat type (A4.131) although in this case, the sponges *Phakellia ventilabrum*, *Axinella infundibuliformis*, *Axinella dissimilis* and *Stelligera stuposa* dominate. Other sponge species frequently found on exposed rocky coasts are also present in low to moderate abundance. These include *Cliona celata*, *Polymastia boletiformis*, *Haliclona viscosa*, *Pachymatisma johnstonia*, *Dysidea fragilis*, *Suberites carnosus*, *Stelligera rigida*, *Hemimycale columella* and *Tethya aurantium*. The cup coral *Caryophyllia smithii* and the anemone *Corynactis viridis* may be locally abundant in some areas, along with the holothurian *Holothuria forskali*. The soft corals *Alcyonium digitatum* and *Alcyonium glomeratum* are frequently observed. The bryozoans *Pentapora foliacea* and *Porella compressa* are also more frequently found in this deep-water habitat type.

A4.2 - Atlantic and Mediterranean moderate energy circalittoral rock

Mainly occurs on exposed to moderately wave-exposed circalittoral bedrock and boulders, subject to moderately strong and weak tidal streams. This habitat type contains a broad range of biological subtypes, from echinoderms and crustose communities (A4.21) to Sabellaria reefs (A4.22) and circalittoral mussel beds (A4.24).

A4.27 - Faunal communities on deep moderate energy circalittoral rock

These communities populate hard substrata with low hydrodynamics and strong sedimentation

A4.33 - Faunal communities on deep low energy circalittoral rock

These communities populate hard substrata with low hydrodynamics and strong sedimentation

A5.13 - Infralittoral coarse sediment

Moderately exposed habitats with coarse sand, gravelly sand, shingle and gravel in the infralittoral, are subject to disturbance by tidal streams and wave action. Such habitats found on the open coast or

in tide-swept marine inlets are characterised by a robust fauna of infaunal polychaetes such as *Chaetozone setosa* and *Lanice conchilega*, cumacean crustacea such as *Iphinoe trispinosa* and *Diastylis bradyi*, and venerid bivalves. Habitats with the lancelet *Branchiostoma lanceolatum* may also occur.

A5.14 - Circalittoral coarse sediment

These are tide-swept circalittoral coarse sands, gravel and shingle generally in depths of over 15-20m. This habitat may be found in tidal channels of marine inlets, along exposed coasts and offshore. This habitat, as with shallower coarse sediments, may be characterised by robust infaunal polychaetes, mobile crustacea and bivalves. Certain species of sea cucumber (e.g. Neopentadactyla) may also be prevalent in these areas along with the lancelet *Branchiostoma lanceolatum*.

A5.15 - Deep circalittoral coarse sediment

These are offshore (deep) circalittoral habitats with coarse sands and gravel or shell. This habitat may cover large areas of the offshore continental shelf although there is relatively little quantitative data available. Such habitats are quite diverse compared to shallower versions of this habitat and generally characterised by robust infaunal polychaete and bivalve species. Animal communities in this habitat are closely related to offshore mixed sediments and in some areas settlement of *Modiolus* larvae may occur and consequently these habitats may occasionally have large numbers of juvenile *M. modiolus*. In areas where the mussels reach maturity their byssus threads bind the sediment together, increasing stability and allowing an increased deposition of silt leading to the development of the biotope A5.622.

A5.25 - Circalittoral fine sand

Clean fine sands with less than 5% silt/clay in deeper water, either on the open coast or in tide-swept channels of marine inlets in depths of over 15-20 m. The habitat may also extend offshore and is characterised by a wide range of echinoderms (in some areas including the sea urchin *Echinocyamus pusillus*), polychaetes and bivalves. This habitat is generally more stable than shallower, infralittoral sands and consequently supports a more diverse community.

A5.26 - Circalittoral muddy sand

Circalittoral non-cohesive muddy sands with the silt content of the substratum typically ranging from 5% to 20%. This habitat is generally found in water depths of over 15-20 m and supports animal-dominated communities characterised by a wide variety of polychaetes, bivalves such as *Abra alba* and *Nucula nitidosa*, and echinoderms such as *Amphiura* spp. and *Ophiura* spp., and *Astropecten irregularis*. These circalittoral habitats tend to be more stable than their infralittoral counterparts and as such support a richer infaunal community.

A5.27 - Deep circalittoral sand

Offshore (deep) circalittoral habitats with fine sands or non-cohesive muddy sands. Very little data is available on these habitats however they are likely to be more stable than their shallower counterparts and characterised by a diverse range of polychaetes, amphipods, bivalves and echinoderms.

A5.37 - Deep circalittoral mud

In mud and cohesive sandy mud in the offshore circalittoral zone, typically below 50-70 m, a variety of faunal communities may develop, depending upon the level of silt/clay and organic matter in the sediment. Communities are typically dominated by polychaetes but often with high numbers of bivalves such as *Thyasira* spp., echinoderms and foraminifera.

A5.44 - Deep circalittoral mud

Mixed (heterogeneous) sediment habitats in the circalittoral zone (generally below 15-20 m) including well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in or lying upon mud, sand or gravel. Due to the variable nature of the seabed a variety of communities can develop which are often very diverse. A wide range of infaunal polychaetes, bivalves, echinoderms and burrowing anemones such as *Cerianthus lloydii* are often present in such habitat and the presence of hard substrata (shells and stones) on the surface enables epifaunal species to become established, particularly hydroids such as *Nemertesia* spp and *Hydrallmania falcata*. The combination of epifauna and infauna can lead to species rich communities. Coarser mixed sediment communities may show a strong resemblance, in terms of infauna, to biotopes within the A5.1. However, infaunal data for this habitat type is limited to that described under the biotope A5.443, and so are not representative of the infaunal component of this habitat type.

A5.45 - Deep circalittoral mixed sediments

Offshore (deep) circalittoral habitats with slightly muddy mixed gravelly sand and stones or shell. This habitat may cover large areas of the offshore continental shelf although there is relatively little data available. Such habitats are often highly diverse with a high number of infaunal polychaete and bivalve species. Animal communities in this habitat are closely related to offshore gravels and coarse sands and in some areas populations of the horse mussel *Modiolus modiolus* may develop in these habitats (see A5.622).

As described in the SISAA submitted with this Application, the proposed survey area adjoins one Special Areas of Conservation (SAC), Kerry Head Shoal SAC, which is designated for its Annex I Habitat [1170] Reefs; and overlaps with parts of one Special Protection Area (SPA), River Shannon and River Fergus Estuaries SPA, designated for a number of overwintering bird species and their supporting habitat [A999] Wetland and Waterbirds; and also overlaps with one SAC, Lower River Shannon SAC, designated for its Annex I Habitats Qualifying Interests (QIs). These were all thoroughly identified, described and assessed within the SISAA and NIS. From all the designated Annex I Habitats within the Lower River Shannon SAC, the inshore section of the OECC area overlaps or adjoins the following benthic habitats:

- [1110] Sandbanks which are slightly covered by sea water all the time
- [1130] Estuaries
- [1140] Mudflats and sandflats not covered by seawater at low tide
- [1160] Large shallow inlets and bays
- [1170] Reefs
- [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

- [1410] Mediterranean salt meadows

There is no overlap between the proposed site investigation area and any of the remaining QIs for Lower River Shannon SAC, including the priority habitats [1150] Coastal lagoons or [91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) or the Annex I habitat QI for Kerry Head Shoal SAC [1170] Reefs.

The following impacts have been identified in the SISAA from the proposed site investigation activities:

- Habitat disturbance and smothering during all intrusive site investigation activities
- Increased suspension of solids in the water column
- Vibration from geo-technical equipment
- Sediment penetration and some substratum loss

The effect of the site investigation activities will be localised, temporary in nature and will have an imperceptible effect within the vicinity of each site investigation location. Any sediment disturbed as a result of geotechnical surveys is expected to be dispersed by the prevailing tides and will be far less than any typical storm event. In addition, the area is subject to strong sea currents and therefore any areas of soft sediment are highly dynamic often changing with the tide. There will be no interaction with Annex I Habitats as a result of the geophysical surveys.

Very small areas of the seabed will be disturbed and sampled during the environmental and geotechnical site investigation activities. As there is some overlap between the proposed site investigation area, at the inshore section of the OECC, and the Annex I habitats designated in Lower River Shannon SAC which are listed above, there is the potential for these habitats to be disturbed by the geotechnical surveys, as well as the ecology surveys, including subtidal and intertidal walkover.

This potential impact was thoroughly investigated in the SISAA provided in support of this Application, and that report found that the Lower River Shannon SAC should be brought forward to Stage 2 Appropriate Assessment (AA) in the context of LSE on its Annex I Qualifying Interests [1110] Sandbanks which are slightly covered by sea water all the time, [1130] Estuaries, [1160] Large shallow inlets and bays, and [1170] Reefs. Appropriate mitigation measures were proposed, which are detailed in the NIS report submitted with this Application and summarised in Section 5 below. The NIS also concluded that, with the implementation of the mitigation measures detailed therein, there would be no adverse effect on the conservation objectives for the Lower River Shannon SAC in terms of its designated Annex I habitats and that the integrity of the site would be maintained.

4.3 Marine Mammals

A review of existing data sources regarding marine mammals was carried out in the SISAA and the Risk Assessment for Annex IV Species reports, both submitted in support of this Foreshore Licence Application. This review indicated that the key species likely to be present within the proposed development and surrounding area are: bottlenose dolphin (*Tursiops truncatus*), common dolphin (*Delphinus delphis*), Risso's dolphin (*Grampus griseus*), white-beaked dolphin (*Lagenorhynchus albirostris*), harbour porpoise (*Phocoena phocoena*), killer whale (*Orcinus orca*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaeangliae*), minke whale (*Balaenoptera acutorostrata*), long-finned pilot whale (*Globicephala melana*), common seal (*Phoca vitulina*) and grey seal (*Halichoerus grypus*).

The Eurasian otter (*Lutra lutra*) may also interact with very small areas of the landfalls should they be present within range of landfall areas. Both the SISAA and the Risk Assessment for Annex IV Species determined that marine mammals in the vicinity of the proposed site investigation activities would most likely be affected by:

- Disturbance from underwater noise associated with surveys; and
- Injury due to collision (survey vessels/sampling equipment).

The NIS and the Risk Assessment for Annex IV Species both concluded that, with the implementation of the mitigation measures outlined therein and summarised in Section 5 below, namely adherence to standard mitigation measures as detailed in the DAHG (2014) guidance, such as pre-start monitoring and soft-start/ramp-up, the proposed site investigation activities, alone or in combination with other activities and developments, would have no risk of significantly affecting any of the marine mammal species considered.

4.4 Birds

Ireland is host to several nationally and internationally important bird species which inhabit areas with coastal sea cliffs, estuaries and offshore islands. Coastal habitats provide important breeding sites for many species of seabirds, several of which are protected under national and European legislation.

At least 45 species of seabird (including divers and grebes) have been recorded during at-sea surveys in Irish waters, of which 23 species regularly breed around Ireland (Pollock *et al.*, 2008, Mackey *et al.*, 2004). In addition, a further 59 species of waterfowl and wader regularly occur at coastal sites such as estuaries around Ireland: including 5 grebe species, 2 heron species, 26 species of wildfowl and 26 wader species (Crowe, 2005). Some of these species are migratory and are present only during migration periods in spring and autumn; others come to Ireland to breed or to spend the winter, while some are resident all year round (Lewis *et al.*, 2019; Jessop *et al.*, 2018).

There is overlap between the inshore section of the planned OECC in the Foreshore Licence Application Area and the River Shannon and River Fergus Estuaries SPA, which is designated for the Qualifying Interest (QI) Wetlands and Waterbirds [999] and for a number of overwintering bird species. The site forms the largest estuarine complex in Ireland and regularly supports in excess of 50,000 wintering waterfowl. It supports internationally important populations of Light-bellied Brent Goose, Dunlin, Black-tailed Godwit and Redshank and has a further seventeen species with nationally important populations. Detailed description of this and seven further SPAs within the zone of influence of the Foreshore Licence Application Area and their Special Conservation Interests (SCIs) is provided in the SISAA.

The potential impacts on birds from the proposed site investigation activities were considered in the SISAA to be:

- Visual and noise disturbance due to increased vessel activity
- Underwater noise from geophysical surveys
- Intertidal disturbance to substrate from geotechnical surveys
- Temporary reduction of feeding grounds due to the site investigation activities
- Disturbance during breeding season

The SISAA assessed each of these impacts in detail and concluded that the nature of the proposed site investigation activities and noise effects would be short term, temporary and localised in nature, with no significant effects predicted for any bird species. Effects on supporting habitat and prey will be temporary and highly localised. Therefore, impacts due to effects on prey species will be negligible. The relatively small portion of the intertidal area and coastline at landfall in the OECC is in close proximity to a high amenity area and the species present would be accustomed to a high level of noise and visual disturbance. For all the above, no LSE are expected for any bird species.

4.5 Fish Ecology

According to Ireland Marine Atlas (2021) the Foreshore Licence Application Area overlaps with the spawning and/or nursery grounds of several commercially important species of fish. Cod utilize the area as a nursery, as do mackerel, horse mackerel, hake and both white and black belly monkfish. Spawning of herring has also been recorded. The Foreshore Licence Application Area is also within the range of Atlantic salmon. The extent of overlap with the mapped spawning and nursery grounds is shown in Figure 4-2 to Figure 4-13 and further summarised in Table 4-2.

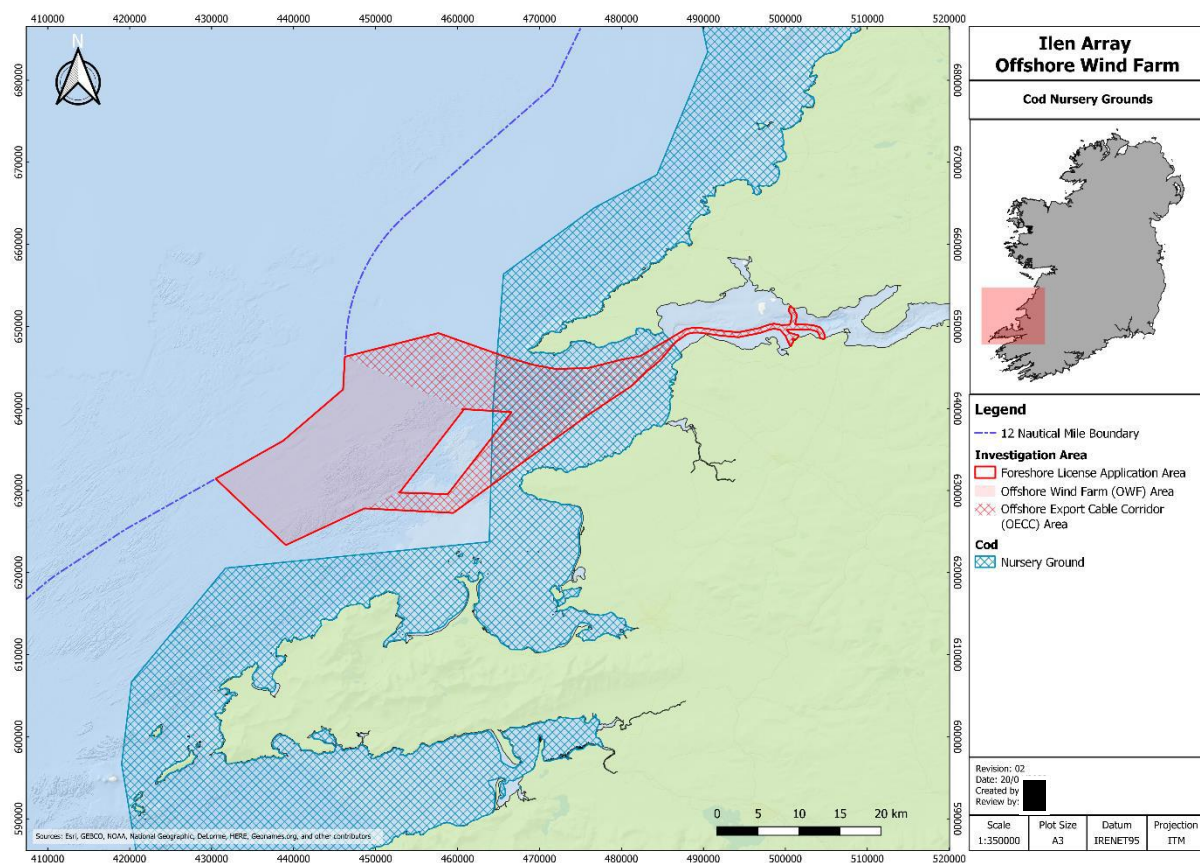


Figure 4-2: Cod Nursery Grounds (Ireland's Marine Atlas, 2021a)

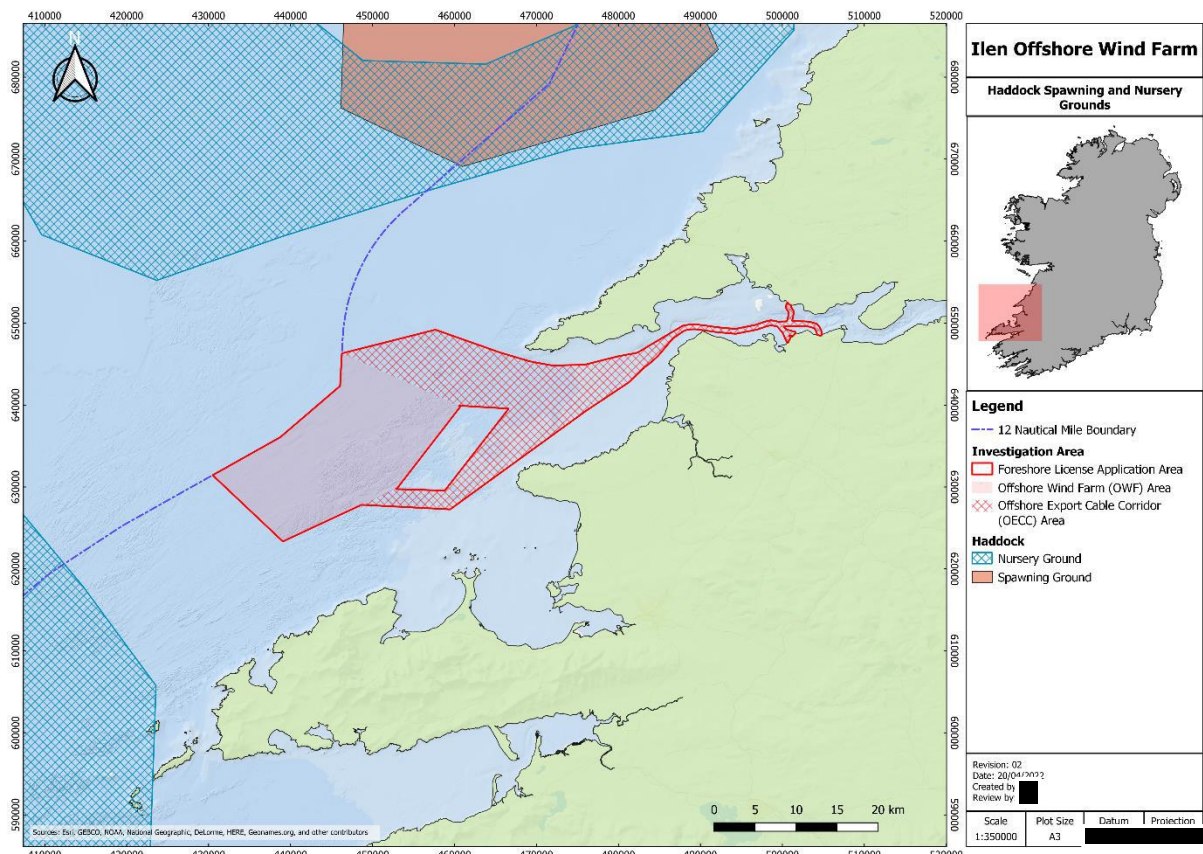


Figure 4-3: Haddock Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)

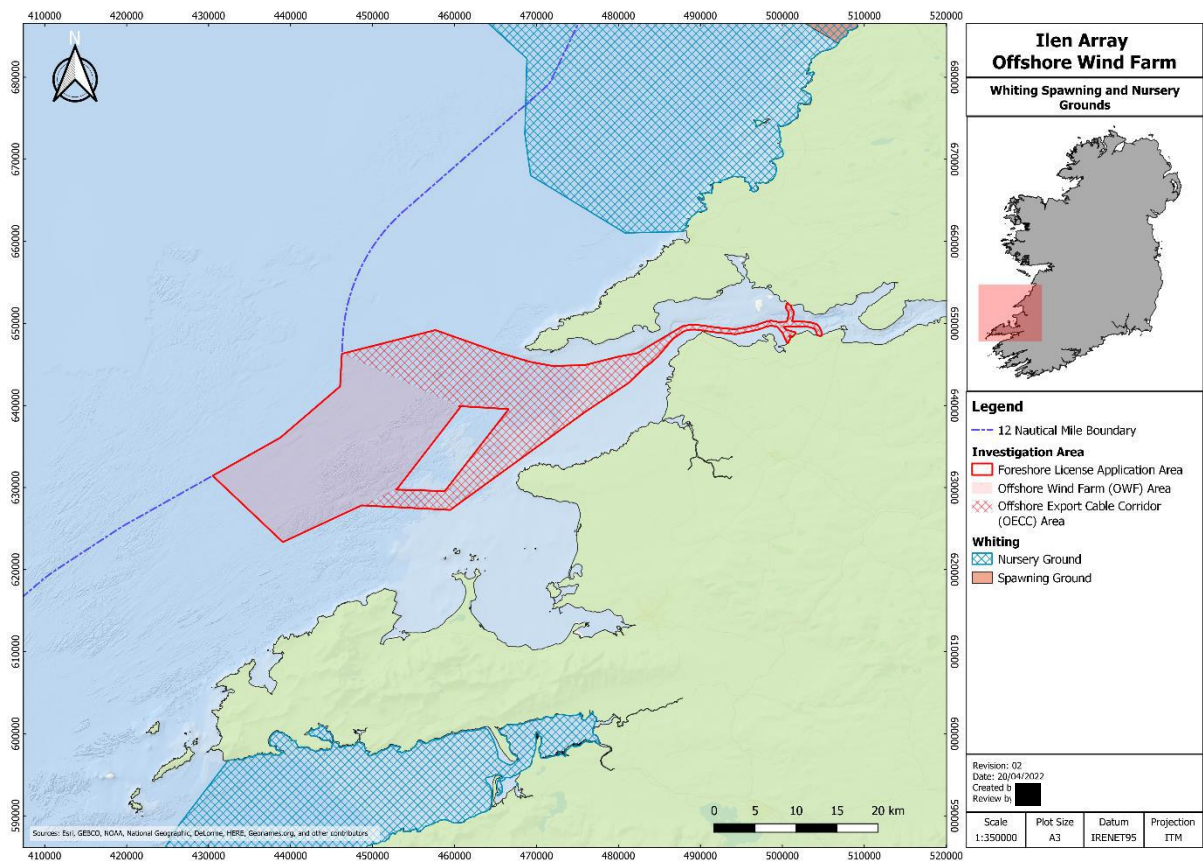


Figure 4-4: Whiting Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)

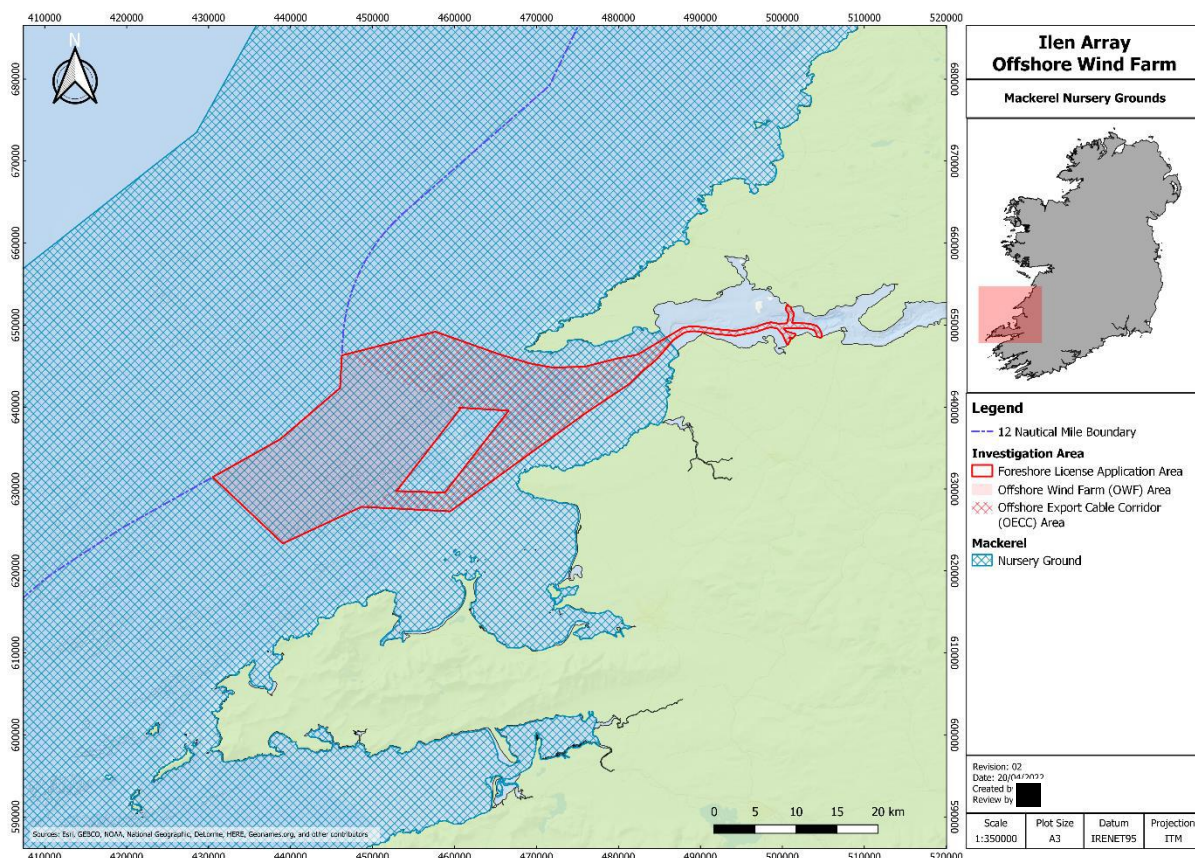


Figure 4-5: Mackerel Nursery Grounds (Ireland's Marine Atlas, 2021a)

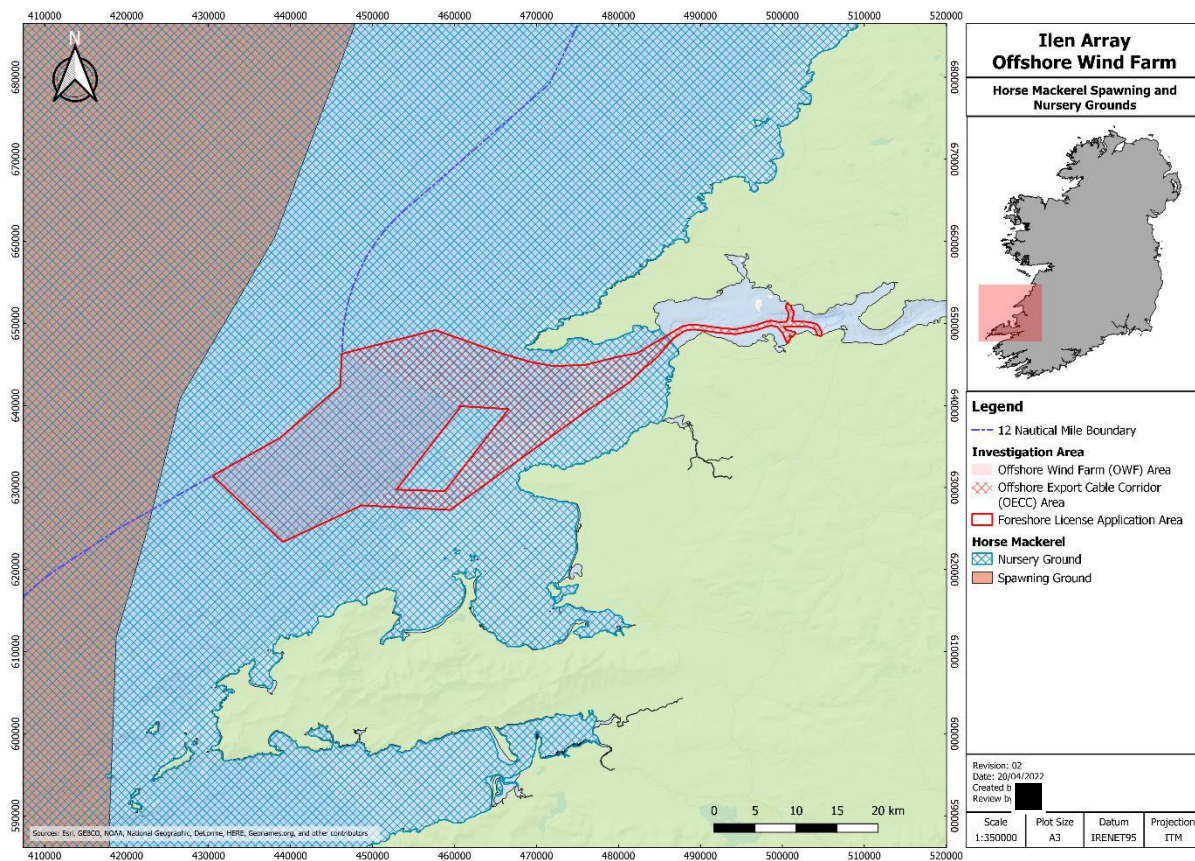


Figure 4-6: Horse Mackerel Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)

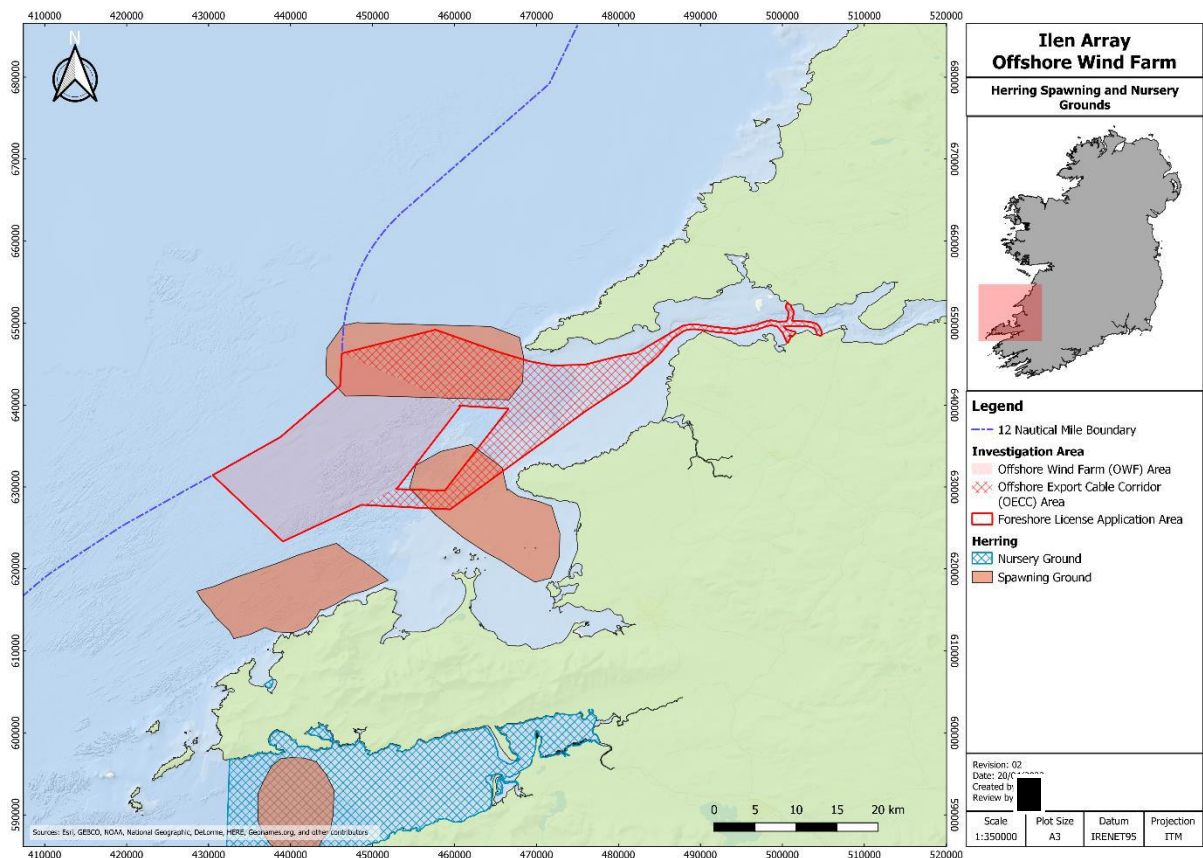


Figure 4-7: Herring Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)

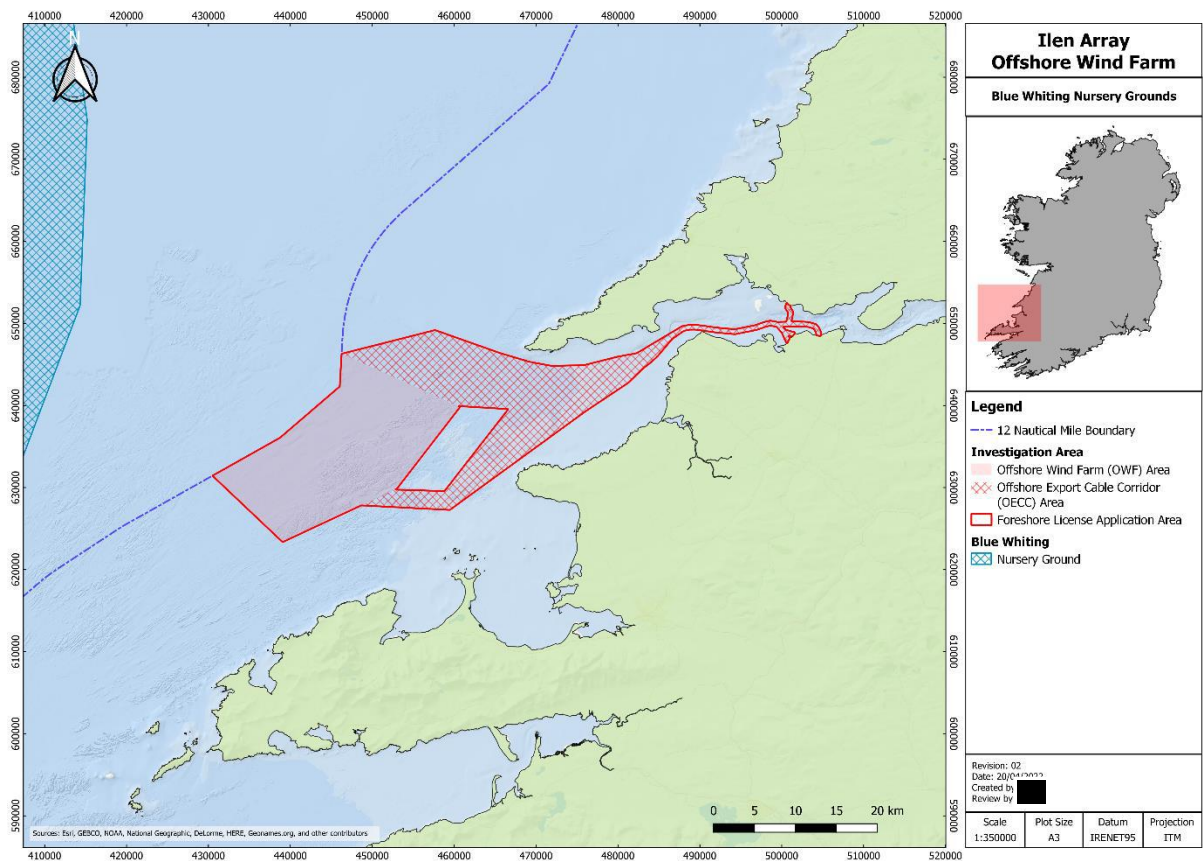


Figure 4-8: Blue Whiting Nursery Grounds (Ireland's Marine Atlas, 2021a)

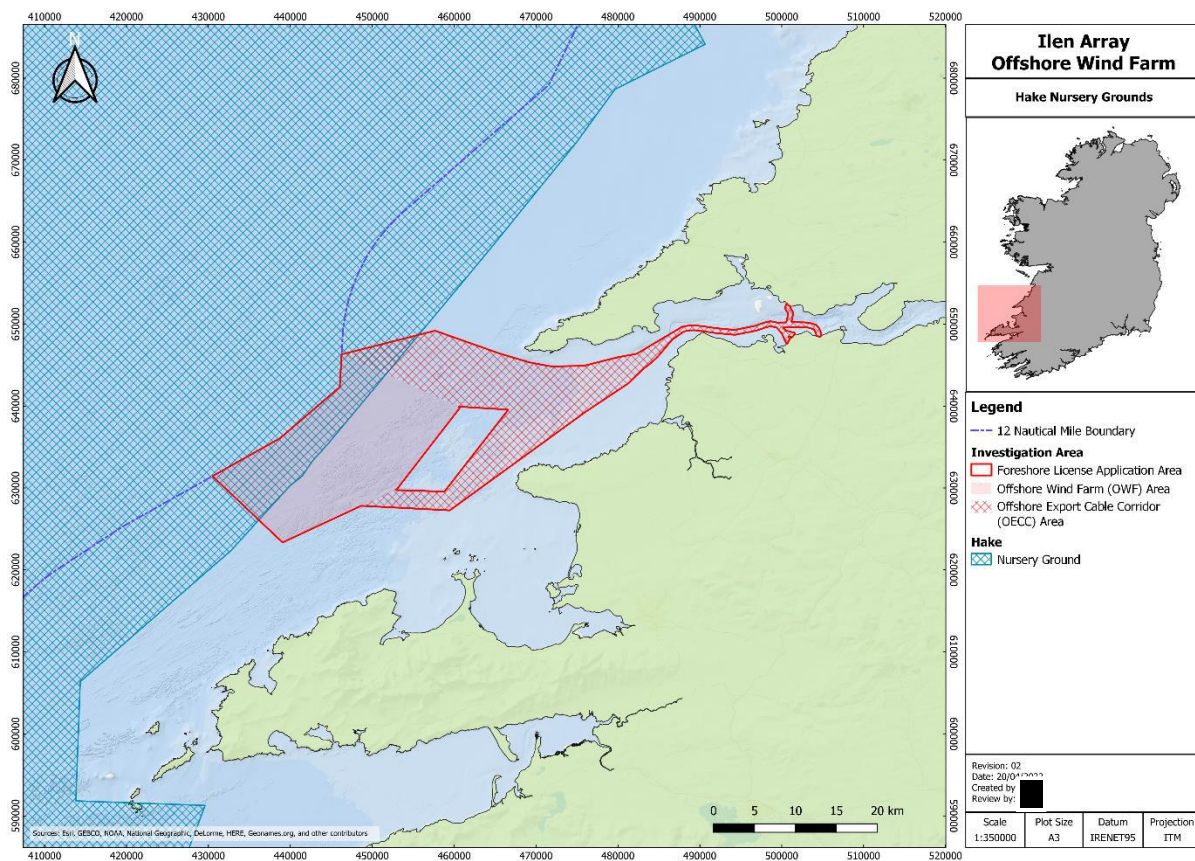


Figure 4-9: Hake Nursery Grounds (Ireland's Marine Atlas, 2021a)

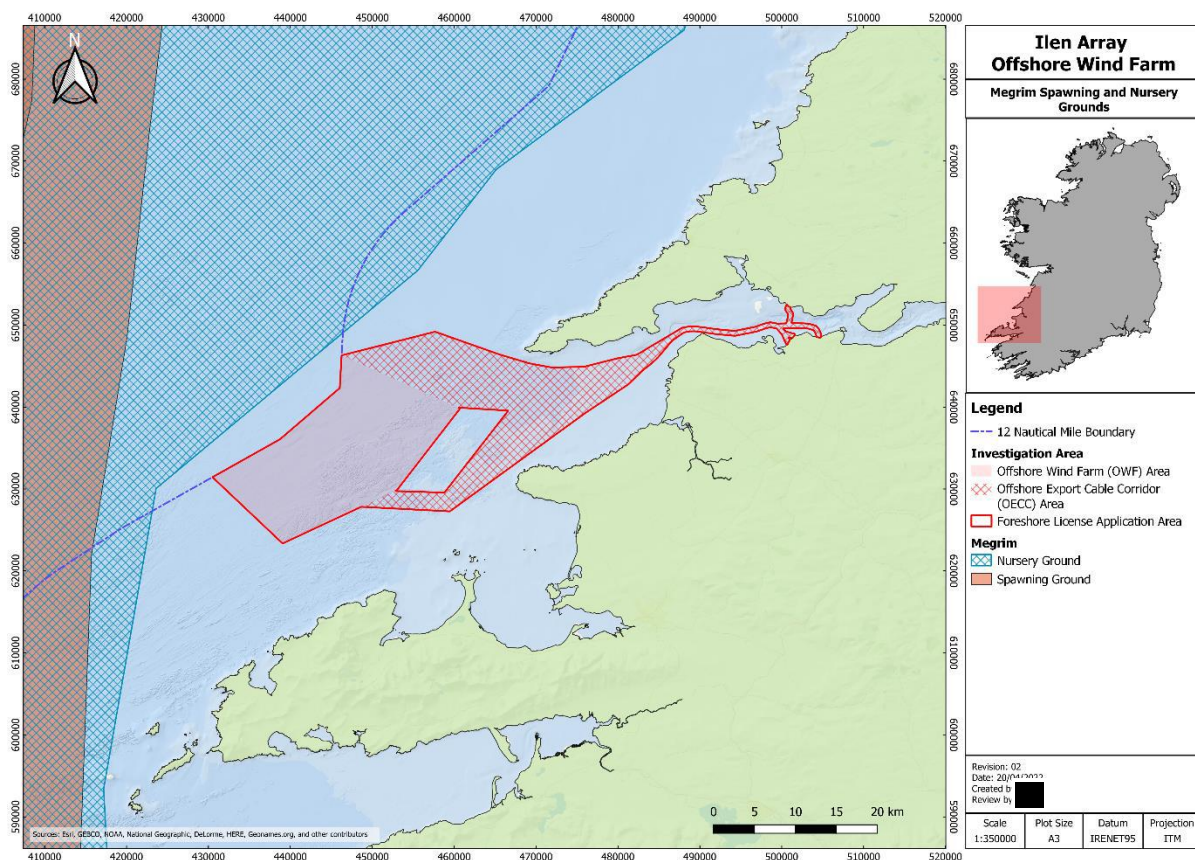


Figure 4-10: Megrim Spawning and Nursery Grounds (Ireland's Marine Atlas, 2021a)

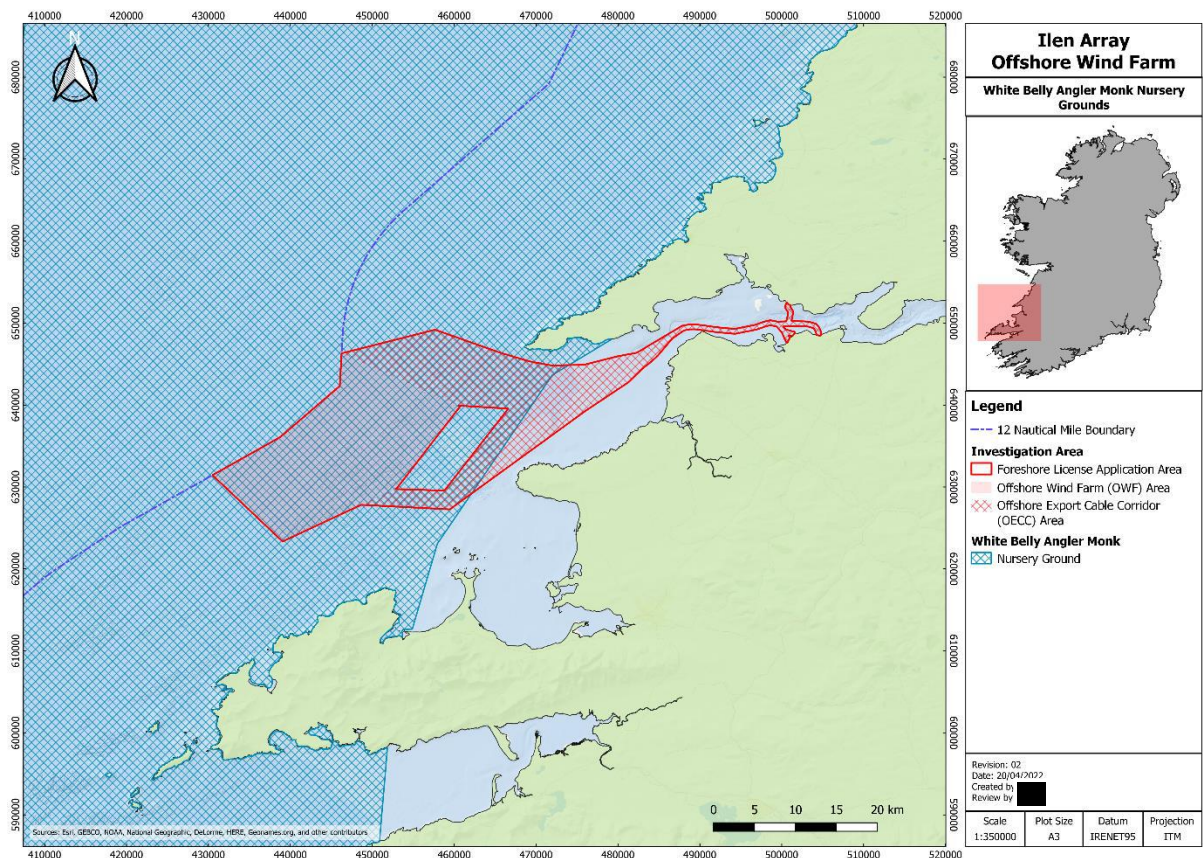


Figure 4-11: White Belly Angler Monk Nursery Grounds (Ireland's Marine Atlas, 2021a)

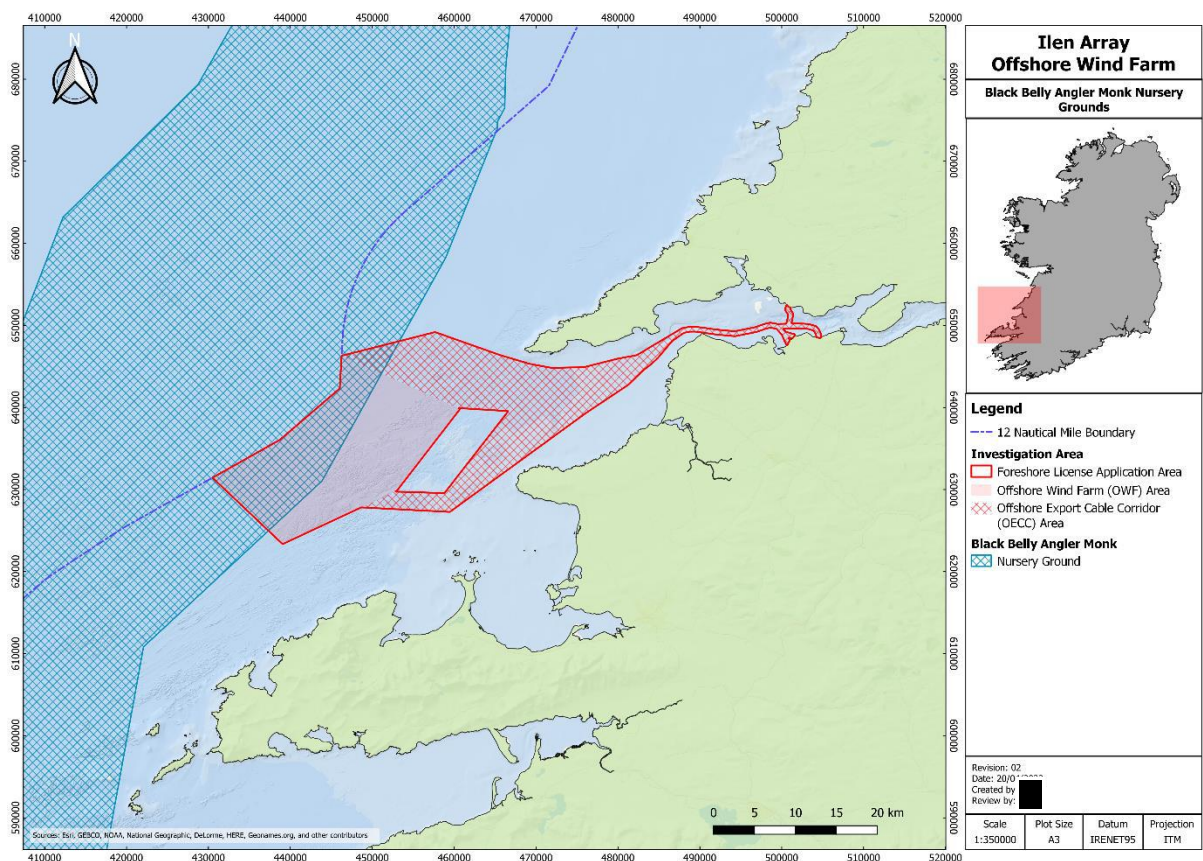


Figure 4-12: Black Belly Angler Monk Nursery Grounds (Ireland's Marine Atlas, 2021a)

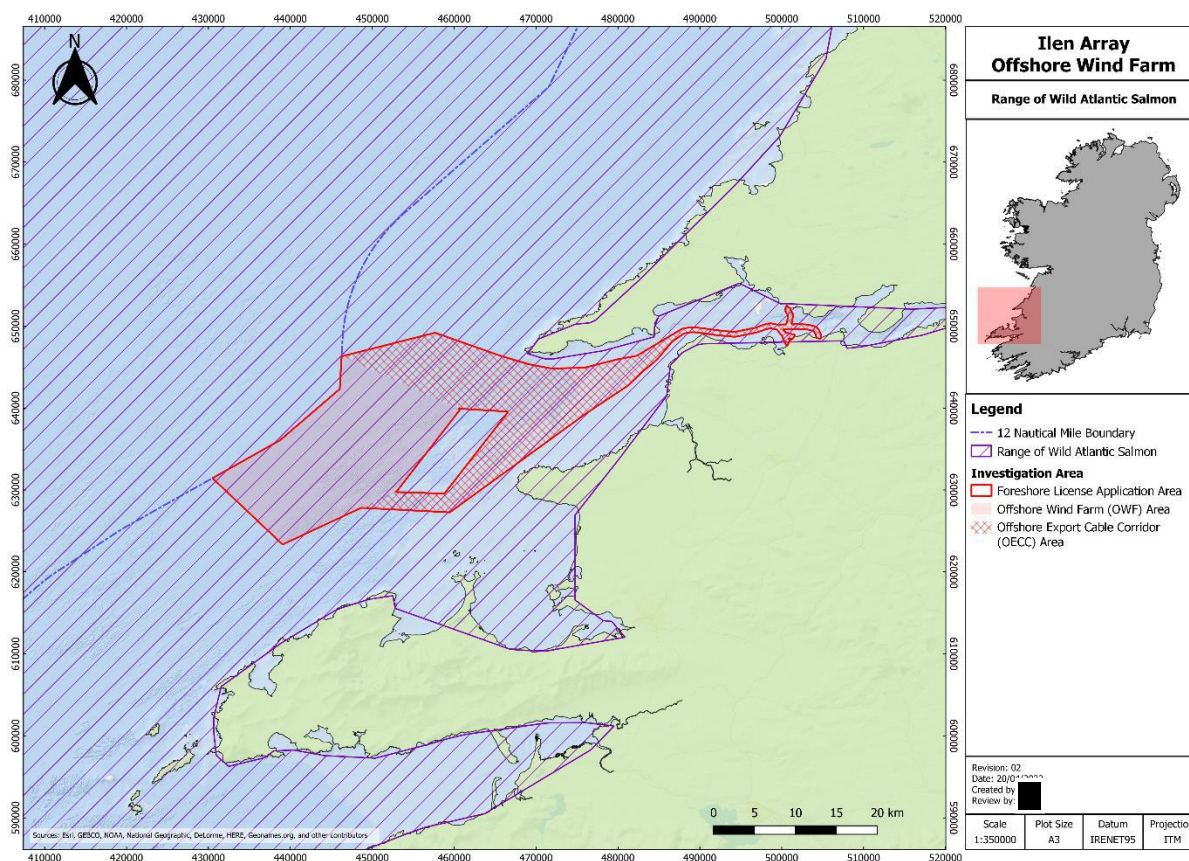


Figure 4-13: Wild Atlantic Salmon Range (Ireland's Marine Atlas, 2021a)

Table 4-2: Application area overlap with commercial fish species distribution areas

Species	Nursery Area	Spawning Area
Cod	✓	X
Haddock	X	X
Whiting	X	X
Mackerel	✓	X
Horse Mackerel	✓	X
Herring	X	✓
Blue Whiting	X	X
Hake	✓	X
Megrim	X	X
White Belly Angler Monk	✓	X
Black Belly Angler Monk	✓	X

The SISAA submitted with this Application has also considered potential impacts from the proposed site investigation activities on migratory fish species, specifically Annex II species (Atlantic salmon, Sea lamprey, River lamprey and Twaite shad), with particular focus on the impacts of noise from the proposed geophysical and geotechnical surveys. The SISAA identifies and describes in detail two SACs designated for these migratory fish species and their Annex II QIs, which are within the Zone of Influence of the proposed site investigation activities.

The potential impact on fish from the proposed site investigation activities was identified in the SISAA as:

- Disturbance from vibration and underwater noise

The SISAA provides an assessment of noise on fish species using guidance from Popper *et al.* (2014). It concludes that Sea and River lamprey, which are both anadromous fish species with a migratory phase in the sea, are capable of hearing shipping and drilling noise associated with the site investigations (Mickle *et al.*, 2009). However, they are not considered to be hearing specialists and are not sensitive to sound pressure (Popper *et al.*, 2003, 2004) therefore are not vulnerable to the sounds emitted by the survey activities. Atlantic salmon, while capable of hearing noise in the lower frequency range below 380 Hz, is also not sensitive to sound pressure (Hawkins & Johnstone, 1978). Atlantic salmon is also considered to be a hearing non-specialist with low sensitivity to sound in water. Therefore, LSE were not predicted for any of these species – Sea lamprey, River lamprey and Atlantic salmon.

Twaite shad and Allis shad have swim bladder and inner ear structures that suggest they have special hearing capabilities (Popper *et al.*, 2004). They are, therefore, sensitive to underwater noise. As LSE cannot be ruled out for Twaite or Allis shad in the absence of mitigation measures, both species and their designated SACs were screened in for Stage 2 Appropriate Assessment.

The NIS concluded that the proposed site investigation activities will not impact any of the conservation objectives for the Twaite or Allis shad in any of the SACs for which they are QIs. However, it also considered that the underwater noise associated with some of the site investigation activities and the shipping noise may impact the species by inciting a behavioural response, if it is within the site when the surveys are being undertaken. A suite of measures are proposed in the NIS to mitigate for any potential adverse effect from the site investigation activities, and these are also summarised in Section 5 below. The NIS therefore concludes that, with the implementation of the mitigation measures outlined therein and summarised in Section 5 below, namely adherence to standard mitigation measures as detailed in the DAHG (2014) guidance, such as soft start/ramp-up, the proposed site investigation activities, alone or in combination with other activities and developments, will have no LSE on Twaite or Allis shad. As a result, there will be no adverse effect on the conservation objectives of any of the considered SACs, and the integrity of these sites will be maintained.

4.6 Natura 2000 Sites

There are a number of designated QIs that are associated with Natura 2000 sites within the Zone of Influence of the Foreshore Licence Application Area, and these were thoroughly identified, described and assessed within the SISAA and NIS. Eight SACs designated for their Annex I Habitats, forty six SACs designated for their Annex II mobile species, and ten SPAs were considered for the potential for Likely Significant Effects (LSE) to arise via the identified Source-Receptor-Pathways.

The AA Screening found that it is not possible to discount LSE with respect to the following thirty four SACs:

- Lower River Shannon SAC
- Blasket Islands SAC
- Slyne Head Islands SAC

- Slyne Head Peninsula SAC
- West Connacht Coast SAC
- Inishbofin and Inishshark SAC
- Roaringwater Bay and Islands SAC
- Duvillaun Islands SAC
- Inishkea Islands SAC
- Blackwater River (Cork/Waterford) SAC
- Saltee Islands SAC
- Lower River Suir SAC
- Rockabill to Dalkey Island SAC
- West Wales Marine SAC
- Bristol Channel Approaches SAC
- North Anglesey Marine SAC
- North Channel SAC
- Mers Celtiques - Talus du Golfe de Gascogne
- Nord Bretagne DH
- Ouessant-Molène
- Abers - Côte des Legendes
- Chaussée de Sein
- Côte de Granit Rose-Sept-Iles
- Baie de Morlaix
- Tregor Goëlo
- Cap d'Erquy - Cap Fréhel
- Baie de Saint-Brieuc - Est
- Récifs et Landes de la Hague
- Anse de Vauville
- Banc et Récifs de Surtainville
- Baie de Lancieux, Baie de l'Arguenon, Archipel de Saint Malo et Dinard
- Chausey
- Estuaire de la Rance
- Baie du Mont Saint-Michel

A SISAA report and a NIS report are submitted in support of this Foreshore Licence Application. The NIS concluded that, with the implementation of the mitigation measures specified therein and summarised in Section 5 below, the proposed site investigation activities, alone or in combination with other activities and developments, would not cause an adverse effect on the integrity of any Natura 2000 site.

4.7 Water, Air and Climate

4.7.1 Water

The proposed site investigation activities will mainly be undertaken at sea. These will result in a temporary increase in vessels using the area, which could theoretically increase the risk of accidents and resultant fuel spills. All vessels carry fuel during the survey provisions. Lubricants are also present

onboard. Any other potentially harmful substances are at very limited amounts stored in purpose made storage containers or facilities and adequately secured. There is no production of any substances involved and no bulk transportation of oil or chemical substances.

Drilling of boreholes will use water or inert drill muds, with the drilling flush and drill cuttings being largely returned to the vessel and re-used and returned to shore for disposal. Collection and disposal of waste (refuse) produced as a result of the onboard activities will form part of any Health and Safety and/or Environmental Management Plan. However, a very small volume of the flush and cutting is expected to be released into the environment. The released material will result in a temporary localised increase in turbidity and a small mound of the seabed comprising of the cuttings. All drilling fluids will be managed in compliance with the strictest environmental requirements and best practices.

Biodegradable polymer mix will be used throughout drilling operations where possible. Chemical material used will be from the List of Notified Chemicals (approved chemicals) and discharged into the marine environment under the Offshore Chemical Notification Scheme. The flush and cuttings will not result in any deterioration of sediment or water quality, therefore no LSE is expected as a result.

There will be no planned release of potentially harmful substances from the survey vessels. Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a release is low and no significant effects are predicted.

In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office. Therefore, it is considered not likely that there would be any occurrence of a pollution event, accidental or otherwise, that could directly or indirectly affect the environment.

In compliance with the WFD objectives, the proposed site investigation activities are not anticipated to result in a deterioration in a designated water body (or protected area) and will not jeopardise the attainment of good status (or the potential to achieve good ecological and chemical status).

4.7.2 Air

There will be no releases to air, other than routine vessels exhausts. Air quality standards will not be exceeded. There is not likely to be a significant effect on the environment

4.7.3 Climate

The survey will be conducted over a relatively short timeframe and effects contributing to climate change will not arise. There is not likely to be a significant effect on the environment.

4.8 Commercial Fisheries

4.8.1 Data Availability

The availability of information on fishery activity specifically related to fishing grounds and areas in Irish waters is dependent on the target species, fishing gear and the size of the vessels engaged in the fisheries. Broadly speaking good quality data are available for fish species which are managed via a

quota system and are fished by larger vessels; conversely less data is available from smaller vessels targeting non-quota species.

Vessels >12 m are legally obliged to transmit VMS (Vessel Electronic Monitoring System) data and (with some exceptions) to submit logbooks of their catches; this information is collated by the Marine Institute (MI) to produce the Atlas of Commercial Fisheries which maps fishery activity. The data are filtered and processed by the MI to screen out non-fishing activity which is done on the basis of vessel speed upper and lower parameters in combination with industry knowledge. The data is of low certainty for some fisheries due to the difficulties in relating vessel position at a given time with logbook records for individual species, also data from all fisheries other than otter trawling are considered indicative and not quantitative due to uncertainties around effort.

Vessels <10 m are not required to transmit VMS data or to record their catches in logbooks. Information from this sector is derived from sales notes, the Bord Iascaigh Mhara (BIM) Inshore Sentinel Vessel Programme, the MI Observer Programme and industry knowledge. This classification of vessel accounts for the majority of pot-fishing inshore fleet targeting crab, lobster, shrimp and whelks. Vessels <10 m may also target finfish with gillnets, jiggers and longlines. Vessels 10-12 m are not required to transmit VMS data but must maintain logbooks, in which position data is recorded only at the ICES (International Council for the Exploration of the Sea) Statistical Rectangle scale.

The Irish Groundfish Survey (IGFS) is an annual fisheries-independent trawl survey carried out by the MI in Irish waters to contribute to the assessment of commercial fish stocks and to feed data into the ICES stock assessments which in turn determine the size and allocation of European quotas. These data along with commercial catch data are published in the Irish Stock Book and are also available in mapping formats in Ireland's Marine Atlas. The IGFS does not survey the Irish Sea or the far north of the island, these data gaps are filled by the UK – Northern Ireland Groundfish Survey (NIGFS) and the UK – Scottish West Coast Groundfish Survey (SCOWCGFS) under the coordination of the ICES International Bottom Trawl Survey Working Group (IBTSWG).

4.8.2 Fishing Activity

There is some bottom and beam trawl effort, mostly within the minimum recorded range of fishing effort, scattered throughout the OWF area. Fishing by vessels greater than 12 m is largely by Irish vessels with some UK registered vessels and, to a much lesser extent, Spanish and French registered vessels (Gerritsen & Kelly, 2019).

Areas of commercial dredge and pot fishing activity are reflected in Ireland's Marine Atlas, 2014-2018 for the vessels less than 15 m within the Foreshore Licence Application. Please note this may not represent the true effort for fishing by this size vessel in the area, given that vessels under 12m are not required to operate a VMS.

Distribution of different fishing methods adjacent to and overlapping the Foreshore Licence Application Area are presented in Figure 4-14. There may be other areas of fishing not recorded in Ireland's Marine Atlas.

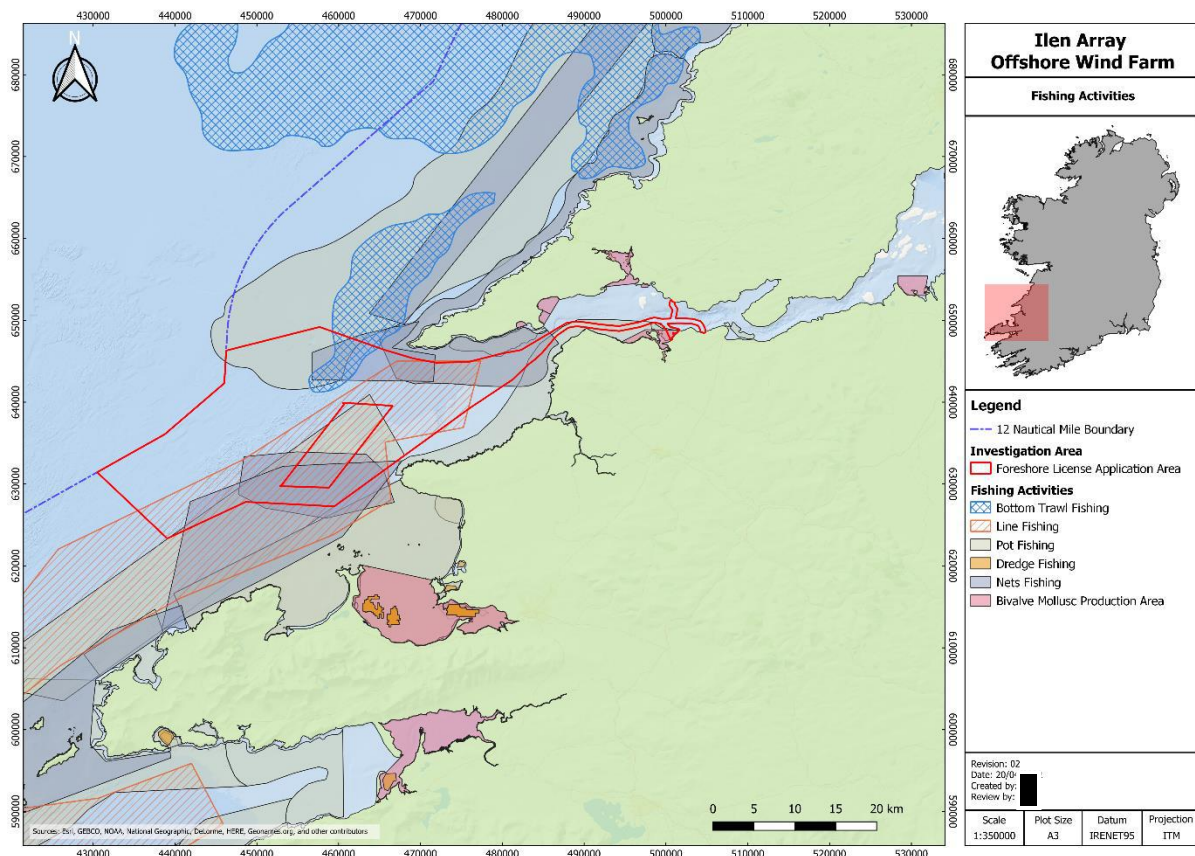


Figure 4-14: Fishing Activities (Ireland's Marine Atlas, 2021b)

During the proposed site investigation activities, namely the geophysical and geotechnical survey operations, the deployment of metocean equipment and during mobile ecological surveys, other vessels will be requested to maintain a safe distance from the survey vessels due to their restricted manoeuvrability. Fishermen will also be requested to avoid the static survey equipment once it is deployed, which will have a very small footprint.

Additionally, for the duration of the geophysical survey only, fishermen with static gear such as whelk/lobster/crab pots within the survey area will be requested to temporarily remove them. The impact upon the commercial fishing sector will be minimised by planning of the survey to minimise the spatial extent and duration of gear removal necessary. The resulting effect on static gear fisheries will be very small and of short duration. Furthermore, given the short duration and temporary nature of the proposed site investigation activities, any potential effect on commercial static gear fisheries and recreational fishing is expected not to be significant.

Furthermore, Ilen Array Ltd. acknowledges that information relating to fishing activity in the area is likely incomplete and intends to appoint a Fisheries Liaison Officer (FLO) to engage with local fishing community in order to determine the full extent of fishing effort in the Foreshore Licence Application Area, and to minimise disruption to the activity.

4.9 Aquaculture and Shellfish Ecology

The Department of Agriculture, Food and the Marine (DAFM) has responsibility for the regulation of aquaculture. Under Section 6 of the Fisheries (Amendment) Act, 1997 (as amended), it is illegal to

engage in aquaculture without an appropriate Aquaculture Licence. Aquaculture includes the culture or farming of fish, aquatic invertebrates, aquatic plants, or any aquatic form of food suitable for the nutrition of fish. Figure 4-15 below shows the location of licenced aquaculture in the proximity of the Foreshore Licence Application Area.

There is partial overlap of the OECC with an aquaculture licenced site (Site T06/233) for the bottom cultivation of Mussels (*Mytilus edulis*), on the foreshore at Ballylongford Bay, Shannon Estuary, Co. Kerry. There is also a small overlapping area of the OECC with a further aquaculture site identified as T08/004BO on the opposite side of the Estuary, Co Clare, and while this is correctly identified as a fishery order area, it should be noted that this is not a licenced aquaculture site and is not governed by DAFM aquaculture licencing legislation (Fisheries Act 1997).

Tralee Bay, located in County Kerry, on Irelands Wild Atlantic Way, is one of the few self-seeding Native Wild Irish Oysters fisheries found in Europe. The Tralee Bay Oyster fishery is one of the largest self-reproducing oyster beds in Western Europe. Tralee Oyster Fisheries Society Ltd was established in 1979 and had an Oyster Fishery Order vested in it in 1981. Tralee Oyster Fishery Society Ltd is a non-profit fishermen's' cooperative involving 78 boats and over 200 fishers. The annual catch ranges from 100 to 300 tonnes per year, depending on the settlement level of the spat / juveniles from 4 years previously. Ensuring the protection of this stock is of the highest priority, ensuring one of the most sustainable seafood products on the market. The season runs from September to April each year. (<https://traleebayoysters.com>) The oyster harvesting operations located within the Tralee Bay are approximately 8.8 km from the Foreshore Licence Application Area.

Ilen Array Ltd., with the support of a Fisheries Liaison Officer, will engage with the existing licensed aquaculture sites as the project progresses.

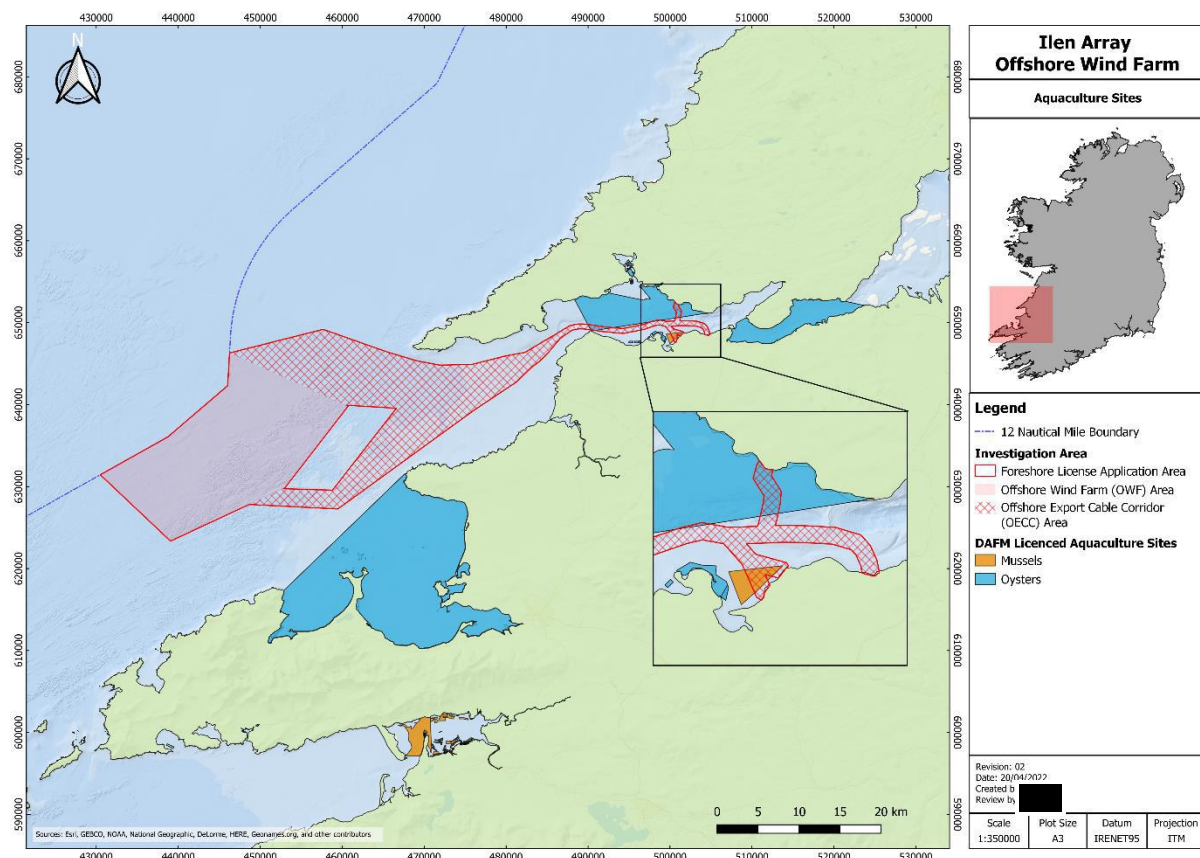


Figure 4-15: DAFM Licenced Aquaculture Sites (Ireland's Marine Atlas, 2021c)

The closest Designated Harmful Algal Blooms (HABs) Inshore Shellfish Production Areas are located within the Shannon Estuary (Figure 4-16), and there is partially overlap between these and the OECC area. The HAB in Tralee Bay is approximately 82 km away from the OWF area. These administrative units are used for reporting purposes in the management, collection and analysis of shellfish and phytoplankton sample data, for aquaculture production activities. The areas within the Shannon Estuary are for the production of a number of bivalve mollusc species and occupy a total extent of 325.8 km². There is an overlap of approximately 14.5 km² between the OECC and the HABs Inshore Shellfish Production Areas off within the Shannon Estuary.

There are also several Shellfish Waters Directive (SWD) areas within the Shannon Estuary and Tralee Bay (Figure 4-16:), which aim to protect or improve shellfish waters in order to support shellfish life and growth. It is designed to protect the aquatic habitat of bivalve and gastropod molluscs, which include oysters, mussels, cockles, scallops and clams. There is minimal overlap (1.1 km²) between the OECC area and the West Shannon Ballylongford SWD area, at the southernmost proposed landfall location.

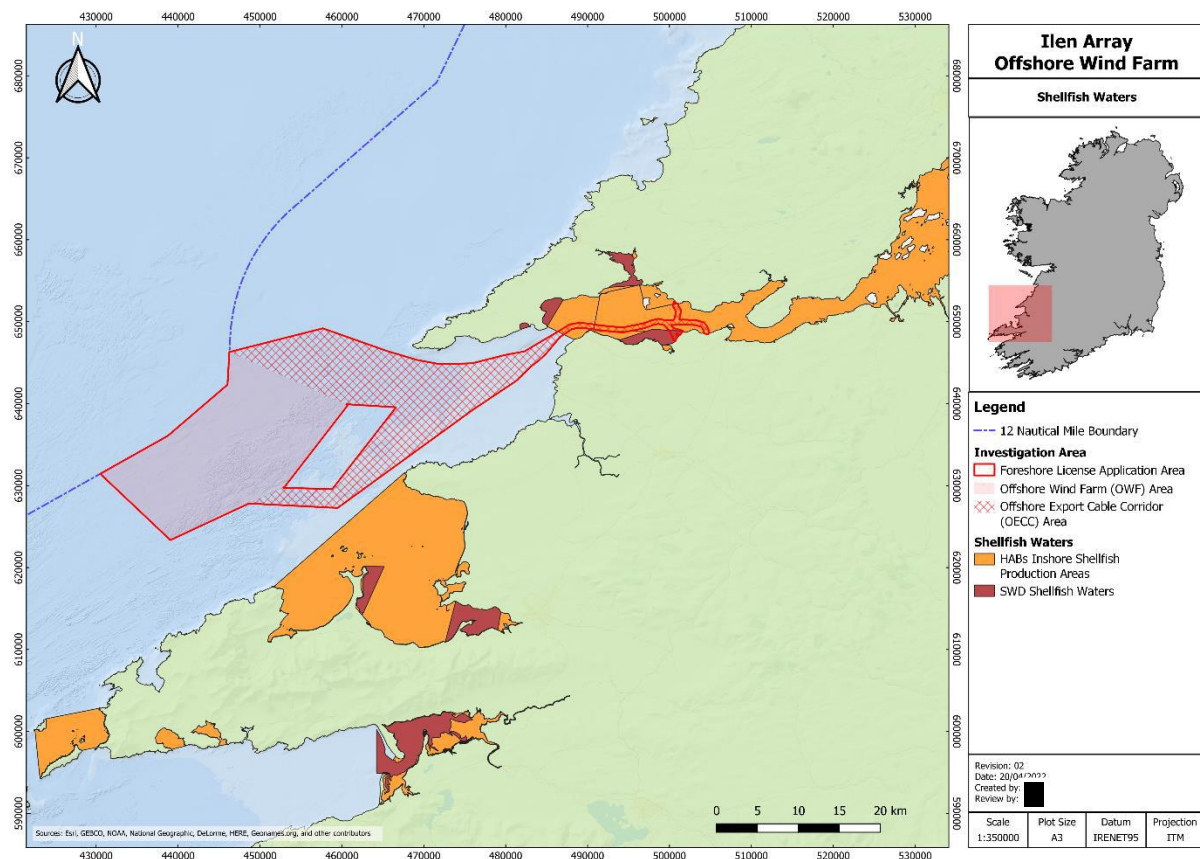


Figure 4-16: Shellfish Waters Directive (SWD) Areas and Harmful Algal Blooms Inshore Shellfish Production Areas (Ireland's Marine Atlas, 2021)

Similarly to Marine Benthos / Annex I Habitats, the following impacts have been identified for Shellfish Waters from the proposed site investigation activities:

- Habitat disturbance and smothering during all intrusive site investigation activities
- Increased suspension of solids in the water column
- Vibration from geo-technical equipment
- Sediment penetration and some substratum loss

The effect of the site investigation activities will be localised, temporary in nature and will have an imperceptible effect within the vicinity of each site investigation location. Any sediment disturbed as a result of geotechnical surveys is expected to be dispersed by the prevailing tides and will be far less than any typical storm event.

In addition, the area is subject to strong sea currents and therefore any areas of soft sediment are highly dynamic often changing with the tide. There will be no interaction with Shellfish Waters as a result of the geophysical surveys.

As there is some overlap between the proposed site investigation area and the Shellfish Waters designated within the Shannon Estuary, there is the potential for this habitat to be disturbed by the geotechnical surveys, as well as the ecology surveys, including subtidal and intertidal walkover.

This potential impact was thoroughly investigated, for Marine Benthos / Annex I Habitats, in the SISAA provided in support of this Application. Appropriate mitigation measures were proposed, which are detailed in the NIS report submitted with this Application and summarised in Section 5 below. The NIS also concluded that, with the implementation of the mitigation measures detailed therein, there would be no adverse effect on Marine Benthos / Annex I Habitats. In accordance with the considerations above regarding Shellfish Waters, this conclusion can be extended to Shellfish Waters.

4.10 Marine Traffic

The Irish Coastguard monitors the movement of vessels in Irish waters via an Automatic Identification System (AIS) for maritime transport safety and security. The European Communities (Vessel Traffic Monitoring and Information System) Regulations 2010 governs the use of AIS systems and states that “Any fishing vessel with an overall length of more than 24 metres but less than 45 metres which is (a) registered in the State, (b) operating in the territorial waters, or (c) landing its catch in a port of the State, shall be fitted with an automatic identification system (Class A) which meets the performance standards drawn up by the IMO”. Figure 4-17 shows AIS data from the period beginning July 2018 ending June 2019. The data is mapped on a 40 m grid and represented visually by the density of marine vessels over that period.

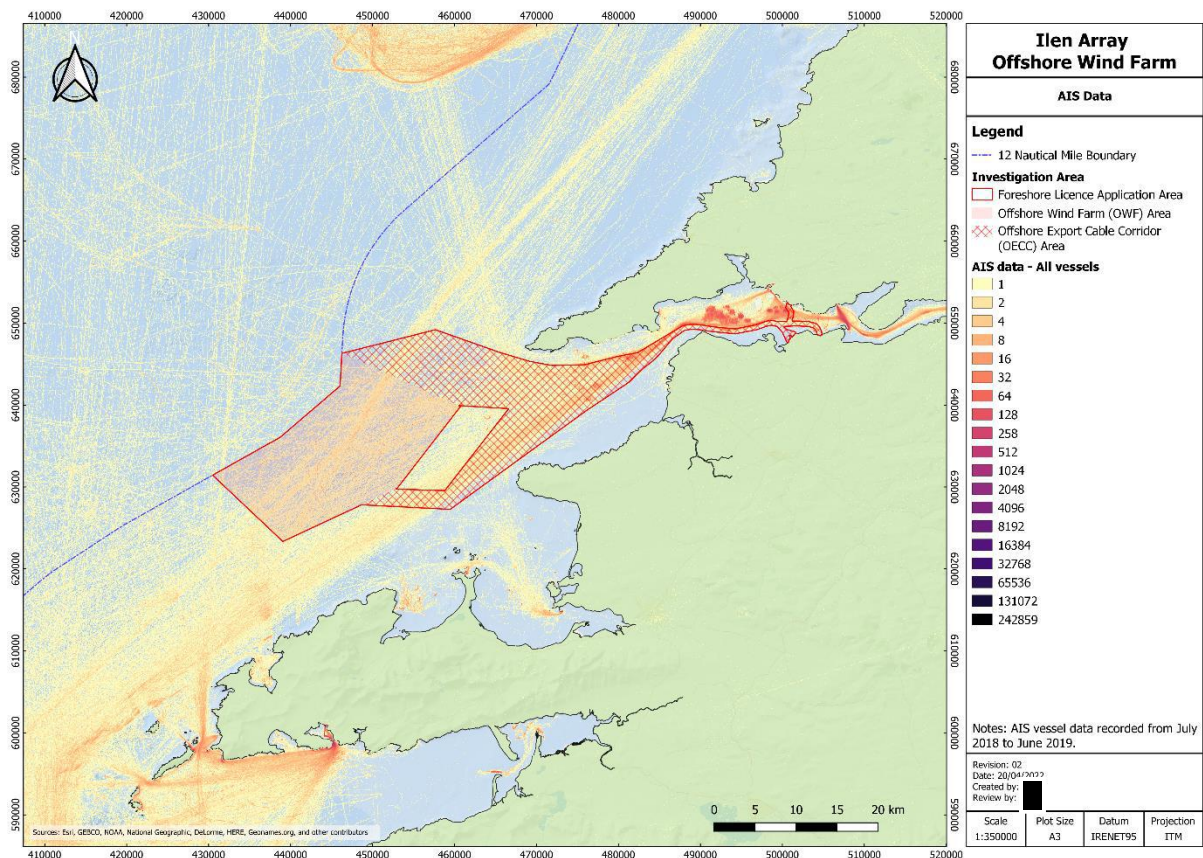


Figure 4-17: Coastguard AIS Traffic Frequency (2018)

The majority of navigation routes within the proposed area are associated with harbour traffic in and out of Foynes Port. Cargo/Tanker vessels and fishing vessels make up the majority of marine traffic in the area with more minor contribution from passenger ships and leisure vessels.

The potential effects on commercial shipping include an increased risk of collision with the static survey equipment and with the survey vessels. Up to two geotechnical vessels will be engaged in undertaking the geotechnical survey. They will typically be travelling at slow speeds and will also be stationary for a large portion of the time (approximately 6 hours at a CPT location, 24-36 hours at a nearshore borehole location and up to 48 hours at an offshore borehole location).

Therefore, navigational channels within the site will be addressed through engagement with the relevant stakeholders, including the Irish Coast Guard, the Department of Transport, Tourism and Sport, local ports and harbours and users of the navigational channels, at appropriate times. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance, in keeping with accepted maritime safety practices. During the survey and deployment operations the vessels will display lights, shapes and other internationally recognised identification or warning signals.

Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and Standards, including a formal notice to mariners in advance of any activity, appropriate navigation lights and liaison with Port authorities to agree the timing of works a communication protocol.

The proposed site investigation activities will be kept to the minimum time period possible. As the surveys and disruption will be temporary and short term, the effect on commercial shipping is considered not to be significant.

4.11 Tourism and Recreation

Overall, the site investigation area has a high value as a marine sport fish zone, both for shore angling and for boat fishing. The Shannon Estuary in particular has become more popularly known for its great inshore sea angling, and charter boats that fish the estuary operate from Kilrush Marina and Carrigaholt, on the Clare side, and Glin on the Limerick side. These areas are also important for tourism and recreation. Marine leisure clubs and groups active in the area include sailing, rowing, diving and surf clubs, as well as sea kayaking tours, stand up paddle boarding and kitesurfing. Furthermore, a resident populations of bottlenose dolphins has become a big attraction in the mouth of the estuary.

Short term and localised impact of the proposed site investigation activities on tourism and recreation may occur. An FLO will be appointed to the project, who will maintain communications with the local fishing communities and other marine users, including leisure users, in order to minimise disruption to leisure and recreation activities.

A notice to mariners will be issued in advance of the proposed site investigation activities. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance in keeping with accepted maritime safety practices.

Activities on site will be kept to the minimum time period possible and will be temporary in nature, with the maximum time expected on site in any one place c. 24-36 hours for boreholes at the landfall locations. These are not likely to interact with other vessel traffic. Therefore, significant effects on marine traffic or other marine users are considered not likely.

4.12 Material Assets

The Irish Marine Atlas and the Foreshore Licence database were reviewed to determine potential infrastructure underlying the Foreshore Licence Application Area. This review process confirmed that the Foreshore Licence Application Area overlaps with one subsea cable, as shown in Figure 4-18. The Eirgrid PLC submarine power cable crosses the Shannon estuary and overlaps with the Foreshore Licence application area, at the westernmost proposed landfall location.

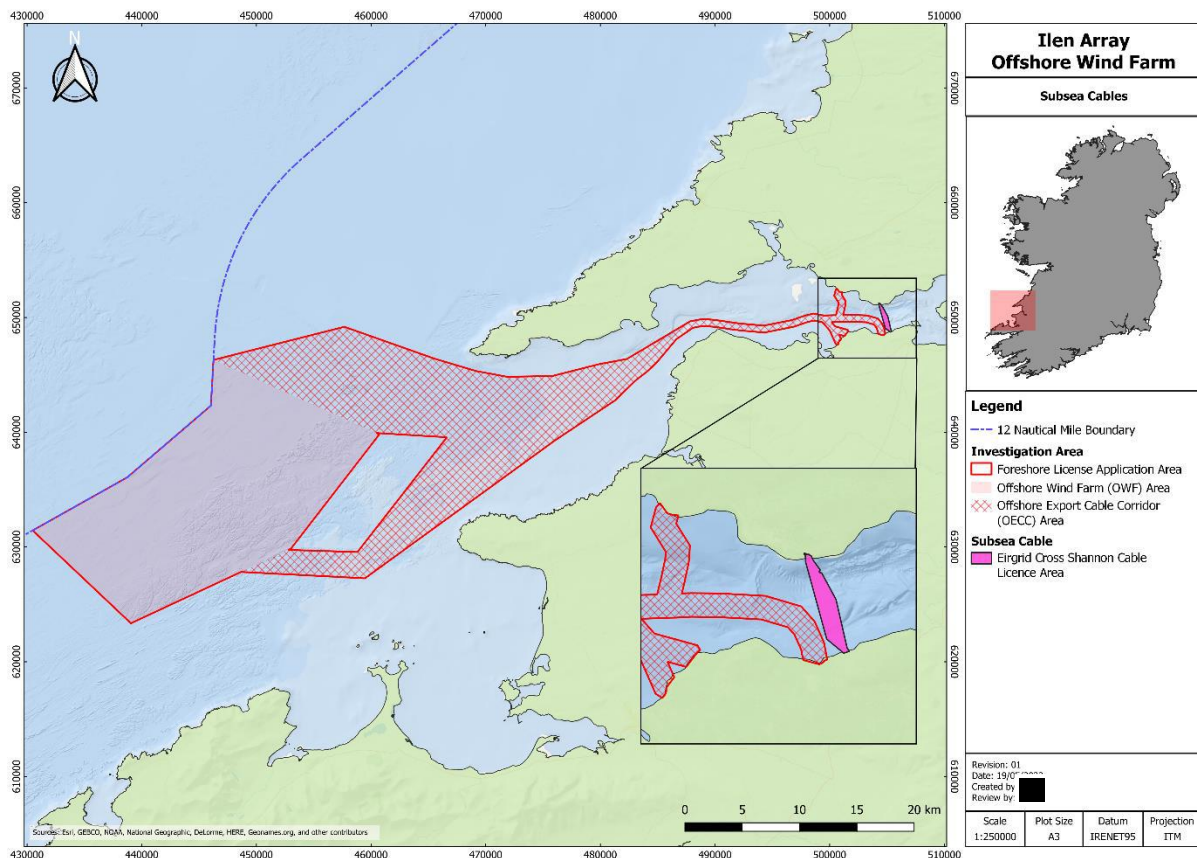


Figure 4-18: Material assets – subsea cables (DHLGH)

The proposed site investigation activities have the potential to result in damage to existing infrastructure, due to direct impact of vessel spud cans, seabed sampling equipment or moorings. Geotechnical sampling locations will be positioned a minimum of 100 m from the as-found position of existing cables and buried pipelines or 250 m from the as-laid position if the position is not confirmed during the non-intrusive surveys. Third party asset owners will be consulted prior to site investigation activities commencing.

Furthermore, the mitigation measures outlined in Section 5 will ensure that the risk of impact upon seabed infrastructure is considered negligible, with no significant effects predicted.

4.13 Archaeology and Cultural Heritage

Shipwreck data available through both the National Monuments Database and the INFOMAR project is shown in Figure 4-19. The National Monument Database identifies shipwrecks within the proposed survey site. However, many of the wrecks from the National Monuments Database are unconfirmed and, unlike the INFOMAR data, do not have recent survey data.

INFOMAR is a joint venture between the Geological Survey of Ireland and the Marine Institute surveying Ireland's seabed. Part of this involves the identification, mapping, and archiving of shipwrecks in Irish waters. The INFOMAR shipwreck data has not identified any shipwrecks within the Foreshore Licence Application Area.

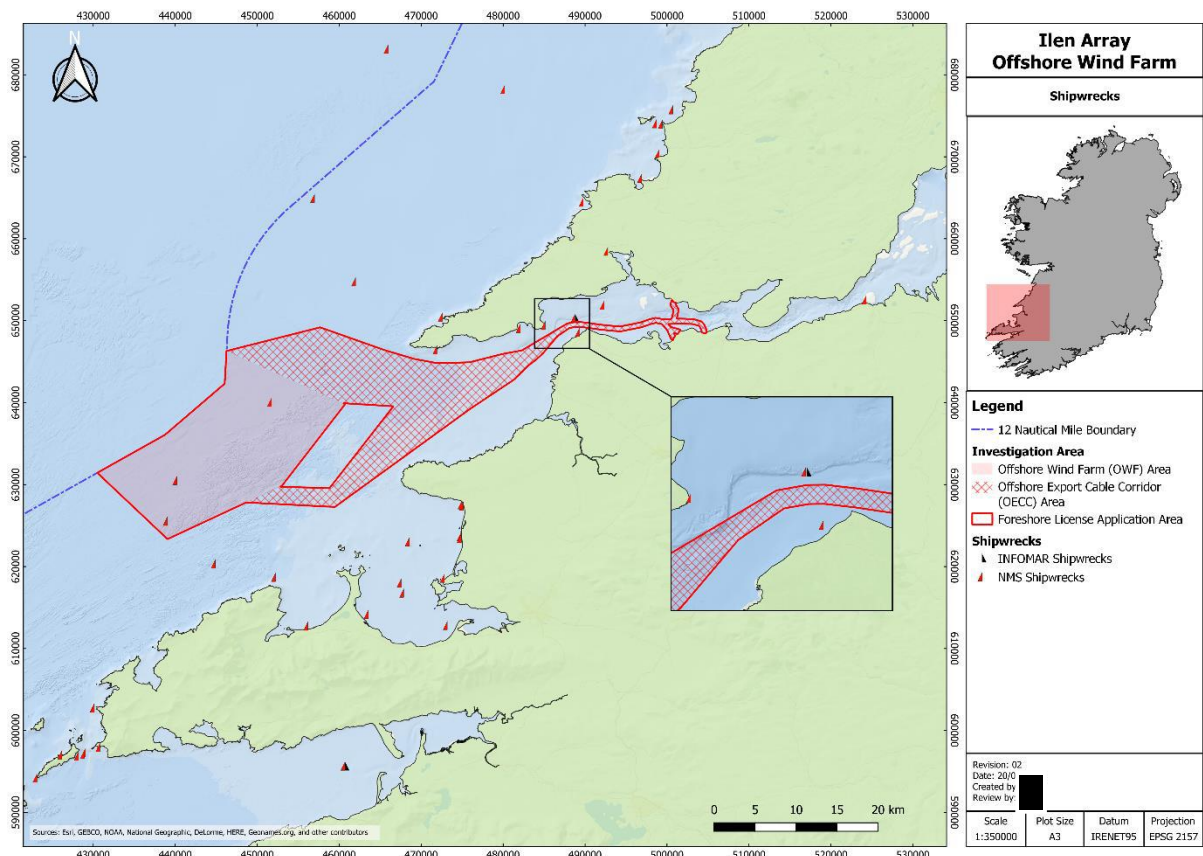


Figure 4-19: National Monument Service (NMS) (DAHG, 2020) and INFOMAR (2020) shipwreck data

Known or suspected wrecks will be avoided during physical sampling activities. All proposed physical sampling locations will be assessed in advance by a suitably qualified archaeologist to ensure that the proposed site investigation activities do not negatively impact on locations where there is known or potential archaeology.

4.14 Landscape and Seascape

The Foreshore Licence Application Area is not subject to any designation intended to protect landscape quality; however, it is included as a Seascape Character Area (SCA) in the Marine Institutes, Regional Seascape Character Assessment for Ireland 2020, where it is described as ‘An expansive SCA that includes both the Shannon Estuary, the Mouth of the Shannon, Tralee Bay and extends offshore for 12 nautical miles. The seascape character alters within this SCA at local scale with the more sheltered estuary contrasting with the elevated and wilder headlands; in turn the broad sweeping Bay of Tralee includes Brandon and Kerry Head; the former in particular allowing long expansive views across Tralee Bay and further north to Loop Head in clear conditions’.

The visual disturbance caused by the proposed site investigation activities will be limited to the presence of 1-2 survey vessels on site. The area is characterised by a number of high-density vessel routes, which are mainly associated with transiting into and out of the Shannon estuary and Foynes Port. This includes regular freight routes, fishing (actively fishing and in transit) and recreational traffic. No significant effects to landscape and seascape receptors are predicted.

4.15 Major Accidents and Disasters

The proposed site investigation activities are not anticipated to exacerbate natural disasters such as earthquakes, subsidence, landslides, erosion or flooding.

It is noted that the proposed Foreshore Licence Application Area is susceptible to fog and severe weather conditions. The potential for a major accident to arise as a result of the proposed activities will be minimised through mitigation measures outlined in Section 5 below. Safety of shipping and navigation mitigation, in particular, will include publication of a formal Marine Notice, lights, shapes and other internationally recognised identification or warning signals displayed on survey vessels, a communication protocol with the Foynes Harbour Master and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.

4.16 Other Proposed Developments

A review of available information for the area surrounding the Foreshore Licence Application Area was undertaken to identify other activities and potential plans, projects and activities in the area. This included the DHLGH Foreshore License Applications and Determinations search tool (DHLGH, 2021), the Environment Protection Agency (EPA) Dumping at Sea Register (EPA, 2021) and the DAFM Aquaculture Licence Search Tool (DAFM, 2021).

Eight plans, projects and activities in the vicinity of the Ilenn Array Offshore Wind Farm Foreshore Licence Application Area were identified and described in detail in the SISAA. These can be seen in Figure 4-20, showing other proposed developments, and in Figure 4-21, showing dumping at sea sites in the vicinity of the Foreshore Licence Application Area.

Section 5.5 of the SISAA identifies and examines projects/proposed projects close to the Ilenn Array Offshore Wind Farm Foreshore Licence Application Area to determine if there is the potential for temporal or spatial overlap. Table 5-5 of the SISAA assesses possible in-combination effects with other projects. The SISAA concluded that Likely in-combination effects were identified between the Ilenn Array Offshore Wind Farm Application and the following project, which was brought forward to Stage 2 AA:

- FS007375 Mainstream Renewable Power Offshore Wind Farm (OWF) Site Investigations

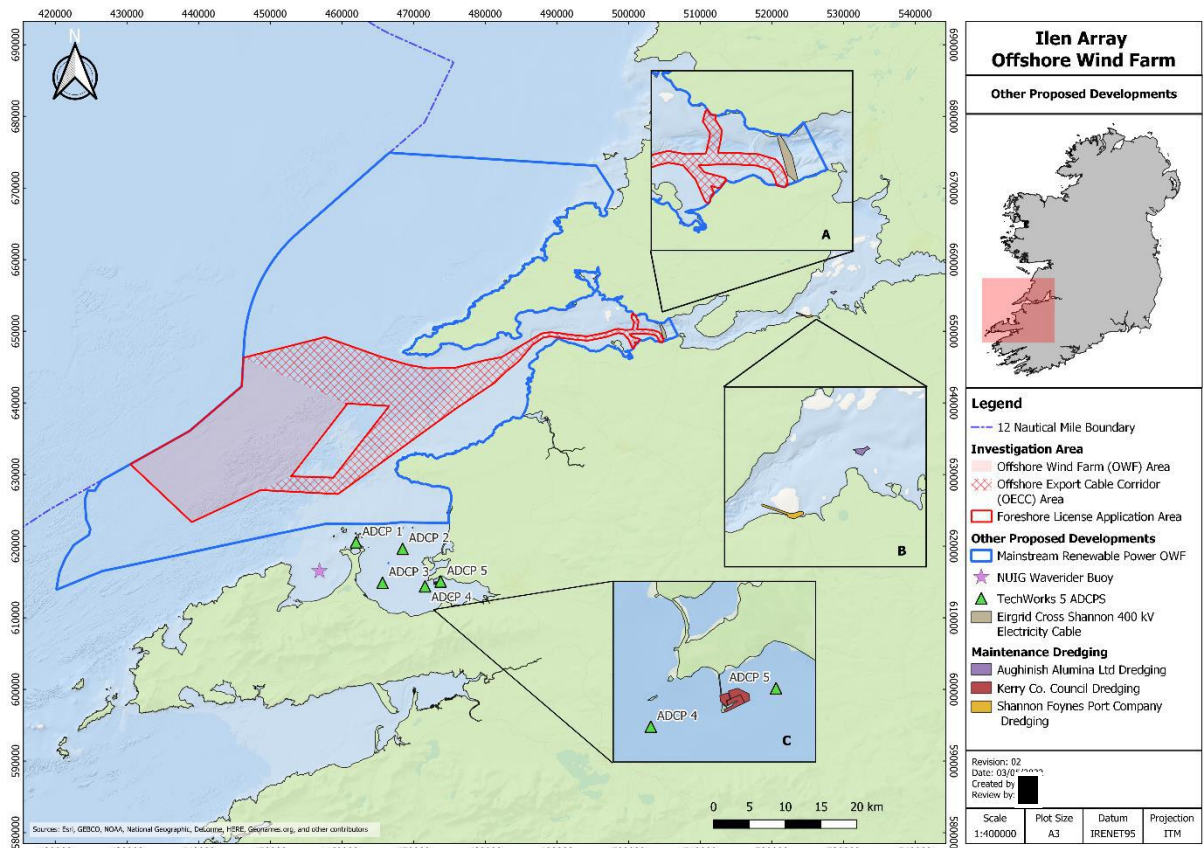


Figure 4-20: Other proposed developments in the vicinity of the Foreshore Licence Application Area (DHLGH, 2021)

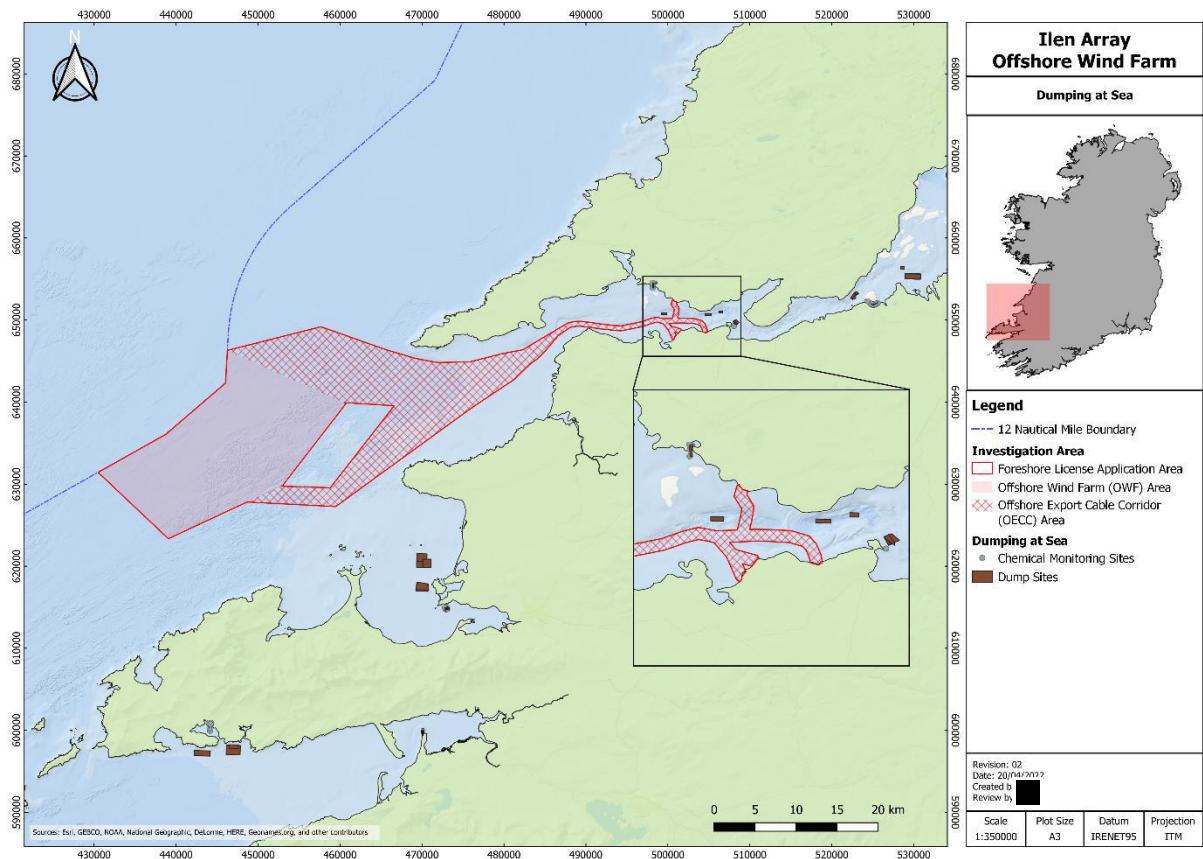


Figure 4-21: Dumping at sea in the vicinity of the Foreshore Licence Application Area (EPA, 2021)

The possible in-combination effects of the project listed above and the Ilen Offshore Wind Farm proposed site investigation activities were identified and assessed in Section 5.5 of the SISAA, and where it was found that there was a possibility of in-combination effects, relevant mitigation measures were incorporated into Section 4 of the NIS for each of the receptors considered. Further mitigation measures are also proposed in Section 4.7 of the NIS, and are summarise in Section 5 of this report

The NIS also concluded that, with the implementation of the mitigation measures detailed therein, and summarised in Section 5 below, adverse in-combination effects of the Ilen Array Offshore Wind Farm proposed site investigation activities with the projects identified and detailed in the paragraphs above, are.

5 Summary of mitigation measures proposed

5.1 Population and Human Health

All proposed site investigation activities will be conducted in accordance with all relevant Health and Safety Legislation and Regulations, and in adherence to all major international shipping conventions, adopted by the International Maritime Organization (and the International Labour Organization) concerning maritime safety and pollution prevention.

5.2 Marine Benthos

For subtidal surveys an ROV or camera will be used in advance of grab sampling to identify areas of protected habitat. If protected habitat is identified, the area will not be subject to physical sampling and camera or video will be used as an alternative.

With respect to intertidal surveys, these will be undertaken within daylight hours and sensitive species within the survey area will be identified, recorded and avoided during sampling.

Samples taken within the intertidal area will be small and by their nature will be taken from soft sediments only. In addition, only a small number of samples will be taken (4-5 along the intertidal area from low water mark to high water mark). The total area affected will be very small in comparison to the overall intertidal area and given the nature of the sediment and its location will be very temporary in effect (likely filled in by the rising tide).

5.3 Marine Mammals

The proposed site investigation activities are temporary in nature and of short duration. The protocol 'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' (DAHG, 2014) will be followed at all times, to minimise disturbance to marine mammals, including the QIs of the nearby SACs. Measures identified within the DAHG guidance are applicable for all geophysical acoustic surveys and include:

- **Marine Mammal Observers (MMOs)** – A qualified and experienced Marine Mammal Observer (MMO) will be appointed to monitor for marine mammals and to log all relevant events using standardised data forms provided by the DAHG.
- **Pre-start monitoring** – Visual search will be conducted, during daylight hours, by an MMO for a pre-soft-start search of 30 minutes i.e. prior to the commencement of marine operations
- **Monitored zone** – Should any marine mammal species be detected within a radial distance of the relevant zone of the survey vessel (as per the DAHG 2014 Guidance), commencement of site investigation activities will be delayed until their passage, or the transit of the vessel, results in the cetaceans being of sufficient distance from the vessel to satisfy the DAHG 2014 Guidance. In both cases, there will be a 30-minute delay from the time of the last sighting within the relevant zone of the survey vessel (as per the DAHG 2014 Guidance) to the commencement / recommencement of the operations. The MMO will use a distance

measuring stick or reticule binoculars to ascertain distances to marine mammals. Note: once started, site investigations will not cease should cetaceans approach the survey vessel.

- **Soft start** – A soft start is the gradual ramping of power over a set period of time, to give any marine mammals adequate time to leave the area. In commencing a seismic survey operation, including any testing of seismic sound sources, where the output peak sound pressure level exceeds 170 dB re: 1µPa @1m, a ramp up procedure will be undertaken in line with the DAHG (2014) guidance. Once the soft start commences, there is no requirement to halt or discontinue the procedure at night-time, if weather or visibility conditions deteriorate, or if marine mammals enter the monitored zone (as per the DAHG 2014 Guidance for monitored zones – activity dependent).
- **Line changes** – Where the duration of a survey line or station change is greater than 40 minutes, the activity will, on completion of the line/station being surveyed, either cease (i.e., shut down) or preferably undergo a reduction in energy output to a lower state where the peak sound pressure level from any operating source is ≤ 170 dB re 1 µPa @ 1 m. Prior to the start of the next line/station, if the power was shut down, all pre-survey monitoring measures and soft start procedures will be followed as for start-up. If there has been a reduction in power, a soft start will be undertaken gradually from the lower output level. The latter sound reduction measure will be applied to line changes at night-time or in daytime conditions of poor visibility. Where the duration of a survey line/station change is less than 40 minutes the activity will continue as normal (i.e. under full output).
- **Breaks in survey periods** – If there is a break in sound output from survey equipment for a period greater than 10 minutes (e.g., due to equipment failure, shut-down, survey line/station change) then all pre-start monitoring measures and ramp-up procedures will recommence prior to re-starting.
- **Reporting** – All recordings of marine mammals species will be made using standardised data forms provided by the NPWS. Full reporting on operations and mitigation will be provided to the NPWS to facilitate reporting under Article 17 of the EC Habitats Directive and future improvements to guidance (DAHG, 2014). The report will also include feedback on how successful the measures were. This requirement will be communicated to the MMOs at project start up meetings and at crew change.
- **Survey vessels speed and course** – The project survey vessels will be moving at a maximum speed of approximately 5 knots during surveys to allow for marine mammal species to move away from the vessel should they be disturbed by the vessel presence or noise emissions. During transit times, the survey vessels will be travelling at speeds greater than 5 knots. However, these movements are not considered to deviate from normal vessel traffic in the Foreshore Licence Application Area. Should marine mammal be found to be in the direct path of a survey vessel, during or outside of survey times, the survey vessel will slow down or, if possible, alter course to avoid collision.

In addition, should Ilen Array Ltd. identify that a temporal overlap is likely between these proposed site investigation activities and those projects identified in the SISAA as having the potential to cause in-combination effects to marine mammals, Ilen Array Ltd. will engage with those projects to ensure

that activities are sufficiently distanced to ensure that adverse effects on marine mammals are mitigated for.

5.4 Birds

As no LSE are expected for any bird species in result of the proposed site investigation activities, no mitigation measures are proposed.

5.5 Fish Ecology

The protocol 'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' (DAHG, 2014) will be followed at all times, and while that guidance was not written with noise pressure sensitive fish species in mind, it includes the use of the soft-start/ramp-up procedure which is a suitable mitigation measure for such species. These measures will ensure that any adverse effect due to disturbance caused by underwater noise will be mitigated for.

Measures identified within the DAHG guidance are applicable for all geophysical acoustic surveys; please refer to Section 5.3 Marine Mammals for detail relating to compliance with the DAHG 2014 guidance referenced above.

In addition, should Ilen Array Ltd. identify that a temporal overlap is likely between these proposed site investigation activities and those projects identified in the SISAA as having the potential to cause in-combination effects to noise pressure sensitive fish species, Ilen Array Ltd. will engage with those projects to ensure that activities are sufficiently distanced to ensure that adverse effects on such species are mitigated for.

5.6 Natura 2000 Sites

5.6.1 Annex I Habitats

See Section 5.2 Marine Benthos for proposed mitigation measures for Annex I Habitats.

5.6.2 Annex II Species

See Section 5.3 Marine Mammals for proposed mitigation measures for Annex II marine mammal species; and see Section 5.5 Fish Ecology for proposed mitigation measures for Annex II migratory fish species.

5.7 Water, Air and Climate

Biodegradable polymer mix will be used throughout drilling operations where possible. Chemical material used will be from the List of Notified Chemicals (approved chemicals) and discharged into the marine environment under the Offshore Chemical Notification Scheme.

Strict maritime regulations, normal vessel operating standards and precautions, compliant with all International Maritime Law and National Maritime Legislation, will ensure the risk of a release is low and no significant effects are predicted.

In addition, all vessels used shall, as required by law, be MARPOL compliant and fully certified by the Maritime Safety Office.

No LSE are predicted from the site investigation activities on Air or Climate, therefore no mitigation measures were proposed.

5.8 Commercial Fisheries

During the proposed site investigation activities, namely the geophysical and geotechnical survey operations, the deployment of metocean equipment and during mobile ecological surveys, other vessels will be requested to maintain a safe distance from the survey vessels due to their restricted manoeuvrability. Fishermen will also be requested to avoid the static survey equipment once it is deployed, which will have a very small footprint.

Additionally, for the duration of the geophysical survey only, fishermen with static gear such as whelk/lobster/crab pots within the survey area will be requested to temporarily remove them. The impact upon the commercial fishing sector will be minimised by planning of the survey to minimise the spatial extent and duration of the necessary gear removal. Furthermore, the proposed site investigation activities will be temporary and have a short duration.

In addition, Ilen Array Ltd. has appointed an FLO to engage with local fishing community in order to determine the full extent of fishing effort in the Foreshore Licence Application Area, and to minimise disruption to the activity.

5.9 Aquaculture and Shellfish Ecology

See Section 5.2 Marine Benthos for proposed mitigation measures for Shellfish Ecology.

5.10 Marine Traffic

Navigational channels within the site will be addressed through engagement with the relevant stakeholders, including the Irish Coast Guard, the Department of Transport, Tourism and Sport, local ports and harbours and users of the navigational channels, at appropriate times. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance, in keeping with accepted maritime safety practices.

During the survey and deployment operations the vessels will display lights, shapes and other internationally recognised identification or warning signals.

Mitigation measures will be in place to ensure compliance with the International Regulations for Preventing Collisions at Sea and standards, including a formal notice to mariners in advance of any activity, appropriate navigation lights and liaison with Port authorities to agree the timing of works and to agree a communication protocol.

The proposed site investigation activities will be kept to the minimum time period possible, and the surveys and disruption will be temporary and short term.

5.11 Tourism and Recreation

An FLO has been appointed to the project, who will maintain communications with the local fishing communities and other marine users, including leisure users, in order to minimise disruption to leisure and recreation activities.

A notice to mariners will be issued in advance of the proposed site investigation activities. No specific exclusion zone will be sought; however, vessels will be asked to maintain a safe distance in keeping with accepted maritime safety practices.

Activities on site will be kept to the minimum time period possible and will be temporary in nature, with the maximum time expected on site in any one place c. 24-36 hours for boreholes at the landfall locations and up to 48 hours at offshore locations.

5.12 Material Assets

Geotechnical sampling locations will be positioned a minimum of 100 m from the as-found position of existing cables and buried pipelines or 250 m from the as-laid position if the position is not confirmed during the non-intrusive surveys. Third party asset owners will be consulted prior to site investigation activities commencing.

5.13 Archaeology and Cultural Heritage

Known or suspected wrecks will be avoided during physical sampling activities. All proposed physical sampling locations will be assessed in advance by a suitably qualified archaeologist to ensure that the proposed site investigation activities do not negatively impact on locations where there is known or potential archaeology

5.14 Landscape and Seascape

As no LSE are expected to any landscape or seascape in result of the proposed site investigation activities, no mitigation measures are proposed.

5.15 Major Accidents and Disasters

Safety of shipping and navigation mitigation will include publication of a formal Marine Notice, lights, shapes and other internationally recognised identification or warning signals displayed on survey vessels, communication protocol with the Foynes Port Company and compliance with all requirements of the International Regulations for Preventing Collisions at Sea.

5.16 Other Proposed Developments

Relevant mitigation measures were included in the Sections above where possible in-combination effects were identified on particular receptors. Furthermore, having examined the possible likely effects of the Ilen Array Offshore Wind Farm proposed site investigation activities, it is concluded that due to the:

1. Implementation of effective communication between Ilen Array Offshore Wind Farm and those projects listed in Section 4.16;
2. Likely timing and phased nature of proposed site investigation activities;
3. Temporary nature of proposed site investigation activities;
4. Very localised and imperceptible effects of proposed site investigation activities; and
5. Implementation of the DAHG (2014) best practice guidelines;

adverse in-combination effects of the Ilen Array Offshore Wind Farm proposed site investigation activities with the projects identified as having possible in-combination effects in Section 4.16 on the environment is considered not likely.

6 Conclusion

The EIA Screening exercise conducted in Section 3 concluded that the proposed site investigation activities are not subject of the EIA Directive, and therefore no Screening is required, and no EIA is required.

The Non-statutory Environmental Assessment in this report has been undertaken based upon the information provided in this report, as well as in the information provided in a number of other reports submitted in support of the Application, and the implementation of the mitigation measures proposed therein. These reports are:

- Supporting Information for Screening of Appropriate Assessment (SISAA)
- Natura Impact Statement (NIS)
- European Protected Species Risk Assessment for Annex IV Species (EPSRA)

The Non-statutory Environmental Report concludes that due to the nature, scale and location of the proposed site investigation activities, there are no foreseeable significant effects on the environment arising from the proposed site investigation activities.

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