18. OTHER SEA USERS

18.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) will consider the likely effects of the Offshore Site (as detailed in Chapter 5) on Other Sea Users during the construction, operation and maintenance, and decommissioning phases. Where required, mitigation is proposed, and the residual effects and their significance are assessed. Potential cumulative and transboundary impacts are also considered.

For the purpose of this EIAR, the assessment of Other Sea Users considers the following groups or receptors identified in the consultative process and otherwise as part of the assessment for potential effects:

- Aquaculture;
- Marine dredge disposal sites;
- Renewable energy developments;
- Submarine cables and pipelines;
- Oil and gas;
- Military exercise areas and danger areas; and
- Other marine users.

The information presented in this Chapter draws on the outcomes of other impacts assessments undertaken for the following Chapters assessed independently as part of this EIAR, including;

- Chapter 14: Shipping and Navigation.

Impacts to other human receptors within the marine environment (i.e., commercial fisheries, shipping and navigation activities and aviation and radar) are not considered as part of the Other Sea Users assessment, and instead are assessed independently as part of this EIAR in the following Chapters:

- Chapter 13: Commercial Fisheries;
- Chapter 14: Shipping and Navigation; and
- Chapter 15: Civil and Military Aviation.

A preliminary UXO assessment report found that the likelihood of encountering UXO at the site was generally unlikely. Review of geophysical data ahead of geotechnical surveys found that there were no signs of UXO presence at the proposed locations. Any potential impacts associated with future UXO discovery in relation to the Project have been assessed within Chapter 12: Marine Mammals and Other Megafauna and Chapter 10: Fish and Shellfish Ecology. UXO are not considered further within the Other Sea Users chapter.

Xodus Group Limited (Xodus) is the sole contributor to the Other Sea Users assessment and has prepared this EIAR chapter.

18.1.1 Statement of Authority

This Chapter of the EIAR has been prepared by Stephanie Blyth of Xodus. Stephanie is an Environmental Consultant with Xodus, having joined the company in November 2021. Stephanie holds a BSc (Hons) in Marine Biology and an MSc (Merit) in Climate Change: Managing the Marine Environment from Heriot Watt University, Edinburgh. Stephanie has supported on a number of offshore environmental impact assessments for offshore wind, electrification and submarine cable

scopes. Stephanie has authored a number of other sea users Scoping Report chapters for offshore wind and cable scopes, including for the Salamander Floating Offshore Wind Farm, the Loch Garman and Helvick Head Offshore Wind Farms and the Cambois Connection submarine cable.

This Chapter of the EIAR has been overseen and reviewed by Ashleigh Fenton of Xodus. Ashleigh is a Senior Environmental Consultant with Xodus, having joined the company in November 2019. Ashleigh holds a BSc (Hons) Geology from the University of Aberdeen. Ashleigh has supported and managed a number of offshore Environmental Impact Assessments (EIA) for offshore wind (including the Pentland Floating Offshore Wind Farm and the West of Orkney Wind Farm), as well as several electrification and submarine cable scopes for which she has provided marine consents management support. In these roles Ashleigh has been lead author and reviewer for a number of Other Sea Users assessments including stakeholder consultation with these users and thus has significant insight into key issues for Other Sea Users for marine based developments.

18.2 Legislation Policy and Guidelines

In addition to the overarching legislation, policy and guidance documents which are applicable to the EIA as a whole (as summarised in Chapter 2: Background and Policy), the following policy and guidance documents are considered relevant to the assessment of potential effects of the Project on Other Sea Users.

18.2.1 Policy

- Ireland's National Marine Planning Framework (NMPF) (Department of Housing, Local Government and Heritage (DHLGH, 2021):
  - Co-existence Policy 1;
  - Defence and Security Policy 1;
  - Aquaculture Policy 2;
  - Offshore Renewable Energy (ORE) Policy 1, 2, 4 and 8;
  - Transmission Policy 1 and 2;
  - Port, Harbours and Shipping Policy 8;
  - Safety at Sea Policy 1;
  - Sport and Recreation Policy 1, 2 and 5; and
  - Telecommunications Policy 2.

18.2.2 Guidance

- Assessment of Impact of Offshore Wind Energy Structures on the Marine Environment (Marine Institute, 2000);
- International Cable Protection Committee (ICPC) Recommendations (ICPC, 2019);
- Guidelines on the information to be contained in Environmental Impact Assessment Report (EPA, 2022);
- Guidance on EIA and NIS Preparations for Offshore Renewable Energy Projects (DCCAE, 2017);
- Proximity of Offshore Renewable Energy Installations and Submarine Cable Infrastructure in UK waters (European Subsea Cables Association (ESCA), 2016);
- The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Guidance on Environmental Considerations for Offshore Wind Farm Development (OSPAR, 2008);
- Decommissioning of Offshore Renewable Energy Installations Guidance Notes for Industry (UK Department of Business Energy and Industrial Strategy, 2019); and
- Cumulative Impacts Assessment Guidelines: Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms (Renewables UK, 2018).

18.3 Scoping and Consultation

Stakeholder consultation has been ongoing throughout the EIA and has played an important part in ensuring the scope of the baseline characterisation and impact assessment are appropriate with respect to the Project and the requirements of the regulators and their advisors.

The Sceirde Rocks Offshore Windfarm (OWF) Scoping Report was submitted to key stakeholders in August 2023. Comments received from the Scoping Opinion which are considered relevant to the assessment of impacts to Other Sea Users have been summarised in Table 18-1 below. A high-level response on how and where these comments have been addressed within the Other Sea Users EIA chapter are also provided.

Table 18-1 Scoping opinion comments received of relevance to Other Sea Users

Consultee	Comment	Where the comment has been addressed in the EIAR
BIM (Bord Iascaigh Mhara)	No response.	No action required.
Clare County Council - Environment Department	Advised that Scoping Report should be issued to the Planning Department. No further comment.	No action required.
Commissioners of Irish Lights	Meetings with Irish Lights, Corio, MKO and Xodus on 22/11/2023 and 17/10/2024. During meetings, Irish Lights noted that: - Irish guidance document is still being worked on, but in the interim, there is an expectation that projects will align with Marine Guidance Note (MGN) 654, and with the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) requirements. - Irish Lights will be most interested with the lighting and marking aspects of the site that will need to be provided in accordance with industry standards - Irish Lights will undertake inspections of the lighting systems on the turbines during the operational phase."	WTGs will be fitted with appropriate lighting as per Lighting and Marking Plan (Appendix 5-9) embedded mitigation in Section 18.4.5.
Department of Defence	Following consultations with the relevant Military authorities, the Department of Defence have no observations at this juncture in time. Dept would appreciate if we can keep them informed on progress relating to the project, in	No action required. Military activity assessed in 18.6.

	particular if it progresses to pre-planning stage.	
Diving Ireland (Irish Underwater Council)	No response.	No action required.
Galway County Council - Environment Department	No response.	No action required.
Inland Fisheries Ireland	Advised purpose of scoping and requested if there is another method to issue it to them, no response received on both occasions.	No action required.
Irish Coast Guard (IRCG)	IRCG noted that the EIAR scoping report does not take into account the contents of the National Maritime Oil/HNS Spill Contingency Plan and the National SAR plan and advised that these elements should be considered within the EIAR.	Marine pollution is considered within mitigation by design in Section 18.4.5 and Appendix 5-3: Marine Pollution Contingency Plan Access to search and rescue (SAR) vessels and aircraft is considered within Chapter 3: Site Selection and Alternatives, and furthermore in Chapter 14: Shipping and Navigation.
Rossaveel Harbour Master	Stated that document is substantial and appears to cover all areas.	No action required.
Royal National Lifeboat Institution	No response.	No action required.
Sea Fisheries Protection Authority	No response.	No action required.

18.4 Assessment Methodology

18.4.1 Data and Information Sources

The following publicly available data and information sources (Table 18-2) have been used to inform the characterisation of the existing baseline environment.

Table 18-2 Data and information sources used to inform the Other Sea Users baseline description

Title	Description	Author	Date
Marine Institute Open Access Repository and Ireland's Marine Atlas	https://www.marine.ie/site-area/data-services/interactive-maps/irelands-marine-atlas	Marine Institute	2024

Title	Description	Author	Date
European Marine Observation and Data Network (EMODnet)	https://www.emodnet-humanactivities.eu/view-data.php	EMODnet	2024
Kingfisher Information Services (KISORCA)	https://kis-orca.org/map/	KISORCA	2024
National Marine Planning Framework SEA Environmental Report	https://www.gov.ie/en/publication/a4a9a-national-marine-planning-framework/	DHLGH	2024
Department for Environment, Climate and Communications (DECC) – Current Applications for Statutory Consents	https://www.gov.ie/en/organisation/department-of-the-environment-climate-and-communications/	DECC	2024
Department of Housing, Local Government and Heritage (DHLGH) Foreshore Unit Applications	https://www.gov.ie/en/collection/f2196-foreshore-applications-and-determinations/	DHLGH	2024
Maritime Area Regulatory Authority (MARA) Maritime Area Consents and User Licences	https://www.maritimeregulator.ie/our-work/maritime-area-consents/applications-received/	MARA	2024
Department of Agriculture, Food and the Marine (DAFM) Aquaculture Licence Applications	https://www.gov.ie/en/collection/d8ea9-aquacultureforeshore-licence-applications/	DAFM	2024
Environmental Reports for the Galway Bay Marine and Renewable Energy Test Site	https://tethys.pnnl.gov/project-sites/galway-bay-test-site	Tethys	2006-2022

18.4.2 Consideration of data sources and quality

The existing baseline environment (as described in section 18.5.2.1) has been informed through an extensive review of publicly available data and information sources (as identified in Table 18-2) and through consultation on the Sceirde Rocks OWF Scoping Report. While the information presented from these sources is considered sufficient to describe the existing baseline conditions for this EIAR, where there is uncertainty regarding the location, timing and nature of an activity, a precautionary approach to the assessment of potential effects has been undertaken. Reference to any precautions or assumptions made regarding the assessment of effects of a particular receptor will be clearly stated where appropriate within this Chapter. It is considered that adequate information is available to inform a robust EIAR chapter on Other Sea Users.

18.4.3 Assessment Methodology

18.4.3.1 Impacts Requiring Assessment

All potential impacts that are relevant to and have been scoped into the Other Sea Users assessment are detailed in Table 18-3 below.

Table 18-3 Potential impacts requiring assessment

Potential Impact	Description	Nature of Impact
Potential Impacts during Construction and Decommissioning		
Obstruction to offshore renewable energy developments during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to offshore renewable energy developments. Additionally, construction works could result in damage to infrastructure if there is overlap with the Offshore Site.	Direct
Obstruction to cable installations during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to cable installations. Additionally, construction works could result in damage to cables if there is overlap with the Offshore Site.	Direct
Obstruction to marine recreational users during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to marine recreational users.	Direct
Obstruction to aquaculture operations during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to aquaculture operations.	Direct
Potential impacts from suspended sediment concentration (SSC), release of contaminated sediments and vessel pollution to aquaculture operations	Works associated with the construction and decommissioning of the Project, including the sediment plumes and the release of contaminated sediment and the accidental release of pollutants from vessel operations have the potential to result in an obstruction to aquaculture operations.	Direct

Potential Impact	Description	Nature of Impact
Obstruction to military activities during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to military activities.	Direct
Obstruction to oil and gas activities during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to oil and gas activities. Additionally, construction works could result in damage to oil and gas infrastructure if there is overlap with the Offshore Site.	Direct
Obstruction to spoil disposal activities during construction and decommissioning activities.	Works associated with the construction and decommissioning of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges have the potential to result in an obstruction to spoil disposal activities.	Direct
Potential Impacts during Operation and Maintenance		
Obstruction to offshore renewable energy developments during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to offshore renewable energy developments. Additionally, operation and maintenance works could result in damage to renewable infrastructure if there is overlap with the Offshore Site.	Direct
Obstruction to cable installations during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to cable installations. Additionally, operation and maintenance works could result in damage to cables if there is overlap with the Offshore Site.	Direct
Obstruction to marine recreational users during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to marine recreational users.	Direct

Potential Impact	Description	Nature of Impact
Obstruction to aquaculture operations operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to aquaculture operations.	Direct
Potential impacts from SSC, release of contaminated sediments and vessel pollution to aquaculture operations	Works associated with the operation and maintenance of the Project, including the sediment plumes and the release of contaminated sediment and the accidental release of pollutants from vessel operations have the potential to result in an obstruction to aquaculture operations.	Direct
Obstruction to military activities during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to military.	Direct
Obstruction to oil and gas activities during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to oil and gas activities. Additionally, operation and maintenance works could result in damage to oil and gas infrastructure if there is overlap with the Offshore Site.	Direct
Obstruction to spoil disposal activities during operation and maintenance activities.	Works associated with the operation and maintenance of the Project, including the physical presence of Project vessels and associated advisory safe clearance ranges, and the physical presence of Project infrastructure have the potential to result in an obstruction to spoil disposal activities.	Direct

18.4.3.2 Characterisation of Impacts and Effects

An assessment of likely impacts is provided for the construction, operation and maintenance and decommissioning phases of the Project. The assessment for Other Sea Users is undertaken in line with the principles outlined in Chapter 4: Environmental Impact Assessment Methodology and the Environmental Protection Agency (EPA) EIAR Guidelines (EPA, 2022). The characterisation of impacts and effects considers the following:

- **Quality of effects**: Whether an effect results in a change that improves (positive) or reduces (negative) the quality of the environment;
- **Extent**: Describes the size of the area, the number of sites and/or the proportion of a population affected by an effect;

- **Context**: Describes whether the extent, duration or frequency will conform or contrast with established (baseline) conditions;
- **Probability**: If effects are likely or unlikely;
- **Duration**: Describes the length of time an impact is expected to occur based on the set definitions within the guidelines;
- **Frequency**: Describes how often the effect will occur (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, annually, etc.); and
- **Reversibility**: Whether an effect can be undone, through remediation or restoration.

The criteria for the sensitivity of other sea user receptors are presented within Table 18-4, and the magnitude of the impact is presented within Table 18-5.

Table 18-4 Definitions of receptor sensitivity for the Other Sea Users assessment

Receptor sensitivity	Definition
High	• The receptor or group has no capacity to accommodate a particular effect and no ability to recover or adapt. • The economic value of the receptor or group is of international or national importance.
Medium	• The receptor or group has low capacity to accommodate a particular effect with low ability to recover or adapt. • The economic value of the receptor or group is of regional importance.
Low	• The receptor or group has some tolerance to accommodate a particular effect or will be able to recover or adapt. • The economic value of the receptor or group is of local importance.
Negligible	• The receptor or group is generally tolerant and can accommodate a particular effect without the need to recover or adapt. • The receptor or group is widespread and of low economic value.

Table 18-5 Definitions for impact magnitude for the Other Sea Users assessment

Impact magnitude	Definition
High	• An impact will result in a total change or major alteration to key elements/features of baseline conditions. • The impact will occur over a large scale or spatial geographical extent and/or is long-term or permanent in nature. • The impact will occur at a high frequency and/or at high intensity.
Medium	• An impact will result in a partial change or alteration to one or more key elements or features of baseline conditions. • The impact will occur over a medium scale/spatial extent and/or has a medium-term duration. • The impact will occur at a medium to high frequency and/or at moderate intensity or occurring occasionally/intermittently for short periods of time but at a moderate to high intensity.
Low	• An impact will result in a minor shift away from baseline conditions.

Impact magnitude	Definition
	› The impact will occur over a local to medium scale/spatial extent and/or has a short to medium-term duration. › The impact is unlikely to occur or at a low frequency.
Negligible	› An impact will result in a very slight change from baseline conditions. › The impact is highly localised and short term with full, rapid recovery expected to result in very slight or imperceptible changes to baseline conditions. › The impact is very unlikely to occur and, if it does occur, will occur at very low frequency or intensity.

18.4.3.3 Determining Significance of Effects

The EPA Guidelines definitions for describing significance of effects have been used for the Other Sea Users impact assessment (as defined within Table 18-6).

Table 18-6 Significance of Effects

Significance criteria	Definition	Significance
Imperceptible	An effect capable of measurement but without significant consequences.	Not significant.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.	
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.	
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.	Significant; tolerable.
Significant Effects	An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment.	Significant; not tolerable. Mitigation measures must be in place to prevent, reduce, or avoid the impact, and if not possible then compensatory measures are proposed.
Very Significant	An effect which, by its character, magnitude, duration or intensity, significantly alters most of a sensitive aspect of the environment.	
Profound Effects	An effect which obliterates sensitive characteristics.	

18.4.4 Project Design Parameters

As outlined in Chapter 4: Environmental Impact Assessment Methodology, this assessment considers the design of the Project as part of the assessment of likely impacts on Other Sea Users. The approach to impact assessment within this EIAR assesses the Project design (as detailed in Chapter 5: Project Description). The key Project design elements which are considered relevant to the assessment of Other Sea Users are summarised below:

- 30 Wind Turbine Generators (WTG) and one Offshore Substation (OSS);
- Offshore Array Area (OAA) of 37.28 km^2;
- A network of 73 km of inter-array cables (IAC) connecting WTGs to each other and the OSS;

- An Offshore Export Cable (OEC) of 63.5 km in length;
- 23 construction vessels; and
- Operation and maintenance vessels total (see table below for details).

The Project design elements identified above are considered to represent the greatest potential impacts resulting in a change to existing baseline conditions. Table 18-7 below presents Project design parameters relevant to each potential impact scoped in for further assessment as part of this EIA during the construction, operation and maintenance and decommissioning phases of the Project.

Table 18-7 Development parameters relevant to the Other Sea Users assessment

Potential Impact	Development Parameter	Requirements
Construction and Decommissioning		
Obstruction to offshore renewable energy developments as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.	Construction period of 4 years with works typically undertaken 24 hours a day, 7 days a week. Construction of 30 WTGs and one OSS within the 37.3 km^2 Offshore Array Area (OAA) and an OEC of 63.5 km in length within the OECC. Total of 23 vessels required for the construction phase, including: › Subsea preparation for GBS: › 2 vessels (1 fallpipe vessel and 1 Trailing suction hopper dredger (TSHD)) › OSS Topside › 3 vessels (Heavy load vessel (HLV), tug, barge or optional Wind Turbine Installation Vessel (WTIV)) › IAC › 4 vessels (1 cable lay vessel (CLV), 1 Trenching support vessel, 1 service ops vessel, 1 rock placement vessel) › OEC: › 5 Vessels (1 CLV, 1 trenching support vessel, 1 service ops vessel, 1 rock placement vessel, 1 shallow water pull in vessel) › GBS: › 4 vessels (1 main tug, 2 assist tugs, 1 infield tug) › WTGs: › 3 vessels (1 WTIV, 1 service ops vessel, 1 crew transfer vessel (CTV) › Other › 2 Guard vessels › Total of 7 vessels required for decommissioning, including: › 1 service ops vessel, 1 crew transfer vessel, 1 WTIV and 4 tugs	The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to other offshore renewable energy developments.
Obstruction to cable installations as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to other cable installations.
Obstruction to marine recreational users as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to marine recreational users.
Obstruction to military activities as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to military activities.

Potential Impact	Development Parameter	Requirements
Obstruction to oil and gas activities as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.	An advisory safe clearance range of up to 500 m from construction activities will be applied and maintained throughout the construction and decommissioning phase and during periods of major disturbance, with an advisory safe clearance range of up to 50 m applied and maintained during pre-commissioning works around partially constructed infrastructure.	The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to oil and gas activities.
Obstruction to spoil disposal activities as a result of advisory safe clearance ranges around Project vessels during construction and decommissioning activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to spoil disposal activities.

Obstruction of Aquaculture and fish farm activities as a result of increased SSC and release of contaminated sediments from seabed disturbance and Horizontal Direct Drilling activities and vessel pollution during construction and decommissioning	› Seabed preparation (4 months)
	  › Total volume of seabed sediment required to be dredged: 150,000 m3
	  › Boulder clearance, Controlled flow excavation (CFE) and Pre-lay Grapnel Run (PLGR) – 20 m wide disturbance corridor (no clearance activities required in OECC).
	  › Two disposal sites in OAA (up to 15 disposal events):
	  › Area of Disposal Site 1 = 25,842 m^2 & Volume of dredged material to be disposed of at Disposal Site 1: 37,500 m3
	  › Area of Disposal Site 2 = 78,229 m^2 & Volume of dredged material to be disposed of at Disposal Site 2: 112,500 m^3
	› Inter-array (16 months) and export cable (15 months) installation
	  › Total length of the IAC = 73.0 km
	  › Total length OEC = 63.5 km
	  › Burial trench using jet trencher, mechanical cutting trencher and/or CFE, to a target depth of lowering of 1 m.
	  › Total seabed temporarily disturbed by cable installation: 996,950 m^2
		The dimensions, footprints and volumes represent the direct impact scenarios on the seabed sediment which can result in the direct generation of increased suspended sediment concentration and release of contaminated sediment into the water column with the potential to impact aquaculture and fish farm activities.

Potential Impact	Development Parameter	Requirements

	› Landfall – Trenchless landfall installation (3 months)
	  › Trenchless landfall duct = 0.9 km length / volume of exit pit = 2000 m^3
	  › Area of disturbance due to side casting dredged materials = 1000m^3
	
	› Sum total temporary seabed disturbance = 1,132,151 m^2	

Operation and Maintenance		
Obstruction to offshore renewable energy developments as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.	Operational life of 38 years from commissioning. Presence of: › 30 WTGs; › An OEC of 63.5 km in length; › One OSS; and › A network of 73 km of IAC connecting WTGs to each other and the OSS. Operation and maintenance activities are categorised into two groups: planned/preventative and unplanned/corrective maintenance. Operation works will include the following campaigns: › Up to 2 crew transfer vessels to be used per day; › 1 service operations vessel per day; › 4 daily return vessel movements (4 crew transfer vessels); › 2 annual WTIV (jackup) intervention campaigns per year; › 1 blade repair platform campaign per year; › 5 unplanned cable repair vessel interventions over project life; › 1 planned cable survey per year for first five years (1 every 5 years thereafter); and › Oil exchange vessel (1 every 10 years).	The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to other offshore renewable energy developments.
Obstruction to cable installations as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to other cable installations.
Obstruction to marine recreational users as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to marine recreational users.
Obstruction to military activities as a result of advisory safe clearance ranges		The dimensions, footprints volumes and advisory safe clearance ranges

Potential Impact	Development Parameter	Requirements
around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.	An advisory safe clearance range of up to 50 m will be applied and maintained around WTGs and OSS during the operation and maintenance phase of the Project. An advisory safe clearance range of up to 500 m will be applied and maintained around Project vessels during operation and maintenance periods and during periods of major disturbance.	represent the direct impact scenarios on the seabed which can result in the direct obstruction to military activities.
Obstruction to oil and gas activities as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to oil and gas activities.
Obstruction to spoil disposal activities as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure during operation and maintenance activities.		The dimensions, footprints volumes and advisory safe clearance ranges represent the direct impact scenarios on the seabed which can result in the direct obstruction to spoil disposal activities.
Obstruction of Aquaculture and fish farm activities as a result of increased SSC and release of contaminated sediments from seabed disturbance such as cable repairs and vessel pollution during operation and maintenance.	› Operational life of up to 38 years. › Operation works will include the following relevant campaigns: › Cable maintenance and repairs may also be required during the lifetime of the Project. Interventions required could include increasing the cable depth of lowering in locations along the cable route where a mobile seabed may lead to cable exposure risk. If a need for cable maintenance or repair is identified, the location, scale and type of damage will determine the repair methodology and timing. The affected area may require cable cutting, replacement and/or jointing of the cable sections and installation of additional cable protection. Major repair works may also be required throughout the operational and maintenance phase.	The dimensions, footprints and volumes represent the direct impact scenarios on the seabed sediment which can result in the direct generation of increased suspended sediment concentration and release of contaminated sediment into the water column with the potential to impact aquaculture and fish farm activities. Furthermore, the presence of maintenance vessels contributes to this.

Potential Impact	Development Parameter	Requirements
	› Additionally, it is anticipated the GBF will require maintenance during the Project lifetime.	

18.4.5 Mitigation by Design

As part of the development of the Project, a number of embedded mitigation measures have been adopted in order to reduce likely effects to the receiving environment (i.e. mitigation by design). The embedded mitigation measures identified in Table 18-8 below are considered relevant to the assessment of likely effects of the Project on Other Sea Users. The commitment to securing these measures will be subject to the conditions of the Marine Licence (ML) application for the Project. The embedded mitigation measures described below have been assessed as part of the assessment of potential effects within the Other Sea Users chapter, therefore any additional secondary mitigation measures adopted following the assessment of likely effects will be adopted in addition to the measure described below.

Table 18-8 Mitigation measures and management plans

Mitigation measures and management plans	Justification
Dissemination of information (including a Notice to Mariners (NtM), Kingfisher notifications and navigational warnings)	Information on Project location and activities will be shared with key stakeholders prior to the commencement of any works through NtM, Kingfisher notifications and navigational warnings. Statutory and advisory safe clearance ranges to be implemented around Project vessels will also be advertised prior to the mobilisation of Project vessels. Ongoing consultation with key asset owners and recreational users of the marine environment (as identified through a Community Liaison Officer (CLO)) will be undertaken throughout the lifecycle of the Project, with advanced notice given of any potential obstruction or interference with existing operations and activities.
Crossing and proximity agreements	Crossing and proximity agreements with existing submarine cable operators and asset owners will be established prior to the commencement of any construction works. Ongoing consultation will be undertaken throughout the lifecycle of the Project with all relevant third parties.
Implementation and adherence to a Lighting and Marking Plan.	Vessel and infrastructure lighting and marking will be in place to facilitate any required Search and Rescue (SAR) operations (Appendix 5-9 Lighting and Marking Plan).
Charting of infrastructure	All installed infrastructures will be detailed on nautical and admiralty charts and within relevant publications. The requirements for charting of infrastructures will be agreed with Irish Lights, the Marine Survey Office and the Irish Aviation Authority.
Compliance with the National Maritime Oil & HNS Spill Contingency Plan (NMOSCP)	The NMOSCP includes a number of guidance documents and standard operating procedures and their appendices which address key elements of effective preparedness and response. NMOSCP establishes a national framework and strategy to coordinate marine pollution preparedness and response. It addresses all oil and HNS pollution whether it originates

Mitigation measures and management plans	Justification
	from ships, harbours, offshore units or oil/HNS handling facilities and land-based sources. All operations will be undertaken in compliance with the NMOSCP.

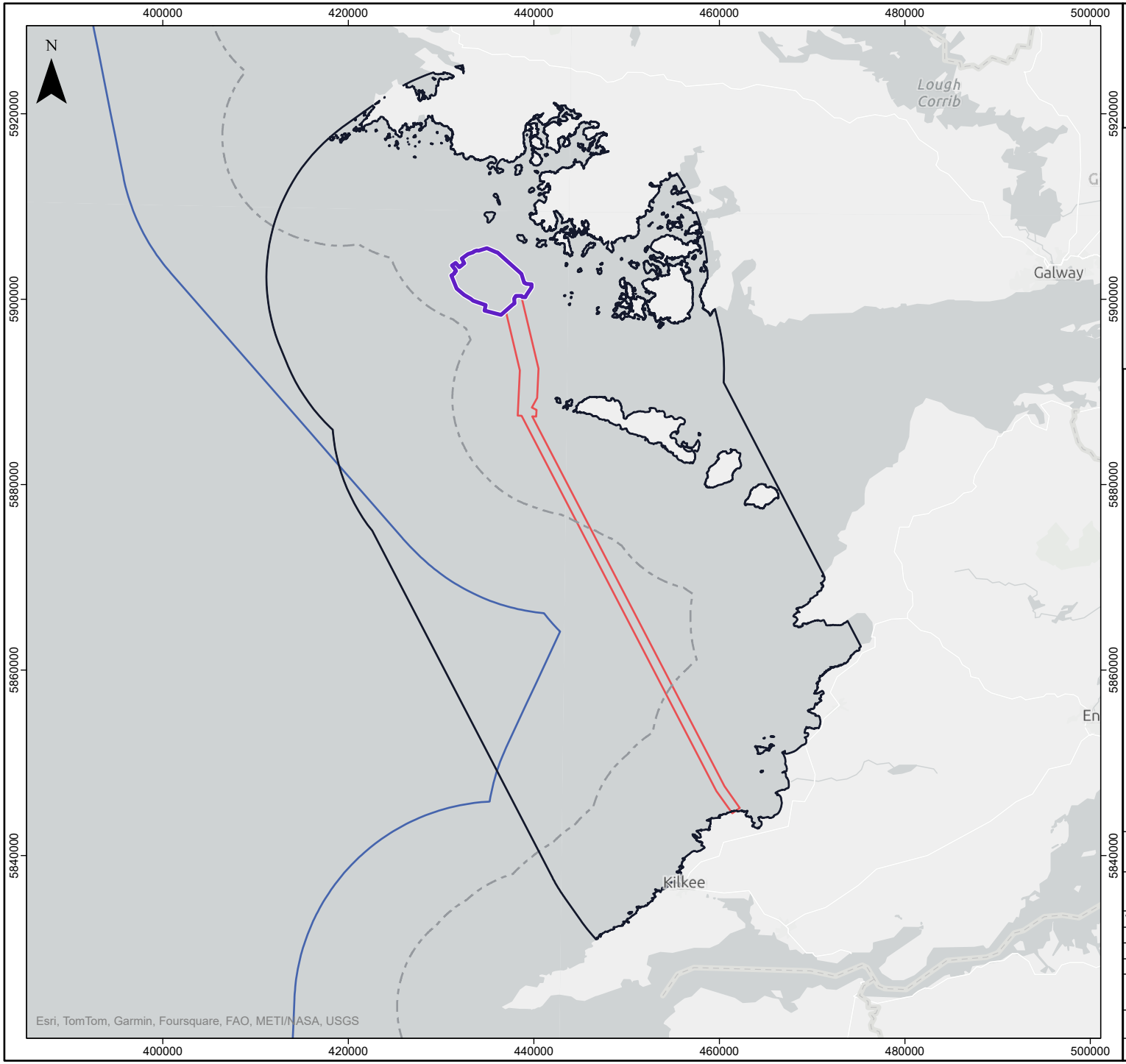
18.5 Baseline Characterisation

The baseline characterisation provides a description of the existing nature, extent and location of other sea user operations and activities in relation to the location of Project. The baseline characterisation is informed by publicly available data and information sources (Table 18-2) and outcomes from ongoing consultation with key stakeholders (Section 18.3). By describing existing baseline conditions, it is possible to identify activities and receptor groups which have the potential to be affected by works associated with the construction, operation and maintenance and decommissioning of the Project.

The baseline characterisation considers Other Sea Users within an identified study area. The study area is characterised by both the nature and extent of works associated with the construction, operation and maintenance and decommissioning phases of the Project and the mobile nature of Other Sea Users. Further details on the study area identified for the assessment of Other Sea Users as part of this EIAR is presented in Section 18.5.1 below.

18.5.1 Study Area

The Other Sea Users Study Area is defined as the OAA and OECC plus a 20 km buffer (Figure 1-1). It is considered that this study area will suitably encapsulate all the likely effects of the Offshore Site during the construction, operation and maintenance and decommissioning phases and the mobile nature of Other Sea Users. The Shannon estuary is considered as the likely temporary anchorage location for the GBS fixed bottom foundations.



SCEIRDE ROCKS WINDFARM

Feirm Ghaoithe Charraigeacha Sceirde

LEGEND

- Offshore Array Area
- Offshore Export Cable Corridor
- Study Area
- Ireland 6 NM limit
- Ireland 12 NM Limit

0 4 8 nm

0 7.5 15 km

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PROJECT TITLE

Sceirde Rocks

MAP TITLE

Other Users of the Marine Environment Study Area

VER	REMARKS	DATE	Drawn	Approved
1	DRAFT	06/12/2024	BQ	EE

DRAWING NO

Figure 18-1

SCALE	PAPER SIZE	DATUM	PROJECTION
1:600,000	A4	WGS 84	UTM 29N

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18.5.1.1 Site-specific Surveys and Studies

It is considered that the data and information available from the sources identified above (Table 18-2) is sufficient to characterise the existing environmental baseline for the assessment of Other Sea Users as part of this EIAR. Therefore, no site-specific surveys have been undertaken to inform this assessment. Where site-specific surveys undertaken for the Project (e.g., Marine Traffic Surveys; MTS) present information that can be used to characterise the existing baseline environment (e.g., recreational boating activity), the information on these surveys will be drawn on to inform the assessment of likely effects on Other Sea Users.

18.5.2 Baseline Description

18.5.2.1 Existing Baseline

18.5.2.1.1 *Aquaculture*

The aquaculture industry in Ireland has grown significantly since the 1980s, with approximately 37,837 tonnes of high value fish and shellfish produced in 2020 with an estimated value of €179.8 million (European Commission (EC), 2023a; EC, 2023b). In 2019, 99% of aquaculture production throughout Ireland was located within marine and brackish water environments along the Irish coastline (EC, 2023a). Under the National Strategic Plan for Sustainable Aquaculture Development (EC, 2023b), objectives for 2021 to 2027 highlight growth targets for increasing the quantity of salmon produced throughout Ireland from 20,000 tonnes to 26,000 tonnes.

There are a number of active finfish (mostly salmon) aquaculture facilities located along the coasts of Lettermullan, Lettermore and Carraroe on the south coast of County Galway. These sites will interact with the other marine users Study Area, however there is no direct overlap with the Project.

There are several oyster and mixed shellfish production sites along the coasts of County Galway, County Clare and the island of Inishmore. However, these activities are largely coastal or terrestrial, and do not directly interact with the Project Offshore Scoping Area or other marine users study area.

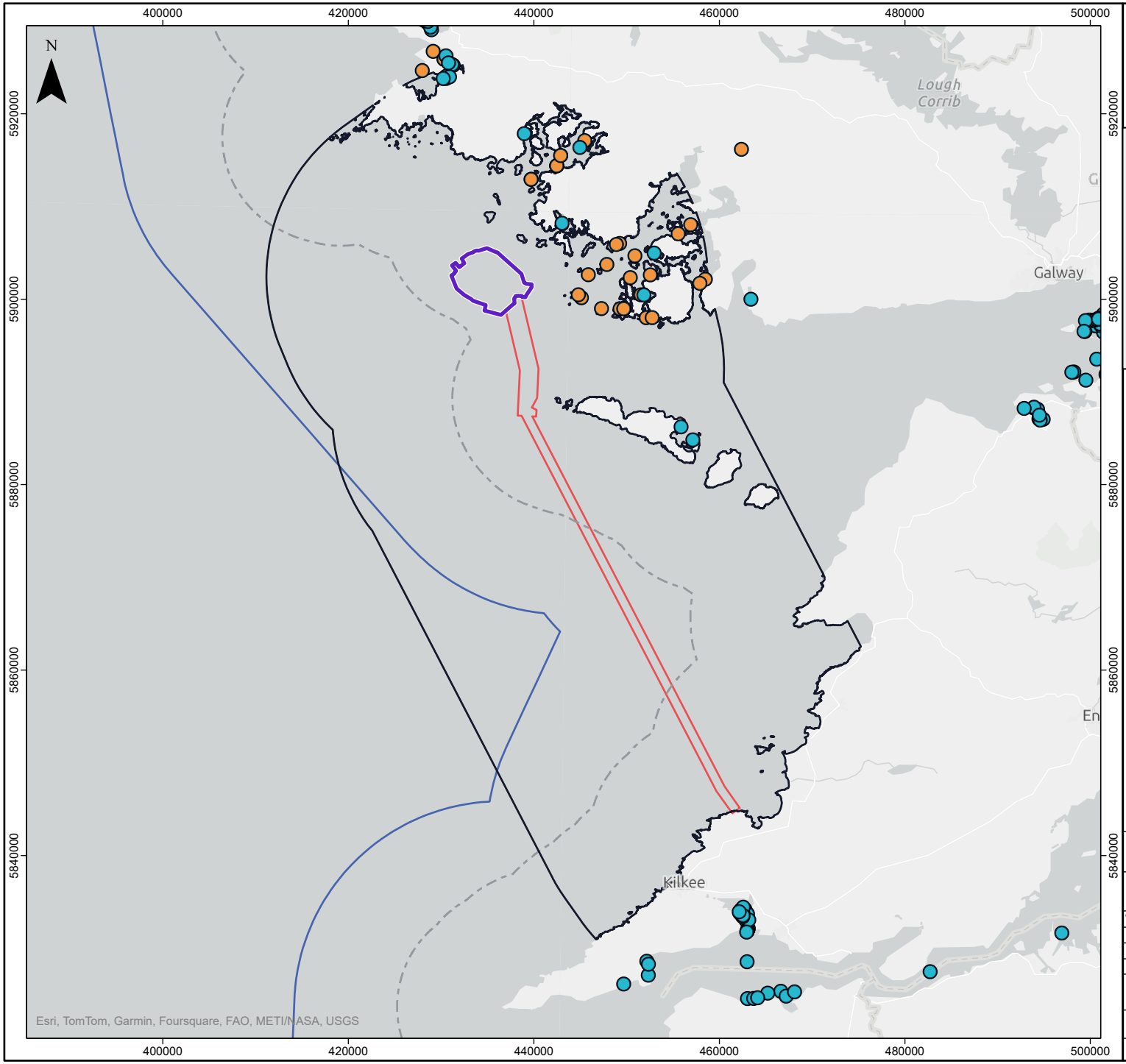
There are no aquaculture sites that directly interact with the OAA or OECC, however there are a number of active finfish (n = 23) and licenced shellfish (n = 11) production sites that are located within coastal waters encapsulated by the Other Sea Users Study Area with the closest 6.3 km away. These sites are summarised in Table 18-9 below and presented in (Figure 18-2).

Table 18-9 Aquaculture sites within the Other Sea Users Study Area

Site ID/Name	Status	Farm type	Approximate distance from the Offshore Site boundary (km)
Finfish Production			
IE_0825	Active	Salmon	6.3
IE_0613	Active	Salmon	6.8
IE_0612	Active	Salmon	7.2
IE_0684	Active	Other diversified farm (salmon, cod)	8.5

Site ID/Name	Status	Farm type	Approximate distance from the Offshore Site boundary (km)
IE_0614	Active	Salmon	9.3
IE_0809	Active	Salmon	9.3
IE_0808	Active	Salmon	10.7
IE_0339	Active	Salmon	11.1
IE_0682	Active	Other diversified farm (salmon, rainbow trout, cod)	11.2
IE_0162	Active	Salmon	11.2
IE_0195	Active	Salmon	11.5
IE_0336	Active	Salmon	11.6
IE_0556	Active	Salmon	12.3
IE_0681	Active	Other diversified farm (salmon, cod)	12.6
IE_0337	Active	Salmon	13
IE_0650	Active	Salmon	13.9
IE_0161	Active	Salmon	14.1
IE_0849	Active	Salmon	14.7
IE_1009	Active	Salmon	15.1
IE_0334	Active	Salmon	17.4
IE_0335	Active	Salmon	18.9
IE_0586	Active	Salmon	19.2
IE_0585	Active	Salmon	19.8
Shellfish Production			
IE_0774	Licenced	Oysters	8
IE_0415	Licenced	Oysters	12.9
IE_0726	Licenced	Oysters	13.3

Site ID/Name	Status	Farm type	Approximate distance from the Offshore Site boundary (km)
IE_0231	Licenced	Oysters	14.4
IE_0727	Licenced	Oysters	14.5
IE_0384	Licenced	Mixed (other) (abalones, winkles, conchs)	17.3
IE_0679	Licenced	Oysters	19
IE_0408	Licenced	Oysters	19.1
IE_1122	Licenced	Oysters	19.1
IE_0407	Licenced	Oysters	19.3
IE_0973	Licenced	Mixed (other) (abalones, winkles, conchs)	18.4



SCEIRDE ROCKS WINDFARM

Feirm Ghaoithe Charraigeacha Sceirde

LEGEND

- Offshore Array Area
- Offshore Export Cable Corridor
- Study Area
- Ireland 6 NM limit
- Ireland 12 NM Limit
- Shellfish Aquaculture Sites
- Finfish Aquaculture Sites

0 4 8 nm

0 7.5 15 km

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PROJECT TITLE

Sceirde Rocks

MAP TITLE

Aquaculture Sites

VER	REMARKS	DATE	Drawn	Approved
1	DRAFT	06/12/2024	BQ	EE

DRAWING NO

Figure 18-2

SCALE	PAPER SIZE	DATUM	PROJECTION
1:600,000	A4	WGS 84	UTM 29N

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18.5.2.1.2 Marine Dredge Disposal Sites

There are a total of 16 marine dredge disposal sites around the west coast of Ireland, with a further 15 sites within the Shannon Estuary (EMODnet, 2023). There are no active or disused marine dredge disposal sites that directly interact with the Other Sea Users Study Area. The closest marine dredge disposal sites to the Offshore Site are the Ros a Mhil (Irl 50) and Kilronan (Irl 54) active dredge spoil dumping sites located approximately 22 km to the east of the OECC (EMODnet, 2023) (Figure 18-3).

Within the Shannon Estuary (beyond the Other Sea Users Study Area) all 15 marine dredge disposal sites are located within the inner Shannon Estuary (EMODnet, 2023). These sites are:

- Kilrush (Irl 29);
- Moneypoint 1 (Irl 40);
- Moneypoint 2 (Irl 44);
- Tarbert 2 (Irl 39);
- Tarbert 1 (Irl 15);
- Foynes 2 (Irl 33);
- Foynes 1 (Irl 5);
- IR64;
- IR63;
- Aughinish (Irl 32);
- Foynes 3 (Irl 53);
- Limerick 3 (Irl 45);
- Limerick 2 (Irl 31);
- Limerick 1 (Irl 22); and
- Limerick Approaches – plough dredging (Irl 60).

No disposal site within the Shannon estuary has a dumping at sea permit beyond 2026, so there will be no temporal overlap with the construction phase of the Project, although it is reasonably foreseeable that future permits will be obtained to maintain safe navigation within the Shannon estuary.

18.5.2.1.3 Renewable Energy Developments

The Irish marine environment has a significant resource for offshore renewable energy generation. The Future Framework for Offshore Renewable Energy outlines Ireland's long-term ambitions of 20 GW of renewable energy by 2040 and 37 Gigawatts (GW) by 2050 (DECC, 2024). The development of Ireland's offshore wind capabilities, in support of the NMPF objective of 5GW installed offshore wind generation by 2030, with the exception of the Project, is largely focused on the south and east coasts (DECC, 2024). However, as outlined in the Future Framework policy statement, the DECC has adopted an action to assess the potential for accelerating the development of offshore renewable energies on the west coast of Ireland, with a particular focus on exploring the floating offshore renewable capabilities within a West Coast Designated Maritime Area Plan (DMAP) (DECC, 2024). Government has decided that all future Offshore Renewable Energy developments will have to be located within a DMAP. There has been no information published to date on any potential west coast DMAP and therefore there is no available information to inform consideration of other potential projects in the future.

18.5.2.1.4 Submarine Cables and Pipelines

The OECC directly overlaps with the IRIS submarine cable (privately owned and operated by Farice). The IRIS cable system, which is approximately 1,700 km in length, connects southwest Iceland to Ballyloughane Strand in Galway and was ready for service in March 2023 (Submarine Cable Networks, 2023).

There are no other known active or disused submarine cables and pipelines that directly interact with the Other Sea Users Study Area (Figure 18-3).

18.5.2.1.5 Oil and Gas

The marine environment off the west coast of the Republic of Ireland is not extensively utilised for oil and gas exploration. While the Other Sea Users Study Area extends across a number of oil and gas licence blocks (28/19, 28/24, 28/25, 28/29, 28/30, 37/5, 38/1, 38/2, 38/6 and 38/7, Department of the Environment, Climate and Communications, 2007), given the proximity of the Offshore Site to the coastline, there are no active oil and gas licences within the Other Sea Users Study Area. The closest active lease for oil and gas exploration is the EL4/06 exploration area operated by Island Oil & Gas, located approximately 71 km to the west of the Other Sea Users Study Area (EMODnet, 2023).

There are no oil and gas exploration wells within the Other Sea Users Study Area. The Pentagone 84 well, located approximately 97 km to the west of the Other Sea Users Study Area at its nearest point, is the closest exploration well (EMODnet, 2023). Furthermore, there are no active boreholes along the west coast of Ireland, with 43 of the 50 boreholes identified abandoned and the remaining 7 have suspended operations (EMODnet, 2023).

There are no oil and gas pipelines that directly interact with the Other Sea Users Study Area.

The development of all petroleum (oil and gas) operations within Ireland falls under the Petroleum and Other Minerals Development Act (1960). In 2019, the Programme for Government contained a commitment to end the issue of new oil and gas licences within Irish waters with immediate effect (DECC, 2023). While any oil and gas exploration licences awarded before the 2019 prohibition on new oil exploration will be upheld, no subsequent awards will be issued (DECC, 2023). Therefore, as there are no oil and gas exploration licences awarded for blocks 29/25, 25/26, 29/27, 29/30, 29/31, 29/32, 38/01, 38/02, 33/03, 33/10,38/11, 33/12 and 33/16, and no likelihood for future awards to be issued, oil and gas exploration within the Other Sea Users Study Area will not be undertaken throughout the lifecycle of the Project.

18.5.2.1.6 Military Activities

There are no military activities (including exercise areas) that directly interact with Other Sea Users Study Area.

18.5.2.1.7 Marine Recreational Users

There is evidence of recreational boating within the nearshore waters of County Galway and County Clare which will directly interact with the Other Sea Users Study Area, however recreational sailing density is generally low, with 2019 recreational sailing density throughout the OAA and OECC between 0 and 0.4 hr/km^2/month (EMODnet, 2023) (Figure 18-4). Recreational sailing activity is largely associated with the Galway marina, Rossaveel marina and anchorages off the coast of the Aran Islands (Marine Institute, 2023), where 2019 maximum recreational sailing density at these locations was 555 hr/km^2/month. Galway Bay supports the local Féile an tSrutháin sailing festival organised by the Galway Hookers Association. The regatta showcases unique Irish boats throughout Galway Bay, along the coast of Connemara and North Clare (Galway Tourism, 2023). The Sceirde Rocks Wind Farm has established a partnership with the Galway Hookers Association, supporting the running of the organisation and the local festivals.

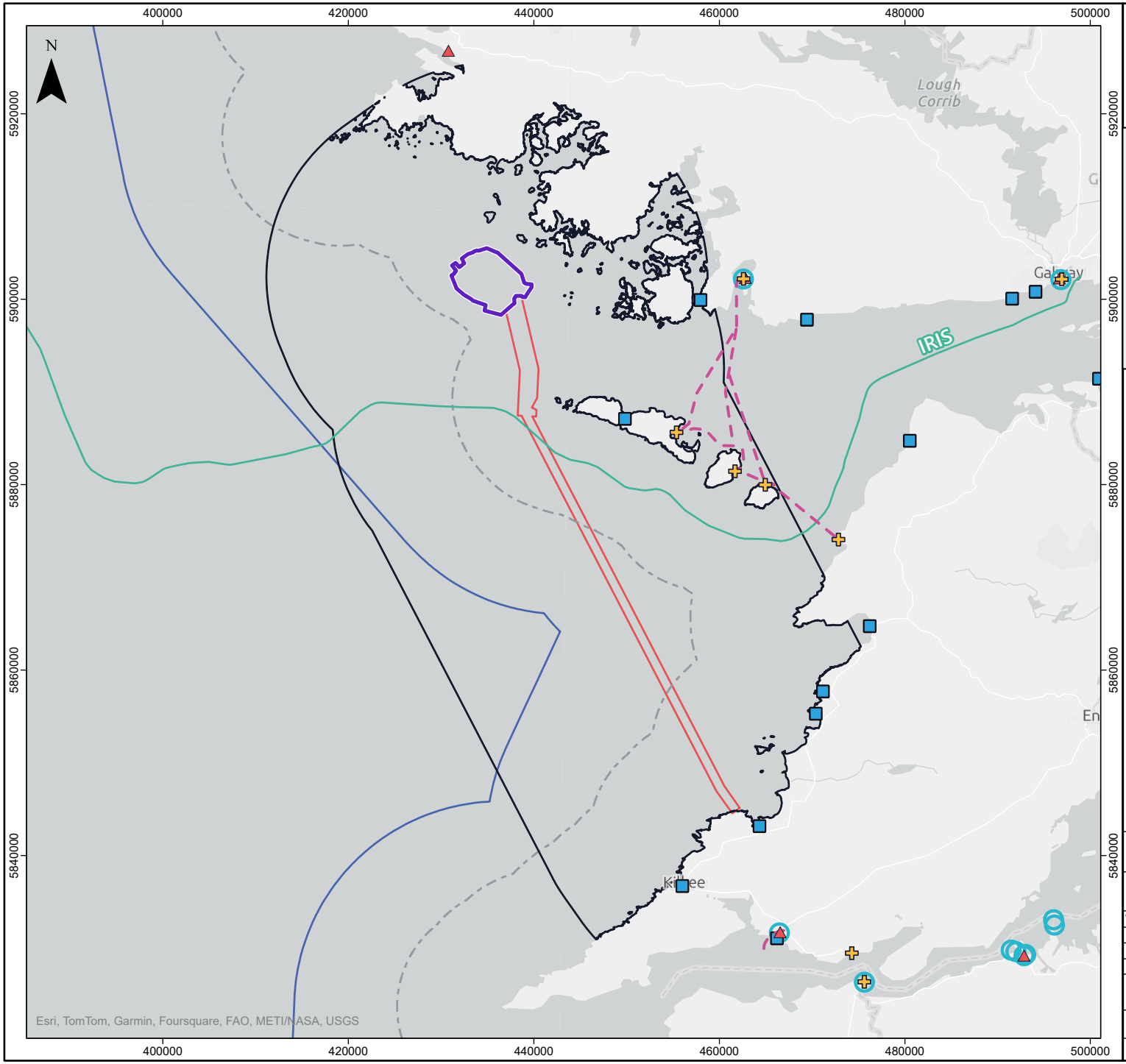
The Blue Flag award for beaches, marinas and boats promotes environmental education, sustainable tourism, environmental management and safety for all beach users (Blue Flag, 2023). There are eleven blue flag beaches along the coastlines of County Galway and County Clare, six of which will directly interact with the Other Sea Users Study Area (EMODnet, 2023; Marine Institute, 2023), these sites are: Cill Mhuirbhigh (located on the island of Inis Mór), Lahinch, White Strand Miltown Malbay, Spanish Point, Whitestrand Doonbeg and Kilkee (Marine Institute, 2023). These sites and any associated recreational swimming will be largely coastal. The closest blue flag beach to the Offshore Site is the Whitestrand, Doonbeg beach located over 1 km to the east of the proposed landfall (EMODnet, 2023).

There are four passenger ferry routes within the Other Sea Users Study Area connecting the Aran Islands with County Galway and County Clare, these routes are: Rossaveel-Inis Mór, Rossaveel-Inis Meáin, Rossaveel-Inis Oírr and Doolin-Inis Oírr, Inis Meáin and Inis Mór (Marine Institute, 2023). These ferry routes are used for recreational, sight-seeing trips and to connect the residents of the Aran Islands to mainland Ireland. These ferry routes are operational throughout the year and operate between one and two ferries per route. The potential impacts of works associated with the construction, operation and maintenance and decommissioning phases of the Project on shipping and navigation (including potential impacts to ferry operations) will be considered further within Chapter 14: Shipping and Navigation. During normal operations, none of the identified ferry routes directly cross the Offshore Site. Potential impacts to ferry operations have not been considered further within the Other Sea Users assessment.

The Port of Galway also regularly hosts (or acts as the home port for) several research vessels operating around Ireland. These vessels include the RV *Celtic Explorer* and RV *Tom Crean*, operated by the Marine Institute, and RV *Keary* and RV *Geo* operated by Geological Survey Ireland. These vessels regularly transit to/from Galway during their surveys, although as they cover the wider Irish marine area, their maritime operations are not constrained to the vicinity of Galway.

There are seven snorkelling and scuba diving sites within the Other Sea Users Study Area, all of which are located along the coast of County Clare. These sites are Dooling Point, Illaunabaha, George's Head, Myles Creek, Newfee, H.M.S Martin Wreck and Bishop's Island (Zentacle, 2023). Recreational snorkelling and diving associated with these sites is largely focused on maritime wrecks and geological features within coastal waters. There are no snorkelling and scuba diving sites that directly interact with the OAA and OECC.

There are three surf schools located along the coast of County Clare, however none of these sites directly interact with the Other Sea Users Study Area (Google Maps, 2023).



SCEIRDE ROCKS WINDFARM

Feirm Ghaoithe Charraigeacha Sceirde

LEGEND

- Offshore Array Area
- Offshore Export Cable Corridor
- Study Area
- Ireland 6 NM limit
- Ireland 12 NM Limit
- Submarine Cables
- Ferry Routes
- Ports
- Marinas
- Dredging Locations
- Blue Flag Beaches

0 4 8 nm

0 7.5 15 km

Data Source: Contains public sector information, licensed under the Creative Commons licence v4.0; the Open Government Licence v3.0. Ireland's Marine Atlas at http://atlas.marine.ie/

PROJECT TITLE

Sceirde Rocks

MAP TITLE

Other Sea Users

VER	REMARKS	DATE	Drawn	Approved
1	DRAFT	06/12/2024	BQ	EE

DRAWING NO

Figure 18-3

SCALE	PAPER SIZE	DATUM	PROJECTION
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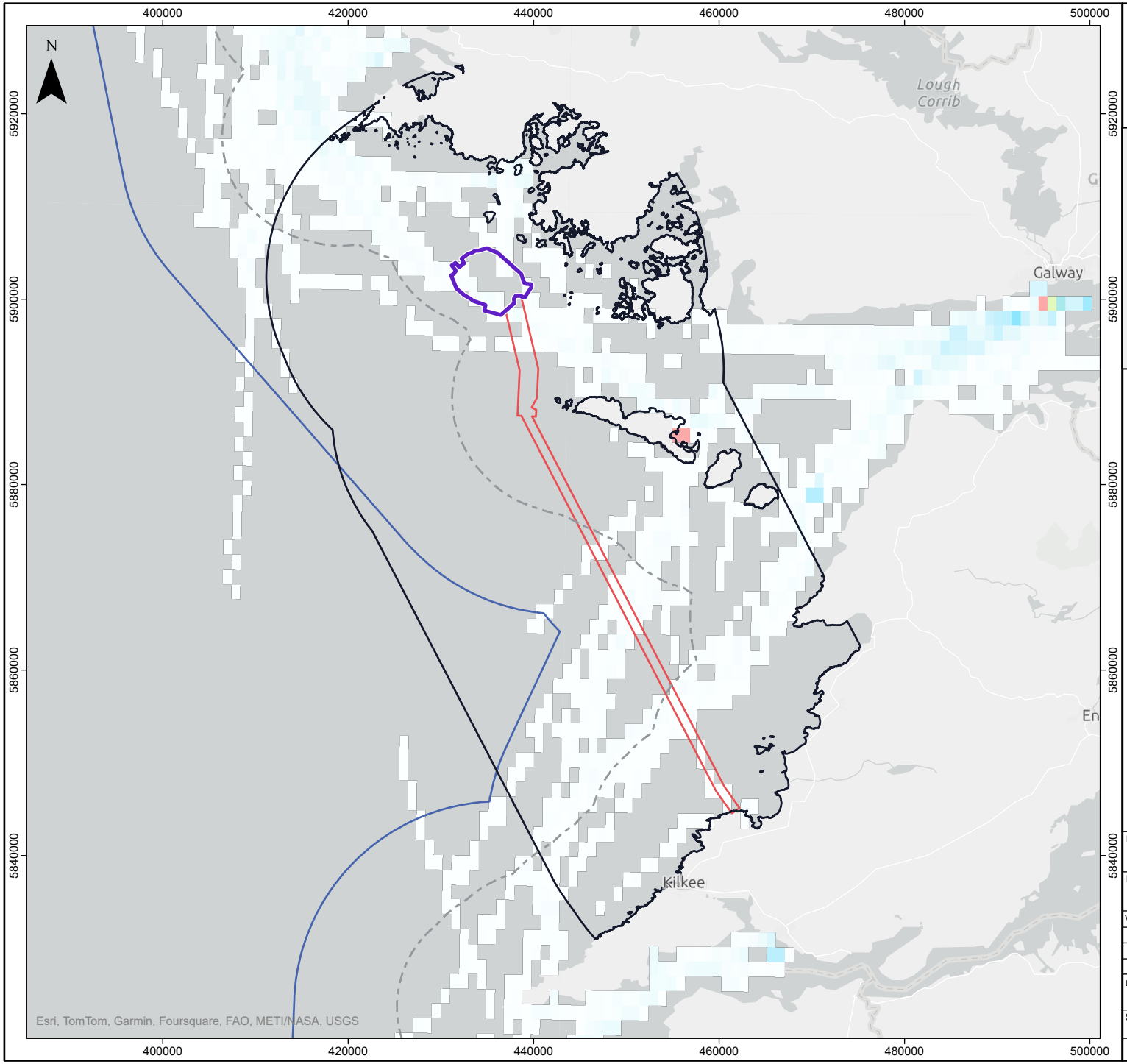

SCEIRDE ROCKS WINDFARM

Feirm Ghaoithe Charraigeacha Sceirde

LEGEND

- Offshore Array Area
- Offshore Export Cable Corridor
- Study Area
- Ireland 6 NM limit
- Ireland 12 NM Limit

2019 Recreational Sailing Density (hr/km^2/ month)

- High Density: 555
- Low Density: 0

0 4 8 nm

0 7.5 15 km

Data Source: Contains public sector information, licensed under the Creative Commons licence v4.0; the Open Government Licence v3.0. Ireland's Marine Atlas at http://atlas.marine.ie/

PROJECT TITLE

Sceirde Rocks

MAP TITLE

Recreational Sailing Vessel Activity

VER	REMARKS	DATE	Drawn	Approved
1	DRAFT	06/12/2024	BQ	EE

DRAWING NO

Figure 18-4

SCALE	PAPER SIZE	DATUM	PROJECTION
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18.5.3 Baseline Summary

The primary industries which will directly interact with the Other Sea Users Study Area are aquaculture sites, the IRIS submarine cable, marine recreational users including recreational boating activities, blue flag beach users and snorkelling and scuba diving schools and research vessels.

The Other Sea Users Study Area does not directly interact with any oil and gas operations or marine dredge disposal sites. Additionally, there are no military activities that directly interact with the Other Sea Users Study Area.

18.6 Likely Significant Effects and Associated Mitigation Measures

18.6.1 Do Nothing Scenario

The 'do nothing' scenario is a consideration of the baseline if the Project was not developed. This section therefore predicts the future baseline scenario for the Other Sea Users study area in the absence of the Project.

It is considered unlikely that the future baseline scenario will change significantly from that described within Section 18.5.2.1, however it is acknowledged that the future baseline for Other Sea Users is subjected to gradual change as new applications are submitted for other developments and activities within the marine environment. As detailed in the Future Framework for Offshore Renewable Energy, the west coast of Ireland has been identified as a key region for the development of floating offshore renewable wind projects to support Ireland's 2040 and 2050 long-term renewable energy ambitions. Furthermore, marine recreation and tourism activities within the marine environment are highly seasonal and influenced by external factors such as weather and tidal conditions. As such there is the potential for marine recreation and tourism activities to vary from trends described within the existing baseline in response to these seasonal variations.

18.6.2 Construction Phase

18.6.2.1 Obstruction to offshore renewable energy developments

18.6.2.1.1 *Description of Effect*

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to offshore renewable energy developments as a result of the physical presence of Project vessels and associated advisory safe clearance ranges. Additionally, construction works could result in damage to renewable infrastructure. This assessment of likely significant effects to offshore renewable energy developments considers any loss of access to an offshore renewable energy development site, or the restriction of operations associated with the site and any potential damage to infrastructure.

18.6.2.1.2 *Characterisation of unmitigated effect*

Ireland has one of the best offshore renewable energy potentials in the world, with the total sea area (900,000 km^2) approximately 10 times the total landmass (DECC, 2021). Ireland's Offshore Renewable Energy Development Plan (OREDP), first published in 2014 and issued for interim review in 2018, provides a framework for the sustainable development of offshore renewable energy resources in

Ireland (as detailed in Chapter 2: Background and Policy). OREDP identifies the need to develop Ireland's wave and tidal energy capacity in line with the commitment to realise "*the long-term economic potential of Ireland's wave and tidal resources*" (Department of Communications, Energy and Natural Resources, 2014). The existing development of offshore renewable energies is primarily focused on the east and south coasts. The development of offshore renewable energies is considered to be of national importance, with the Future Framework for Offshore Renewable Energy citing the west coast of Ireland as a key area for the future development of floating offshore wind technologies.

As detailed in section 18.5.2.1.3 there are currently no active offshore renewable energy developments within the Other Sea Users Study Area. At the time of writing this EIA, there is no information on any potential DMAP for the west coast and, accordingly, no information on the potential future location of offshore renewable energy development in the wider area. Therefore, offshore renewable energy developments are considered to have a **negligible sensitivity** to impacts during the construction phase.

Given that there are no existing offshore renewable energy developments within the Other Sea Users Study area, the highly localised nature and short-term duration of construction activities are not considered to result in obstruction or damage to offshore renewable energy developments. The magnitude of impact is considered to be **negligible**.

18.6.2.1.3 Assessment of significance prior to mitigation

Prior to mitigation, as there are no existing offshore renewable energy developments within the Other Sea Users Study Area and there are no other developments proposed within the timeline of Project construction activities, any effects from obstruction or damage to offshore renewable energy developments are assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.2.1.4 Mitigation

No mitigation measures are proposed.

18.6.2.1.5 Residual Effects

The effect remains an imperceptible, neutral effect which is Not Significant.

18.6.2.2 Obstruction to cable installations

18.6.2.2.1 Description of effect

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to cable installations as a result of the physical presence of Project vessels and associated advisory safe clearance ranges. Additionally, construction works could result in damage to cable infrastructure from seabed preparatory works or cable installation works.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to an offshore cable or the restriction of cable operations.

18.6.2.2.2 Characterisation of unmitigated effect

The global market for submarine cables is expanding in line with increased demand of efficient, high speed electricity systems. The latest market research on the demand for global Submarine Cable Market share was valued at approximately United States Dollar (USD) 25 billion in 2021, with annual growth between 2022 and 2023 forecast at around 10% (with an expected value of USD 35 Billion by 2030) (Custom Market Insights, 2023). The rapid and ongoing growth of Ireland's economy has been

facilitated through improved connectivity with Europe and North America through the development of the country's subsea cable infrastructure (Data Centre, 2021). The Other Sea Users Study Area directly interacts with one existing electricity cable asset: the IRIS submarine cable owned (owned by Farice) which became fully operational since March 2023. The IRIS submarine cable connects between Iceland and Ballyloughane Strand in Galway (Submarine Cable Networks, 2023), as such it is considered to be of both national and international importance, and therefore considered to be of **high sensitivity**.

The IRIS submarine cable directly overlaps the OECC for the Project (see Figure 18-3). As such, works within the OECC such as the OEC installation and seabed preparatory works have the potential to directly impact the IRIS submarine cable at a single location. Additionally, as the IRIS submarine cable is operational, construction vessels utilising advisory safe clearance ranges (500 m) both within the OECC and transiting to the OAA have the potential to disrupt any operation and maintenance vessels associated with the IRIS submarine cable.

Works associated with the construction of the OECC will take place over a local scale (within the OECC boundaries), short-term duration and at a low intensity. Additionally, the infrequency of the IRIS maintenance works represents a low risk to obstruction of operations. The significance of the likely interaction between construction activities and any operation and maintenance works associated with the IRIS submarine cable, the magnitude of the effect is therefore considered to be **low**. The potential for damage to the IRIS cable from the Project is also very **low** due to the design of the Project which has been aligned to ensure an optimum crossing design between the projects to safeguard both cables.

18.6.2.2.3 Assessment of significance prior to mitigation

Based on the information provided above, prior to mitigation, any effects on Other Sea Users resulting from obstruction to cable installations is assessed as a **slight negative effect** which is Not Significant.

18.6.2.2.4 Mitigation

Mitigation by design (avoidance/ prevention)

- Embedded mitigation measures for the Offshore Site (outlined in full in section 18.4.5) will include the development of a Cable Plan, which will include a cable crossing methodology, including the need for any cable protection measures. Any crossing and /or proximity agreements will be agreed between the Applicant and Farice to ensure no damage or detrimental interference occurs to this asset or the Project OEC(s). The cable route has been designed so that the crossing will be perpendicular to reduce overlap in so far as possible.

Mitigation by consultation

- The Applicant will consult Farice to provide details on the nature and extent of pre-construction (e.g., survey) and construction activities associated with the Offshore Site, including the type of vessels required and their location and period of activity within the marine environment the distribution of Notices to Mariners and the dissemination of information to Farice in advance of any construction works.

18.6.2.2.5 Residual effects following mitigation

Due to the short-term nature of the works and with consideration given to the embedded mitigation measures identified in section 18.6.2.2.4, significant effects associated with the temporary obstruction to IRIS cable maintenance vessels are not anticipated during the construction of the Offshore Site. Additionally, due to crossing agreements expected to be agreed between both parties it is highly

unlikely that any damage to the IRIS cable will occur. Therefore, the residual effect is considered to be a likely, short-term, **not significant negative effect** which is Not Significant.

18.6.2.3 Obstruction to Marine Recreational Users

18.6.2.3.1 *Description of effect*

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to marine recreational users as a result of the physical presence of Project vessels and associated advisory safe clearance ranges.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to a marine recreational site, or the restriction of marine recreational activities or operations.

18.6.2.3.2 *Characterisation of unmitigated effect*

The Other Sea Users Study Area directly interacts with a number of marine recreational users and activities, including recreational boating, blue flag beaches (n=6) and snorkelling and scuba diving sites (n=7) (as described in section 18.5.2.1.7). A report published in 2018 exploring the ecosystem service and benefits offered by Ireland's marine environment concluded that recreational services provided by Ireland's marine environment contributed an economic value of €1.7 billion (Norton *et al.*, 2018). Marine recreation is considered to be of regional and national importance, and therefore considered to be of **high sensitivity**.

The physical presence of construction vessels and the implementation of associated advisory safe clearance ranges have the potential to restrict access to marine environment utilised by marine recreational users. Marine recreational activity is generally located within nearshore waters, with activities associated with the blue flag beaches and snorkelling and scuba diving tied to coastal waters and marine archaeological assets (wrecks) located along the coast. The Whitestrand, Doonbeg blue flag beach is located 1.5 km from where the OEC will make landfall between Doonbeg and Pulleen (Figure 18-3). Recreational sailing throughout the Other Sea Users Study Area is generally low, with 2019 recreational sailing density throughout the OAA and OECC between 0 and 0.4 hr/km^2/month (EMODnet, 2023) (Figure 18-4). Given the coastal nature of the recreational users identified, it is considered that works associated with the construction of the OECC have the greatest potential to result in an impact to marine recreational users.

Although a number of recreational users are identified within the coastal areas, the area of obstruction from Project vessels and associated advisory safe clearance ranges operating within the OECC will be highly localised in comparison to the total marine area available to be utilised by recreational users, with any obstructions within the OECC short-term in nature. The construction phase establishes the need for up to 23 construction vessels, each with a 500 m advisory safe clearance range. Construction works are anticipated to take place over a local scale, short-term duration and low intensity. Given the localised nature of works within the coastal waters for the Offshore Site, the magnitude of the impact is considered to be **low.**

18.6.2.3.3 *Assessment of significance prior to mitigation*

Based on the information provided above, prior to mitigation, any effects on Other Sea Users resulting from obstruction to marine recreational users is assessed as a **slight negative effec**t which is Not Significant.

18.6.2.3.4 *Mitigation*

Mitigation by consultation

- Where there is the potential for disruption to marine recreational activities, embedded mitigation measures will be adopted, including the dissemination of information to all marine recreational users in advance of any construction activities.
- Throughout the construction phase of the Project, ongoing engagement will be undertaken with key stakeholders (including scuba diving and snorkelling centres, Blue Flag beach operators and local ports and marina) to ensure that any activities associated with the construction of the Offshore Site, including the type of construction vessels required, their location within the marine environment and their period of activity, is clearly conveyed prior to the commencement of any construction activities.

18.6.2.3.5 *Residual Effects*

Due to the short-term nature of the works and with consideration given to the embedded mitigation measures identified in section 18.6.2.2.4, significant effects associated with the obstruction to marine recreational users are not anticipated at this geographical scale during the construction of the Offshore Site. Therefore, the residual effect is a likely, short-term, **not significant negative effect** which is Not Significant.

18.6.2.4 Potential effects to aquaculture operations

18.6.2.4.1 *Obstruction to aquaculture operations*

Description of effect

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to aquaculture operations as a result of the physical presence of Project vessels and associated advisory safe clearance ranges.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to aquaculture operations, or the restriction of aquaculture operations.

Characterisation of unmitigated effect

There are a number of aquaculture sites within the Other Sea Users Study Area, the closest distance between these sites and the OAA and OECC is approximately 6.3 km from the nearest Project area. Due to the intervening distance, advisory safe clearance ranges of 500 m around the Project vessels are highly unlikely to result in effects to the operations of aquaculture sites, owing to the highly localised and short-term nature of the impacts. As such, the magnitude of impact is considered to be **negligible.** Aquaculture sites host a range of different species with varying sensitivity. As a worst-case some species such as shellfish species are deemed to be of medium vulnerability, high recoverability and of high value and as there are aquaculture farms of the finfish and shellfish receptors is the sensitivity is therefore considered to be **medium**.

Assessment of significance prior to mitigation

Prior to mitigation, due to the distance of the Offshore Site from aquaculture sites, effects from obstruction to aquaculture operations as a result of physical presence of Project vessels and associated advisory safe clearance ranges are unlikely to result in any adverse effects due to the highly localised and short-term nature of the impact, therefore the effect is assessed as a **not significant, neutral effect** which is Not Significant.

Mitigation

Where there is the potential for disruption to aquaculture operations, mitigation measures will be adopted, including the dissemination of information to aquaculture operators in advance of any construction activities.

Throughout the construction phase of the Project, ongoing engagement will be undertaken with key stakeholders to ensure that any activities associated with the construction of the Offshore Site, including the type of construction vessels required, their location within the marine environment and their period of activity, is clearly conveyed prior to the commencement of any construction activities.

Residual Effects

The effect remains a **Not Significant, neutral effect** which is Not Significant.

18.6.2.4.2 *Potential effects on aquaculture sites relating to changes in water quality*

Description of effect

As stated in Chapter 7: Marine Physical and Coastal Processes and Chapter 8: Water and Sediment Quality a number of different aspects of the Offshore Site have the potential to have an effect on SSC. This effect relates to short-term and localised increases in SSC associated with seabed disturbance during the construction and decommissioning activities. The use of dredging, CFE or jet trenching during seabed preparation (OAA only) and cable trench installation will generate some of the greatest disturbance to the seabed.

The SSC associated with dredging CFE and jet trenching is considered to be substantially greater than that caused by the installation of hard substrate, i.e., stonebed installation for WTIV or cable protection. Dredge disposal of materials by trailing suction hopper dredger (THSD) and CFE for seabed clearance is considered for assessment here with regards to the potential effects off SSC from proposed activities on aquaculture/fish farm sites. As the surveyed parameters for dredging and CFE are likely to generate the maximum effect compared to other proposed installation methods named above the assessment focuses on these activities.

An increase in SSC may under certain conditions have adverse effects on water quality and dissolved oxygen (DO) properties by reducing light penetration into the water column and by physical disturbance to the water column properties, which can then indirectly affect species hosted at aquaculture sites which are sensitive to changes in water quality. Contamination in the water column or on the seabed also has the potential to affect these species. trenchless landfall installation could result in release of drilling muds into the marine environment at the OECC.

The accidental release of pollutants within the construction period is limited to accidental release of pollutants from construction vessels. The potential for vessels to accidentally pollute the marine environment surrounding the Offshore Site is extremely unlikely due to the strict regulations placed on vessels in operation.

In total there are 34 aquaculture/finfish sites with the OSU Study Area, the nearest of which is located 6.3 km from the OAA.

Potential indirect effects from water quality issues on other ecological receptors are assessed within the relevant receptor chapters of this EIAR.

Characterisation of unmitigated effect

The specific parameters and calculations for SSC contaminants and vessel pollution are covered in detail in Chapter 7: Marine Physical and Coastal Processes and Chapter 8: Water and Sediment Quality. The potential for sediments to be disturbed and develop into a plume in the water column is dependent on the sediment properties across the OAA and OECC and the activities. The relevant activities during the construction period which could result in increased SSC and release of contaminants include:

- Pre-construction seabed levelling and clearance in the OAA only;
- Cable installation via trenching using a CFE, and dredging in the OAA;
- Disposal of dredged material in the OAA; and

- Trenchless landfall installation within the OECC.

Increased SSC due to dredge and disposal activities, CFE and trenchless landfall

There is the potential for a suspended sediment plume to development from active dredging associated with cable trenching as the drag head moves along the seabed. The instantaneous increase in SSC from the drag head which could result in a plume would only occur in the immediate vicinity of disturbance activity, although much finer and reduced sediment concentrations could advect as a plume over distances up to 4k in these respective areas the OAA and 3 km in the OECC. This is based on the sediment content and current speeds in these areas.

Up to 15 disposal events of the dredged material are expected in two locations within the OAA, with plumes occurring from each disposal event which will be at least 10 km from the nearest aquaculture site. No dredge material is to be released from the sea surface; instead, material will be released via a fallpipe. Based on the fall pipe release height at 5 m above the seabed, the fine sediment could remain in suspension for nearly 14-hours before settling back to the seabed (i.e. just over a flood – ebb tidal cycle, reaching the maximum tidal excursion extent (estimated to be up to 15 km) on either the flood or ebb tidal cycle), depending at the time of release, although at the limits of this range any SSC would not be discernible from background SSC concentrations. On the basis of the regional flow orientation, which is approximately northwest – southwest, the excursion extent and associated sediment movement within and immediately around the two disposal locations would be mostly along the flow alignment, meaning that there would be little or no plume in the vicinity of aquaculture sites situated on the Co. Galway coast.

Cable route preparation using CFE can cause a significant increase in SSC near the disturbance site, reaching hundreds of thousands of mg/l in the vicinity of the activity. However, this high SSC quickly decreases with distance. The targeted nature of cable installation means sediment releases occur close to the seabed, whereby most sediment remains within the trench. Fine sediments released 1 metre above the seabed can stay suspended for up to 3 hours and could travel a distance of up to 4 km (see Chapter 7: Marine Physical and Coastal Processes for more detail). At these extents the plumes will not be discernible from background SSC concentrations. SSC levels return to normal within one tidal cycle.

Trenchless techniques will be used to install an export cable from onshore to an offshore exit within the OECC, about 1 km offshore. The exit pit will have an area of 0.001 km^2 and a volume of 2000 m^3, with excavated material stored as a sediment berm. The increase in SSC from this excavation is expected to be similar or less than that from cable trenching activities, and there are no aquaculture sites within 4 km of the Landfall.

Drilling fluid (up to 200 m^3), which will comprise mostly of water with 10% bentonite clay, may be released at the trenchless landfall exit point. With a near-bed release height of 0.5 m, the deposition thickness could be up to 0.05 m, likely occurring within the exit pit without forming a plume.

Release of contaminated sediment

During construction and decommissioning, Project activities on the seabed such as seabed clearance, trenching and disposal activities have the potential to disturb and release seabed sediments.

Should sediments be contaminated, this contamination could spread and result in an adverse effect from pollution of the water column through leaching or dispersal to seabed sediment further afield. Contamination in the water column or on the seabed can then in-directly result in toxicology impacts on marine ecological species within aquaculture/finfish farms which are sensitive to water and sediment quality (See Chapter 8: Water and Sediment Quality). Additionally, trenchless landfall installation could result in fluid frack of drilling muds into the marine environment at the OECC. It should also be noted that whilst dredge disposal could result in dispersal of contaminated sediment, this activity is subject to a separate Dumping at Sea permit which is to be sought for the Offshore Site construction works.

The potential for chemical contaminants to be present within seabed sediment and the water column across the OAA and OECC was investigated through a site-specific sampling programme (detailed in Chapter 8: Water and Sediment Quality). The completed site-specific sediment sampling analysis identified very low levels of contamination within the samples obtained across the OAA and OECC. Overall, it was found that only low occurrences of the contaminants analysed were present, with the majority of contaminants being below the recommended guidelines (See Chapter 8: Water and Sediment Quality for more details). As a result of the site-specific contaminant analyses, there is considered to be a low or very low likelihood for contaminants across the Offshore Site.

Additionally, as mentioned above trenchless landfall installation will utilise drilling muds to lubricate the drill bit whilst drilling of the borehole occurs. The drilling fluid (up to 200 m^3), which will comprise 90% water with 10% bentonite clay, which is a Pose Little or No Risk (PLONOR) chemical. It is most likely that any coarser sedimentation would occur directly within the exit pit and a plume would not form due to the relative low intensity of drilling operations for this activity, with finer sediments being diluted rapidly due to the energetic nature of the marine environment near the Landfall of the OECC.

Vessel Pollution

The accidental release of pollutants within the construction period is limited to accidental release of pollutants from construction vessels. The potential for vessels to accidentally pollute the marine environment surrounding the Offshore Site is extremely unlikely due to the strict regulations placed on vessels in operation. Additionally, Project vessels are prohibited from discharging waste water within 3 nm of the coast. Nonetheless, the impact of an unmitigated effect could cause direct adverse, non-reversable and long-lasting effects to the water column and/or seabed sediments depending on the type of pollution which is released. This effect could also result in in-direct effects to marine habitats and species within aquaculture/finfish farms which are sensitive to pollution effects. The installation activities will generate localised increases in SSC and the potential release of contaminated sediment which will subsequently deposit on the seabed. This impact will occur intermittently over a period of 41 months. This impact could adversely affect aquaculture, finfish and salmonid fish farm site receptors both directly and indirectly. The effect would be of local spatial extent, short term duration, intermittent frequency and high reversibility. The magnitude is therefore considered to be **low.** High SSCs are expected to be highly localised in the immediate vicinity of the release site, and therefore any effect would be spatially restricted. Subsequently, successive tides will further dissipate the plume of disturbed material. The increases in SSC associated with the Offshore Site are anticipated to be within natural variability and will reduce to background concentrations within a short period (< 1 day).

Finfish farms are deemed to be of low vulnerability, high recoverability and of a high value. The sensitivity of the receptor is therefore, considered to be **low**.

With regards to shellfish in freshwater aquaculture sites, burrowing species will be able to excavate any sediment re-deposited as a result of Offshore Site activities while most crab and lobster species and some mobile shellfish are able to escape from under silt and migrate away from an area. Increased SSC may also adversely impair the feeding capabilities of scallops, although individuals are capable of moving away from areas with higher sediment loads. Shellfish are deemed to be of medium vulnerability, high recoverability and of high value and as there are aquaculture farms within 15 km the sensitivity of the receptor is therefore, considered to be **medium.**

Salmonids in aquaculture farms are understood to be sensitive to increased SSC and released sediment contaminants through reduced visual ability to detect prey (Abbotsford, 2021), however, effects will be limited due to the distance of these sites to the extent of SSC and released contaminants. The effect would be of a local spatial extent, short term duration, intermittent frequency and high reversibility. Salmonids are deemed to be of low vulnerability, high recoverability and of very high value. The sensitivity of the receptor is therefore, considered to be **low**.

With respect to the accidental release of pollutants, i.e., from vessels and construction equipment, it is predicted that the impact will affect the receptor both directly and indirectly. An accidental event such as a vessel collision has the potential to result in the release or spillage of fuel or other contaminants from vessels. The initial result of such a spill or leakage would likely include physical disturbance at the discharge location. Based on the unlikely event that a pollution event will take place combined with the area being a high energy environment, any spills or leakages are likely to disperse rapidly, and the impact will be highly localised. The effect would be a rare event with low reversibility and a localised extent with long term consequences. If severe, it is predicted that the effect could result in a partial or alteration to the integrity of the fish and shellfish population within aquaculture, finfish and salmonid farm sites. The magnitude is therefore considered to be **medium.**

Although finfish (e.g., salmon) are considered highly mobile species and therefore considered to be of low vulnerability to pollution given their mobility to avoid areas of release, this differs with fish held in sea cages due to the contained nature of the environment restricting the space for these fish to avoid pollution. Nevertheless, due to the distance of the Offshore Site from the nearest aquaculture sites, the low likelihood of pollution occurrence and the ability of the high energy environment to disperse any pollution rapidly, the sensitivity of these sites is considered **low.** Shellfish are judged to have a medium vulnerability, due to their low mobility, medium recoverability, and a high value. Therefore, shellfish are considered to be of **medium** sensitivity.

Assessment of significance prior to mitigation

Temporary increases in SSC and associated deposition during construction will have an unlikely, adverse, direct, temporary, intermittent and reversible effect on aquaculture sites with a localised spatial extent. This constitutes a low magnitude of effect. Combined with the low sensitivity of fish, it is concluded that given the aquaculture sites that lie within 15 km of the Offshore Site, temporary increases in SSC and associated deposition and release of contaminated sediment during construction could have a **slight, negative effect** which is Not Significant. However, at this maximum range the concentrations of SSC will be close to background levels.

Vessel pollution during construction will have an unlikely, adverse, direct, unlikely, long term, one-off and irreversible impact on marine finfish receptors. Combined with the medium sensitivity of shellfish, it is concluded that the accidental release of pollutants could have **a significant negative effect** on shellfish aquaculture sites, which is Significant. For finfish aquaculture sites <15 km from the Offshore Site, pollution could have **a not significant negative effect** which is Not Significant.

Mitigation

SSC and release of contaminated sediment

Environmental surveys showed that sediment across the Offshore Site contained low or very low concentrations of contaminants (Appendix 9-1: Benthic Survey Technical Report). However, this is still assessed here for completeness.

Mitigation by design (avoidance/prevention) has been incorporated throughout the Offshore Site. The use of GBS fixed bottom foundations avoids the need for drilling of foundations which can cause localised high SSC and release of contaminated sediment. Therefore, the highest concentrations are limited to the release of dredged material by a dredger hopper, as discussed above. Nonetheless, the Project has committed to releasing dredged material through a fall pipe at a height of 5m above the seabed (rather than at sea surface) which significantly reduces the potential for dispersion of sediment and resettlement time.

The use of trenchless technologies at the Landfall, such as HDD, will minimise the extent of seabed disturbance, thereby reducing elevated SSC in the water column. The implementation and adherence

to an OEMP for construction will also implement measures to ensure that the discharges at the trenchless landfall pop-out are suitable for release into the marine environment.

Vessel Pollution

Mitigation by avoidance/prevention has been incorporated throughout the offshore site. The embedded mitigations, and installation vessels operating during the construction phase will operate in accordance with best practice and maritime conventions including the International Convention for the Prevention of Pollution from Ships (MARPOL) and The Ballast Water Management Convention (BWM) conventions. Adherence to these conventions seek to avoid, prevent and reduce the likelihood that vessel operations result in pollution events to the marine environment, including from routine discharges which is prohibited, except when the ship has in operation an approved sewage treatment plant or when the ship is discharging comminated and disinfected sewage using an approved system at a distance of more than three nautical miles from the nearest land as per MARPOL IV (Appendix 5-3: Marine Pollution Contingency Plan) . Additionally, control measures and Shipboard Oil Pollution Emergency Plan (SOPEPs) (for oil tankers of 150 gross tonnage and above and all vessels of 400 gross tonnage and above) will be established and adhered to, if required, under MARPOL Annex I.

Furthermore, the Project has developed and will adhere to the EMP and its annexes which include a Marine Pollution Contingency Plan (MPCP) and Invasive Non-Native Species (INNS) management plan in order to reduce the likelihood of pollution events and to ensure procedures are in place should an accidental release occur. These protocols will ensure potential pollution is contained and rectified quickly. Additionally, emergency response procedures will be in place for the Offshore Site, should an emergency situation occur, including any pollution incidents.

Residual effects

Temporary increases in SSC and associated deposition and release of during construction will result in highly localised, short-term and recoverable effects. Furthermore, any release of pollutants from vessels is highly unlikely and will be appropriately mitigated. Taking the embedded mitigation described above into account, the residual effect of SSC, contaminated sediments and vessel pollution during construction is as follows:

- Finfish farms: **slight negative effect**;
- Shellfish aquaculture farms: **slight negative effect**;

Effects on the aquaculture receptors are therefore assessed to be Not Significant.

18.6.2.5 Obstruction to military activities

18.6.2.5.1 *Description of effect*

During the construction phase, there will be a small increase in localised vessel traffic associated with the Project. As such there is the potential for obstruction to military activities as a result of the physical presence of Project vessels and associated advisory safe clearance ranges.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to military activities, or the restriction of military activities or operations.

18.6.2.5.2 *Characterisation of unmitigated effect*

There are no military activities that occur within the Other Sea Users Study Area. The nearest identified site of military activity, located 72 km to the north of the Other Sea Users Study Area, is the X5501: Northern Fleet Exercise Area.

18.6.2.5.3 Assessment of significance prior to mitigation

Prior to mitigation, due to the intervening distance of the Offshore Site from any sites of military activity, effects from obstruction to military activities are unlikely, therefore the effect is assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.2.5.4 Mitigation

No mitigation measures are proposed.

18.6.2.5.5 Residual Effects

The effect remains an **imperceptible, neutral effect** which is Not Significant.

18.6.2.6 Obstruction to oil and gas activities

18.6.2.6.1 Description of effect

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to oil and gas activities as a result of the physical presence of Project vessels and associated advisory safe clearance ranges around vessels. Additionally, construction works could result in damage to oil and gas infrastructure.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to an oil and gas site, or the restriction of oil and gas activities or operations.

18.6.2.6.2 Characterisation of unmitigated effect

There are no oil and gas activities within the Other Sea Users Study Area. The nearest active oil and gas licence area is located approximately 71 km from the Other Sea Users Study Area.

18.6.2.6.3 Assessment of significance prior to mitigation

Due to the intervening distance of the Offshore Site from any oil and gas asset, effects from obstruction to oil and gas activities are unlikely, additionally there is no potential for damage to oil and gas infrastructure due to the intervening distance, therefore the effect is assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.2.6.4 Mitigation

No mitigation measures are proposed.

18.6.2.6.5 Residual Effects

The effect remains an **imperceptible, neutral effect** which is Not Significant.

18.6.2.7 Obstruction to spoil disposal activities

18.6.2.7.1 Description of Effect

During the construction phase, there will be a small increase in localised vessel traffic associated with the Offshore Site. As such there is the potential for obstruction to spoil disposal activities as a result of the physical presence of Project vessels and associated advisory safe clearance ranges.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to a spoil disposal site, or the restriction of spoil activities or operations.

18.6.2.7.2 *Characterisation of unmitigated effect*

The closest spoil disposal site is located at Rossaveel Harbour, approximately 23 km to the east of the OAA and 4 km to the north of the Other Sea Users Study Area at the nearest point (EMODnet, 2023). While there is the potential for some construction support activities to operate out of Rossaveel Harbour, Project vessels transiting from the harbour will utilise pre-defined transit routes (as outlined within the supporting VMP [Appendix 5-10]) which will avoid spoil disposal sites. Furthermore, it is anticipated that the physical presence of construction vessels will result in only a minor increase in the frequency of vessel transits with respect to background vessel movements. Given the intervening distance between the Offshore Site and the closest spoil disposal site and the avoidance of spoil disposal sites by transiting construction vessels, the magnitude of impact is considered to be **negligible**.

Temporary anchorage of GBS fixed bottom foundations in transit to the OAA may occur within the Shannon estuary. Although a number of spoil disposal sites are present within the Shannon Estuary, the area of obstruction from vessels engaged in Offshore Site operations and associated advisory safe clearance ranges transiting to and from marshalling facilities and temporary anchorage within the estuary, will be short-term in nature and will be managed and regulated Shannon-Foynes Port. Works associated with construction (in relation to temporary anchorage) are anticipated to take place over a local scale, and short-term duration. Given the nature of works associated with the construction of the Offshore Site, the magnitude of impact to spoil disposal sites within the Shannon Estuary is considered to be **negligible.**

18.6.2.7.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects from obstruction to spoil activities are unlikely, therefore the effect is assessed as a **not significant negative effect** which is Not Significant.

18.6.2.7.4 *Mitigation*

Mitigation by Consultation

The potential temporary anchorage of Project infrastructure within the Shannon Estuary will be coordinated by Shannon Foynes Port . Through this, any works associated with the temporary anchorage of infrastructure and the operations of Project vessels within the Shannon Estuary will be manged by the Harbour Authority to reduce any potential impacts to spoil dumping operations within the Shannon Estuary.

18.6.2.7.5 *Residual Effects*

Due to the short-term nature of the works, and the embedded mitigation measures identified in Section 18.6.2.7.4, significant effects associated with the obstruction to spoil activities as a result of advisory safe clearance ranges around vessels are not anticipated. Therefore, the residual effects are likely, short-term, **not significant negative effects**.

18.6.3 Operational and Maintenance Phase

18.6.3.1 Obstruction to offshore renewable energy developments as a result of operational and maintenance activities

18.6.3.1.1 *Description of effects*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in obstruction to offshore renewable energy developments. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for obstruction to offshore renewable energy developments as a result of advisory safe clearance ranges around Project vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to an offshore renewable energy development site, or the restriction of development operations.

18.6.3.1.2 Characterisation of unmitigated effect

As detailed in Section 18.6.2.1, renewable energy developments are considered to be of **negligible sensitivity**.

While the proposed the Western Star Wave/Project Saoirse and the WestWave Demonstration Project have not been awarded a Maritime Area Consent (MAC), should either of these developments be awarded consent during the operational life of the Offshore Site, there is the potential for the operational timelines to overlap.

As Project Saoirse and WestWave are located approximately 9.5 km to the east and 10 km to the west of the OECC respectively, the physical presence of the OEC is not considered to result in potential obstruction to activities associated with this development. Maintenance vessel activities and the implementation of advisory safe clearance ranges associated with the Offshore Site have the potential to result in an obstruction to works associated with these renewable developments. However, any works associated with the operation and maintenance phase of the Offshore Site are anticipated to be substantially less than during construction activities, with O&M activities being very temporary (likely a couple of weeks or months presence depending on scale of works) and small scale in nature being limited to the OAA or OECC, as such the magnitude of impact is considered to be **negligible**.

18.6.3.1.3 Assessment of significance prior to mitigation

As detailed above due to the placement of infrastructure being located at a distance from Project Saoirse and WestWave and as vessels during operation and maintenance will be much reduced from those required for construction works the magnitude of impact is negligible. As such, effects from obstruction to offshore renewable energy developments and operators as a result of the physical presence of Project infrastructure, Project vessels and associated advisory safe clearance ranges the potential effect is assessed as a **no effect** which is Not Significant.

18.6.3.1.4 Mitigation

Mitigation by design (avoidance/prevention)

As detailed in the embedded mitigations outlines in section 18.4.5, proximity agreements will be developed and agreed between parties to safeguard the OEC and infrastructure/activities associated with the Project Saoirse array within the OECC.

Mitigation by consultation

NtM will be disseminated to highlight any operation and maintenance activities, and ongoing engagement will be undertaken with asset owners potentially affected to ensure they are well informed of any routine maintenance or ad-hoc repair works required for the Offshore Site prior to commencement. All installed infrastructure within the marine environment will be detailed on nautical and admiralty charts and within relevant publications (further details on charting requirements can be

found in Appendix 5-10: VMP). Maintenance and repair works will be undertaken in line with industry standard best practice as agreed in consultation with asset owners to reduce the risk of potential for interactions between the Offshore Site and third-party assets.

18.6.3.1.5 *Residual Effects*

With consideration given to the embedded mitigation measures identified in Section 18.6.3.1.4, significant effects associated with obstruction to offshore renewable energy developments as a result of advisory safe clearance ranges around vessels and the presence of offshore infrastructure are not anticipated. Vessel presence will be temporary and localised, and whilst the presence of infrastructure will be long-term, the intervening distance between the Offshore Site will ensure a negligible magnitude of impact. Therefore, the residual effect is considered to be an **no effect**.

18.6.3.2 Obstruction to cable installations

18.6.3.2.1 *Description of effects*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in obstruction to offshore cable installations. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for the obstruction to offshore cable installations as a result of advisory safe clearance ranges around vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to an offshore cable or the restriction of cable operations.

18.6.3.2.2 *Characterisation of unmitigated effect*

As detailed in Section 18.6.2.2 above, cable installations are considered to be of **high sensitivity**.

As the IRIS submarine cable (operated by Farice) is fully operational as of March 2023, there is the potential for works associated with the operational life of the Project to directly interact with those of the IRIS submarine cable. As the IRIS submarine cable is located approximately 10 km to the south of the OAA at its nearest point, it is considered that only works associated with the operation and maintenance of the OEC, within the OECC, have the potential to result in obstruction to the IRIS submarine cable.

The potential for obstruction to the IRIS submarine cable during the operation and maintenance phase either from maintenance works on the OEC or due to associated vessel presence and associated advisory safe clearance ranges, will be less than those anticipated during the construction phase, with maintenance works required only in the event of damage to or failure of the OEC.

Any maintenance works will be undertaken at a highly localised scale, over a short-term duration and at a low intensity. Given the Offshore Site and the IRIS submarine cable will both be operational during this stage it is unlikely that any essential maintenance activities of both these assets would overlap in schedule. With consideration given to the nature of activities associated with maintenance vessels and long-term infrastructure within the marine environment, the impact magnitude is considered to be **negligible**.

18.6.3.2.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects on cable installations and operators resulting from the long-term obstruction to cable installations as a result of advisory safe clearance ranges around vessels and the

presence of offshore infrastructure is assessed as a **not significant negative effect** which is Not Significant.

18.6.3.2.4 *Mitigation*

Mitigation by design (avoidance/prevention)

As detailed in Section 18.4.5, the crossing of the IRIS cable will be facilitated and informed by a pre-established proximity and crossing agreements. The crossing agreement will be informed by engagement with Farice and will be agreed prior to the commencement of any construction works.

Mitigation by consultation

Consultation will be undertaken throughout the lifecycle of the Project. If any routine maintenance or ad-hoc repair works are required for the Offshore Site, timely dissemination of information to asset owners will be circulated prior to undertaking any works. Maintenance and repair works will also be undertaken in line with industry standard best practice as agreed in consultation with Farice to reduce the risk of potential damage to the Offshore Site and third-party assets.

18.6.3.2.5 *Residual effects following mitigation*

With consideration given to the embedded mitigation measures identified in Section 18.6.3.2.4, significant effects associated with the obstruction to cable installations as a result of advisory safe clearance ranges around vessels and the presence of offshore infrastructure are not anticipated. Vessel presence will be localised and temporary, and whilst the presence of infrastructure will be long-term, the intervening distance between the Project will ensure a negligible magnitude of impact. Therefore, the residual effect is considered to be an **imperceptible negative effect.**

18.6.3.3 Obstruction to marine recreational users

18.6.3.3.1 *Description of effects*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in the long-term obstruction to marine recreational users. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for obstruction to marine recreational users as a result of advisory safe clearance ranges around vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to a marine recreational site, or the restriction of marine recreational activities or operations.

18.6.3.3.2 *Characterisation of unmitigated effect*

As described in section 18.6.3.3.1 above, marine recreational users are considered to be of **high sensitivity**.

Given the nature of marine recreational activities within the Other Sea Users Study Area, it is considered that works associated with the operation and maintenance of the OEC in the OECC within coastal waters have the greatest potential to obstruct marine recreational users.

As the OEC(s) will either be buried under the seabed or situated on the seabed with adequate protection, there will be no impacts from the physical presence of the OEC(s) on recreational users identified. The potential for obstruction to marine recreational users as a result of maintenance vessels

and associated advisory safe clearance ranges are considered to be less significant those assessed as part of the construction phase (see Section 18.6.2), with routine and ad-hoc maintenance resulting in a temporary obstruction to marine recreational users.

Any maintenance works will be undertaken at a highly localised scale, will be temporary and occur at a low intensity. With consideration given to the nature of activities associated with maintenance vessels and presence of the export cable within the marine environment unlikely to encounter marine recreational users, the impact magnitude is therefore considered to be **negligible**.

18.6.3.3.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects on Other Sea Users resulting from obstruction to marine recreational users as a result of advisory safe clearance ranges around vessels and the presence of offshore infrastructure during operation and maintenance is assessed as a **not significant negative effect** which is Not Significant.

18.6.3.3.4 *Mitigation*

Mitigation by consultation

As detailed in Section 18.4.5, marine recreational users will be informed in advance of any routine maintenance or ad-hoc repair works required for the Offshore Site prior to the commencement of any works. Throughout the operation and maintenance phase of the Offshore Site, ongoing engagement will be undertaken with key stakeholders (including scuba diving and snorkelling centres, Blue Flag beach operators and local ports and marina) to ensure that any activities associated with the operation and maintenance of the Offshore Site, including the type of maintenance vessels required, their location within the marine environment and their period of activity, is clearly conveyed prior to the commencement of any maintenance activities. All installed infrastructure within the marine environment will be detailed on nautical and admiralty charts and within relevant publications (further details on charting requirements can be found in Appendix 5-10: VMP).

18.6.3.3.5 *Residual Effects*

With consideration given to the embedded mitigation measures identified in section 18.6.3.3.4, significant effects associated with the obstruction to marine recreational users as a result of advisory safe clearance ranges around Project vessels and the presence of offshore infrastructure are not anticipated. Vessel presence will be temporary and localised, an whilst the presence of infrastructure will be long-term, the intervening distance between the Project will ensure a negligible magnitude of impact. Therefore, the residual effect is considered to be an **imperceptible negative effect.**

18.6.3.4 Potential effects to aquaculture operations

18.6.3.4.1 *Obstruction to aquaculture operations*

Description of effect

During the operational and maintenance phase, the physical presence of offshore infrastructure and the small increase in localised vessel traffic within the marine environment has the potential to result in obstruction to aquaculture sites.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to an aquaculture site or the restriction of aquaculture site operations.

Characterisation of unmitigated effect

There are a number of aquaculture sites within the Other Sea Users Study Area, the closest distance between these sites and the OAA and OECC is approximately 6.3 km from the nearest point. Due to the intervening distance, advisory safe clearance ranges of 500 m around the vessels and the physical presence of Offshore Site infrastructure are highly likely to result in effects to the operations of aquaculture sites, owing to the highly localised and short-term nature of the impacts. As such, the magnitude of the effects is considered to be **negligible**.

Assessment of significance prior to mitigation

Prior to mitigation, due to the distance of the Offshore Site from aquaculture sites, effects from obstruction to aquaculture sites as a result of the physical presence of offshore infrastructure and advisory safe clearance ranges around vessels are unlikely to result in any adverse effect due to the highly localised nature of the impact, therefore the effect is assessed as an **imperceptible, neutral effect** which is Not Significant.

Mitigation

No mitigation measures are proposed.

Residual effects following mitigation

The effect remains an imperceptible, neutral effect.

18.6.3.4.2 *Potential effects from an increase in SSC and release of sediment bound contaminants and vessel pollution*

Description of effect

During operations and maintenance, Project activities on the seabed such as cable maintenance activities and major repairs have the potential to disturb seabed sediments. As detailed in Section 18.6.3.4 activities which interact with the seabed have the potential to result in an adverse effect from pollution of the water column through leaching or dispersal of seabed sediments holding contaminants to further afield. During the operation and maintenance phase the potential interactions with the seabed will be less frequent and less intense than during construction due to the nature of repairs. Nonetheless, if major repairs are needed on the seabed these could result in similar impacts to those presented in Section 18.6.2.4.2 for construction. Vessel pollution was not scoped in with regards to aquaculture/finfish species in other respective chapters, i.e., Chapter 10: Fish and Shellfish Ecology and Chapter 13: Commercial Fisheries.

Characterisation of unmitigated effect

If major works are needed during operations the SSCs and plume extent are likely to be similar for those detailed in Section 18.6.2.4.2 i.e., up to a maximum 15 km in extent and settling out within a period of 14 hours. It is important to note, however, that SSC is greatest in close proximity to the activity, and that at the maximum expected extent of any plume, the SSC will not be discernible from background SSC levels. It is anticipated this would be greatly reduced for smaller repair works along targeted sections of the seabed.

Section 18.6.2.4.2. details aquaculture/ finfish sensitivity. The requirement for repair and reburial cannot be foreseen and may take place at any time of the year across the Offshore Site's life cycle. However, any impact during operation and maintenance is anticipated to be less than that described for

construction in Section 11.6.2.3. Therefore, taking a very conservative approach, the magnitude of impact is predicted to be comparable to construction and is judged to be **low** for all receptors.

Assessment of significance prior to mitigation

Temporary increases in SSC and associated deposition during operation and maintenance will have an adverse, direct, likely, temporary, localised spatial extent, intermittent and reversible impact on marine finfish receptors. Combined with the low sensitivity of finfish and diadromous/freshwater farms (i.e., salmonids fish farm sites) it is concluded that temporary increases in SSC and associated deposition during operation and maintenance will have a **not significant negative effect** on this receptor. Combined with the medium sensitivity of shellfish aquaculture farms, it is concluded that temporary increases in SSC and associated deposition during operation and maintenance will have a **slight negative effect** on this receptor, which is Not Significant.

Mitigation

Cable surveys will be conducted during the operational stage to determine if intervention is needed. These surveys will ensure that maintenance is targeted to necessary areas reducing the need for large scale works where appropriate. This will reduce disturbance of the seabed and suspended sediment generation.

For vessel pollution, as detailed for the construction stage the mitigations proposed are considered sufficient to reduce the residual effects to not significant levels (see Section 8.6.2.3.4). These measures include vessels adhering to MARPOL and BWM conventions during the operations and maintenance phase. Additionally, control measures and SOPEPs will be established and adhered to, as required under MARPOL Annex I. Furthermore, the Project will adhere to the OEMP which includes a MPCP and an INNS management plan in order to reduce the likelihood of pollution events and to ensure procedures are in place to safeguard biosecurity. An emergency response procedure will also be in place for the Offshore Site, should an emergent situation occur, including any large-scale pollution incidents.

Additionally, the WTG including the nacelle, tower, and rotor and OSS structures are designed to contain any potential leaks. The containment design of the WTG / OSS sections will therefore significantly reduce the risk of potential spills contaminating the marine environment. Additionally, for the planned oil transfers the transfer of potential pollutants to WTG's/OSS will be meticulously planned and will follow all relevant guidelines as stated by the MPCP. Pre-construction benthic survey and habitat mapping has been undertaken to inform habitat distribution and identify potential spawning or nursery habitats.

Residual effect following mitigation

Temporary increases in SSC and associated deposition during operation and maintenance will result in highly localised, short-term and recoverable effects. Taking the embedded mitigation described above into account, the residual effect of temporary habitat loss or disturbance during operation and maintenance is as follows:

- Finfish farms: **imperceptible negative effect;**
- Shellfish aquaculture farms: **imperceptible negative effect;**;

Effects on all receptors are therefore assessed to be Not Significant.

18.6.3.5 Obstruction to military activities

18.6.3.5.1 *Description of effect*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in the long-term obstruction to military activities. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for the temporary obstruction to military activities as a result of advisory safe clearance ranges around Project vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to military activities or the restriction of military operations.

18.6.3.5.2 *Characterisation of unmitigated effect*

There are no military activities that occur within the Other Sea Users Study Area. The nearest identified site of military activity, located 72 km to the north of the Other Sea Users Study Area, is the X5501: Northern Fleet Exercise Area.

18.6.3.5.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects on Other Sea Users resulting from the long-term obstruction to military activities as a result of the physical presence of offshore infrastructure and advisory safe clearance ranges around vessels is assessed as imperceptible. Any effects on Other Sea Users are assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.3.5.4 *Mitigation*

No mitigation measures are proposed.

18.6.3.5.5 *Residual effects following mitigation*

The effect remains an imperceptible, neutral effect.

18.6.3.6 Obstruction to oil and gas activities

18.6.3.6.1 *Description of effect*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in the long-term obstruction to oil and gas activities. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for the temporary obstruction to oil and gas activities as a result of advisory safe clearance ranges around vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to oil and gas activities or the restriction of oil and gas activities or operations.

18.6.3.6.2 *Characterisation of unmitigated effect*

There are no oil and gas activities within the Other Sea Users Study Area, with the nearest active oil and gas licence area located approximately 71 km from the Other Sea Users Study Area.

18.6.3.6.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects on Other Sea Users resulting from the long-term obstruction to oil and gas activities as a result of the physical presence of offshore infrastructure and advisory safe clearance ranges around vessels is assessed as **imperceptible**. Any effects on Other Sea Users are assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.3.6.4 *Mitigation*

No mitigation measures are proposed.

18.6.3.6.5 *Residual effects following mitigation*

The effect remains an imperceptible, neutral effect.

18.6.3.7 Obstruction to spoil disposal activities

18.6.3.7.1 *Description of effect*

During the operational and maintenance phase, the physical presence of offshore infrastructure within the marine environment has the potential to result in the long-term obstruction to spoil disposal activities. Furthermore, there will be a small increase in localised vessel traffic associated with the operation and maintenance of the Offshore Site. As such there is the potential for the temporary obstruction to spoil disposal activities as a result of advisory safe clearance ranges around Project vessels.

As part of this assessment of likely significant effects, obstruction is defined as any loss of access to spoil disposal activities or the restriction of spoil disposal activities or operations.

18.6.3.7.2 *Characterisation of unmitigated effect*

The closest spoil disposal site is located at Ros an Mhíl Harbour, approximately 23 km to the east of the OAA and 4 km to the north of the Other Sea Users Study Area at the nearest point (EMODnet, 2023). While Ros an Mhil Harbour is considered a candidate location for the Project O&M base, any maintenance vessel activities will occur over a much lower scale than those anticipated during the construction phase, with the physical presence of Project vessels not likely to result in a significant increase in the frequency of vessel transits against background vessel activities. Given the intervening distance between the Offshore Site and the closest spoil disposal site, the magnitude of impact is considered to be **negligible**.

Within the Shannon Estuary, there are a total of 15 spoil disposal sites (as detailed within Section 18.5.2.1.2). Although a number of spoil disposal sites are present within the Shannon Estuary. Given that there will be no requirement for temporary anchorage of Offshore Site infrastructure within the Shannon Estuary during the operation and maintenance phase of the Offshore Site, the magnitude of the impact is considered to be **negligible**.

18.6.3.7.3 *Assessment of significance prior to mitigation*

Prior to mitigation, any effects on Other Sea Users resulting from the obstruction to spoil disposal activities as a result of the physical presence of offshore infrastructure and advisory safe clearance ranges around vessels is assessed as imperceptible. Any effects on Other Sea Users are assessed as an **imperceptible neutral effect** which is Not Significant.

18.6.3.7.4 Mitigation

No mitigation measures are proposed.

18.6.3.7.5 Residual Effects following mitigation

The effect remains an imperceptible, neutral effect.

18.6.4 Decommissioning Phase

A Rehabilitation Plan has been prepared for the Project (see Appendix 5-18). The Rehabilitation Plan will be updated prior to the end of the operational period in line with decommissioning methodologies that may exist at the time and any proposed changes will be agreed with the competent authority at that time.

The decommissioning methodology will be the reverse of the installation processes, with a WTIV used to remove WTGs and OSS structures. The approach to decommissioning involves the removal of WTGs and GBS fixed bottom foundations, cutting and removing exposed cables, and decommissioning stonebeds and buried cables *in situ* which is considered to be the best approach to preserving the marine environment. For example, by leaving rock protection *in situ*, any marine habitats and associated species which have colonised these structures throughout the operational life of the Project will remain in place. Where is it necessary to leave sections of OEC *in situ*, cable ends will be cut as close to the seabed as possible and buried to reduce the potential for impacts to Other Sea Users.

There is the potential for temporary obstruction of Other Sea Users during decommissioning activities as a result of the physical presence of decommissioning vessels and associated advisory safe clearance ranges. It is considered that the temporary obstruction of Other Sea Users during decommissioning will be akin to or of a lower magnitude than those anticipated as part of the construction phase.

It is considered that all methods of decommissioning and associated impacts for the Project are comparable to those assessed as part of the construction phase. Taking this into consideration, along with the embedded mitigation outlined in Section 18.4.5 which will also be applicable to decommissioning, the effects associated with the Decommissioning Phase will be no worse than the **slight negative** effects anticipated during the construction phase, which are Not Significant.

18.7 Summary of Effects

18.7.1 Construction Phase

Table 18-10 Construction Phase Residual Effects

Impact	Magnitude	Sensitivity	Significance Prior to Mitigation	Mitigation	Residual Effect
Obstruction to offshore renewable energy developments	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect

Impact	Magnitude	Sensitivity	Significance Prior to Mitigation	Mitigation	Residual Effect
Obstruction to cable installations	Low	High	Slight negative effect	As per Section 18.4.5	Not significant negative effect
Obstruction to marine recreational users	Low	High	Slight negative effect	As per Section 18.4.5	Not significant negative effect
Potential effects to aquaculture operations	Negligible	Low	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Potential effects from an increase in SSC and release of sediment bound contaminants and vessel pollution on Aquaculture	Low	Medium	Slight negative effect, Not Significant	As per Section 18.4.5	Slight negative effect, Not Significant
Potential effects from an increase in SSC and release of sediment bound contaminants and vessel pollution on Finfish sites	Low	Low	Not significant negative effect; Not Significant.	As per Section 18.4.5	Slight negative effect, Not Significant
Potential pollution from Vessels on aquaculture farms	Medium	Medium	Significant negative effect; Significant.	As per Section 18.4.5	Slight negative effect, Not Significant
Potential pollution from Vessels on finfish farms	Medium	Low	Slight Negative Effect	As per Section 18.4.5	Slight negative effect, Not Significant
Obstruction to military activities	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Obstruction to oil and gas activities	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect

Impact	Magnitude	Sensitivity	Significance Prior to Mitigation	Mitigation	Residual Effect
Obstruction to spoil disposal activities	Low	Negligible	Slight negative effect	As per Section 18.4.5	Not significant negative effect

18.7.2 Operational and Maintenance Phase

Table 18-11 Operational and Maintenance Phase Residual Effects

Impact	Magnitude	Sensitivity	Significance Prior to Mitigation	Mitigation	Residual Effect
Obstruction to offshore renewable energy developments	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Obstruction to cable installations	Low	High	Slight negative effect	As per Section 18.4.5	Not significant negative effect
Obstruction to marine recreational users	Low	High	Slight negative effect	As per Section 18.4.5	Not significant negative effect
Potential effects to aquaculture operations	Negligible	Low	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Potential effects from an increase in SSC and release of sediment bound contaminants on shellfish aquaculture	Low	Medium	Slight negative effect	As per Section 18.4.5	Slight negative effect
Potential effects from an increase in SSC and release of sediment bound contaminants on finfish farms	Low	Low	Not Significant negative effect	As per Section 18.4.5	Not Significant negative effect

Impact	Magnitude	Sensitivity	Significance Prior to Mitigation	Mitigation	Residual Effect
Potential pollution from Vessels	Medium	Medium	Moderate negative effect	As per Section 18.4.5	Not significant slight negative effect
Obstruction to military activities	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Obstruction to oil and gas activities	Negligible	Negligible	Imperceptible neutral effect	As per Section 18.4.5	Imperceptible neutral effect
Obstruction to spoil disposal activities	Low	Negligible	Not Significant effect	As per Section 18.4.5	Not significant negative effect

18.7.3 Decommissioning Phase

The effects from the decommissioning phase will be equal to or less than those described during the construction phase (Section 18.7.1). The approach to decommissioning involves the removal of WTGs and GBS fixed bottom foundations, cutting and removing exposed cables, and decommissioning stonebeds and buried cables in situ which is considered to be the best approach to preserving the marine environment. Unlike during the construction phase, there will be no cable trenching or disposal of dredged materials during the decommissioning phase, which will be shorter in duration in comparison to the construction phase. Similar mitigation measures as outlined for the construction phase will be implemented throughout the decommissioning phase, as appropriate.

18.8 Cumulative Effects

Potential effects from the Project have the potential to interact with those from other project (development), plans and activities, resulting in cumulative effects on other sea users. The general approach to the cumulative effects assessment (CEA) is described in Chapter 4: EIA Methodology and further detail is provided below.

The list of cumulative developments relevant to the other sea user's assessment is presented in Table 18-12 below. The identification of cumulative developments has been informed by a screening exercise, undertaken to identify relevant developments for consideration within the cumulative effects assessments for each EIA topic. The cumulative study area for other sea users is consistent with the approach outlined in Section 18.5.1 and is defined as the Offshore Site plus a 20 km buffer. It is considered that this cumulative study area provides a local (i.e. within the Offshore Site) and regional context for other sea users receptors. It is important to note that there are no projects/developments of an equivalent scale or type to the Project within 20 km. To date, there has been little, large-scale construction on the west coast of Ireland generally. Therefore, many of the relevant developments in Table 18-12 represent short-term, localised activities which are not generally associated with any long-term infrastructure presence.

Table 18-12 Developments to be considered further in CEA

Development Type	Status	Screened In / Screened Out	Justification
Foreshore Licences	Concept / Early Planning/Operational	Screened Out	All Foreshore Licences within 20 km of the Offshore Site are either at the early concept/planning phase or are currently operational. For those sites which are in early concept/planning and have not been awarded Maritime Area Consent and which have no Designated Maritime Area Plan (DMAP) in place there is insufficient detail in the public domain to inform the cumulative effects assessment. For Foreshore Licences that are operational or where operations have already commenced, these developments are considered part of the baseline environment and have therefore not been considered further as part of the CEA.
Aquaculture	Operational	Screened Out	There are a total of 34 licenced aquaculture sites within 20 km of the Offshore Site, the closest site is located 6.3 km from the OAA. These operational developments are considered as part of the baseline environment (as described within Section 18.5.2.1.1) and therefore have not been considered further within this CEA.
Dumping at Sea	Inactive	Screened Out	There are two dumping at sea sites located within 20 km of the OEC. The nearest dumping at sea activities occur at Kilrush Marina within the Shannon Estuary. Accounting for the geography of the coastline, the intervening distance between the Offshore Site and the highly localised activities at dumping at sea locations there is no opportunity for cumulative interactions and these sites have therefore not been considered further within this CEA.
Discharge Points	Operational	Screened Out	There are two four discharge points located within 20 km of the OEC. The nearest discharge point is located at Kilkee which are operational and form part of the baseline, 11.9 km from the OEC. Accounting for the intervening distance between the Offshore Site and the highly localised activities at discharge points there is no opportunity for cumulative interactions with the Offshore Site and other sea users and these sites have therefore not been considered further within this CEA.

Development Type	Status	Screened In / Screened Out	Justification
Urban Waste Water Treatment and Waste Schemes	Operational	Screened Out	All urban waste water treatment locations and waste schemes are operational and located onshore. Therefore, these sites have not been considered further within the CEA.
Wave Data Buoys Navigation Buoys and Tidbit Sea Temp Probes	Operational	Screened Out	There are a number of wave buoys, navigation buoys, and sea temperature probes within 20 km of the Offshore Site. As above, these operational buoys are considered part of the baseline environment and therefore have not been considered further within this CEA.
Ferry Port	Operational	Screened Out	There are three ferry ports located within 20 km of the Offshore Site. However, as these ports are operational and are considered part of the baseline environment they have not been considered further within this CEA.
Lighthouses	Operational	Screened Out	Operational lighthouses located onshore do not present a cumulative effects pathway for the Offshore Site and other sea users and have therefore not been considered further within this CEA.
Planning Applications, An Bord Pleanála (ABP) Cases and EIA Points	Application Stage	Screened Out	Onshore planning application for residential and agricultural developments do not present a cumulative effects pathway for the Offshore Site and other sea users. These planning applications have therefore not been considered further within this CEA.
Licensed Waste Facility	Operational	Screened Out	The presence of licenced waste facilities onshore do not present a cumulative effects pathways for the Offshore Site and other sea users. These facilities have therefore not been considered further within this CEA.

18.8.1 Cumulative Construction Effects

All cumulative construction effects have been screened out.

18.8.2 Cumulative Operational Effects

All cumulative operational effects have been screened out.

18.8.3 Cumulative Decommissioning Effects

During the decommissioning phase of the Project, residual effect levels will be the same as, or less than, those anticipated during the construction phase of the Project. There are no additional CEA considerations specific to the decommissioning phase. Therefore, all cumulative decommissioning effects have been screened out.

GLOSSARY OF PROJECT TERMS

Term	Description
Landfall	The location where the Offshore Export Cable will be brought ashore.
Onshore Export Cable	The cable that transports electricity from the Landfall location to the onshore substation.
Onshore Site	Includes Landfall infrastructure, onshore grid connection, onshore substation and onshore export cable to the MP 400 kV substation.
Onshore Substation	Onshore substation infrastructure.
Offshore Array Area	Turbines and associated foundations and internal cabling.
Offshore Export Cable	Offshore cable that transports electricity from the Offshore Array Area to the Landfall location.
Offshore Export Cable Corridor	The 1 km corridor assumed for the Offshore Export Cable.
Offshore Site	Includes turbines and all associated infrastructure, the Offshore Substation, internal cabling, Offshore Export Cable and Landfall.
Offshore 220Kv Electrical Substation	Offshore substation infrastructure, including foundations.
The Project	All infrastructure associated with the Onshore and Offshore developments.

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ABP	An Bord Pleanála
BIM	Bord Iascaigh Mhara
BWM	The Ballast Water Management Convention
CFE	Controlled Flow Excavation

Acronym/Abbreviation	Definition
CLV	Cable Lay Vessel
CTV	Crew Transfer Vessel
DAFM	Department of Agriculture, Food and the Marine
DECC	Department for Environment, Climate and Communications
DHLGH	Department of Housing, Local Government and Heritage
DMAP	Designated Maritime Area Plan
DO	Dissolved Oxygen
EC	European Commission
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMODnet	European Marine Observation and Data Network
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
ERCoP	Emergency Response Cooperation Plan
ESB	Electricity Supply Board
ESCA	European Subsea Cable Association
GBS	Gravity Base Structure
GW	Gigawatt
HDD	Horizontal Direct Drilling
HLV	Heavy Lift Vessel

Acronym/Abbreviation	Definition
IAC	Inter-Array Cable
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICPC	International Cable Protection Committee
INNS	Invasive Non-Native Species
IRCG	Irish Coast Guard
KISORCA	Kingfisher Information Services
MARPOL	International Convention for the Prevention of Pollution from Ships
MGN	Marine Guidance Note
ML	Marine Licence
MPCP	Marine Pollution Contingency Plan
MTS	Marine Traffic Survey
MW	Megawatt
NMPF	National Marine Planning Framework
NMOSCP	National Maritime Oil & HNS Spill Contingency Plan
NSVMP	Navigational Safety Vessel Management Plan
NtM	Notice to Mariners
MTS	Marine Traffic Survey
OECC	Offshore Export Cable Corridor
ORE	Offshore Renewable Energy
OREDP	Offshore Renewable Energy Development Plan
OSPAR	The Convention for the Protection of the Marine Environment of the North-East Atlantic

Acronym/Abbreviation	Definition
OSS	Offshore 220kV Electrical Substation
OSU	Other Sea Users
OWF	Offshore Wind Farm
O&M	Operation and Maintenance
PLGR	Pre-Lay Grapnel Run
PLONOR	Pose Little or No Risk
PSA	Particle Size Analysis
SAR	Search and Rescue
SOPEPs	Shipboard Oil Pollution Emergency Plan
SOV	Service Operation Vessel
SSC	Suspended Sediment Concentrations
THSD	Trailing suction hopper dredger
USD	United States Dollar
UXO	Unexploded Ordnance
WEC	Wave Energy Conversion
WTG	Wind Turbine Generator
WTIV	Wind Turbine Installation Vessel