

Appendix 5-2: Environmental Management Plan





ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report Appendix 5-2: Environmental Management Plan

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ORIEL WIND FARM PROJECT – ENVIRONMENTAL MANAGEMENT PLAN

Contents

	Acronyms.....	iv
1	INTRODUCTION	1
	1.1 Purpose.....	1
	1.2 Scope.....	1
	1.3 Aims and objectives	2
	1.4 Document structure.....	2
	1.5 Other relevant documents.....	2
	1.6 Description of the Project.....	3
	1.7 Consents	3
2	PART I: MANAGEMENT, IMPLEMENTATION AND COMMUNICATION	5
	2.1 Roles and responsibilities	5
	2.1.1 Overview	5
	2.1.2 Key OWL management roles relating to environmental management.....	5
	2.1.3 Contractors and subcontractors.....	7
	2.1.4 Supporting environmental roles.....	9
	2.1.5 Contact details	12
	2.2 Communications and reporting	12
	2.3 External communications	12
	2.3.1 Incident reporting	13
	2.3.2 Dropped objects.....	13
	2.4 Training, auditing and change management.....	13
	2.4.1 Competence, training and change management.....	13
	2.4.2 Monitoring and audits	16
	2.4.3 Review and change management	16
3	PART II: ENVIRONMENTAL IMPACTS AND CONTROL MEASURES	18
	3.1 Environmental impacts and control measures	18
	3.2 Management of key environmental aspects and compliance obligations.....	18
	3.2.1 Marine species.....	18
	3.2.2 Marine archaeology	18
	3.2.3 Other marine users	18
	3.2.4 Marine pollution prevention and contingency planning	19
	3.2.5 Marine invasive non-native species.....	19
	3.2.6 Waste management.....	19
4	PART III: ANNEXES	21
	ANNEX 1: ENVIRONMENTAL POLICY	22
	ANNEX 2: MARINE POLLUTION CONTINGENCY PLAN	23
	ANNEX 3: ENVIRONMENTAL INCIDENT REPORTING PROCEDURE.....	24
	ANNEX 4: PROPOSED DROPPED OBJECTS REPORTING FORM	25
	ANNEX 5: COMMITMENTS REGISTER	27
	REFERENCES	28

ORIEL WIND FARM PROJECT – ENVIRONMENTAL MANAGEMENT PLAN

Figures

Figure 1-1: Overview of Oriel Wind Farm Project.....4

Tables

Table 2-1: Methods of environmental training and promoting environmental awareness.....14

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

Acronyms

Term	Meaning
ADD	Acoustic Deterrent Device
AEZ	Archaeological Exclusion Zone
CLM	Community Liaison Manager
CV	Curriculum Vitae
ECoW	Environmental Clerk of Works
EIAR	Environmental Impact Assessment Report
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
FLO	Fisheries Liaison Officer
HWM	High Water Mark
IEMA	Institute for Environmental Management and Assessment
IFI	Inland Fisheries Ireland
MAC	Maritime Area Consent
MARPOL	International Convention for the Prevention of Pollution from Ships
MMO	Marine Mammal Observer
MPCP	Marine Pollution Contingency Plan
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
OFLO	Offshore Fisheries Liaison Officer
OSS	Offshore Substation
OWL	Oriel Wind Limited
PAM	Passive Acoustic Monitoring
RAMS	Risk Assessment Method Statements
SEAR	Safety and Environmental Awareness Report
TII	Transport Infrastructure Ireland
WMP	Waste Management Plan

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

1 INTRODUCTION

1.1 Purpose

This Environmental Management Plan (EMP) has been prepared by RPS and Oriel Windfarm Limited (OWL) (the Applicant) to support the Environmental Impact Assessment Report (EIAR) for the Oriel Wind Farm Project (hereafter referred to as “the Project”).

The EMP will form part of the Oriel Offshore Works Contract. The methods and principles contained herein, as well as within referenced legislative instruments and published guidance documents, will be adhered to by the Contractor in developing construction method statements and other plans relating to environmental management as required by the Contract.

This version of the EMP (Version 1.0) presents minimum environmental management requirements to be adhered to by the Contractor. This EMP will be further developed and updated following receipt of planning consent to incorporate relevant planning conditions and further details on environmental management measures to be applied during the construction phase. The EMP will be a key construction contract document, which will ensure that all mitigation measures, which are considered necessary to protect the environment, are implemented.

The EMP will be submitted and agreed with the relevant consenting bodies prior to construction commencing. The Contractor will submit all relevant information as detailed in this document to the Employer for acceptance in accordance with the contract provisions. No construction works will commence prior to the Employer’s acceptance.

The EMP will provide:

- A practical tool for managing the potential environmental impacts of the Project;
- Guidance on how to prevent and/or mitigate potential environmental impacts; and
- A Framework for measuring and improving environmental performance.

The EMP will form the minimum standard for all relevant OWL personnel, contractors and subcontractors to comply with. Contractors and subcontractors must take account of the requirements contained within this EMP when developing their task-specific Risk Assessment Method Statements (RAMS).

This EMP has been prepared in accordance with industry good practice guidance including:

- Institute for Environmental Management and Assessment (IEMA) Guidance on Environmental Management Plans (IEMA, 2008); and
- Transport Infrastructure Ireland’s (TII) Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan (2007).

1.2 Scope

The remit of the EMP is for the Project activities taking place seaward of the High-Water Mark (HWM). The EMP is applicable to all OWL personnel, contractors and subcontractors carrying out construction and operational and maintenance activities associated with the Project.

The EMP does not apply to the Oriel Wind Farm Project onshore infrastructure (i.e. landward of the HWM). a separate CEMP has been developed for these elements of the Project (see appendix 5-1: Construction Environmental Management Plan in volume 2A of the EIAR).

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

1.3 Aims and objectives

The EMP will be a key construction contract document, which will ensure that all mitigation measures and commitments made within the EIAR and Natura Impact Statement (NIS), which are considered necessary to protect the environment, during the construction and operation and maintenance of the Project, are implemented.

The principal objective of this document is to provide information on the Project and to detail appropriate measures for the avoidance, minimisation and control of adverse environmental impacts associated with the Project as identified in the EIAR.

The EMP will form part of the Offshore Works Contract (hereafter, the Contract) for the construction phase of the Project. Likewise, the relevant details included in the EMP will also be adopted during the operational and maintenance phase of the Project. The methods and principles contained herein, as well as within referenced legislative instruments and published guidance documents, will be adhered to by both OWL and Contractor personnel in developing and refining the detailed design, construction method statements and other plans relating to environmental management as required throughout construction and operation.

This version of the EMP presents minimum environmental management requirements to be adhered to by the Project.

This EMP will be updated prior to construction, during construction, and prior to commencement of the operational and maintenance phase to focus and detail key aspects of the relevant stage of the Project life cycle. Updates will incorporate any further environmental requirements and details on environmental management measures to be applied during the construction and operational and maintenance phases of the Project.

This document should be read and implemented in conjunction with the EIAR and industry good practice, published guidance documents, and other documents, referred to within the EMP.

1.4 Document structure

The EMP is divided into three parts:

- Part I – Management, Implementation and Communication: provides information on the management and implementation of the EMP, including roles and responsibilities, and lines of communication (see section 2);
- Part II – Environmental Impacts and Control Measures: provides a register of potential environmental impacts identified within the EIAR and associated control measures (see section 3); and
- Part III – Annexes: provides relevant supporting information, including the OWL Environmental Policy, reporting proformas and procedures (see section 4).

1.5 Other relevant documents

The EMP is supported by a number of management plans which focus on key aspects of the environmental management of the Project. Some of these documents are included in the EMP as an annex while other stand-alone documents and are appended separately to the EIAR. The other relevant documents are listed below:

- Marine Pollution Contingency Plan (see Annex 2);
- Marine Invasive Non-native Species Management Plan (see EIAR, volume 2A, appendix 5-3);
- Marine Megafauna Mitigation Plan (see EIAR, volume 2A, appendix 5-4);
- Marine Megafauna: Vessel Code of Conduct (see EIAR, volume 2A, appendix 5-5);

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Fisheries Management and Mitigation Strategy (see EIAR, volume 2A, appendix 5-6);
- Emergency Response Co-operation Plan (see EIAR, volume 2A, appendix 5-7); and
- Lighting and Marking Plan (see EIAR, volume 2A, appendix 5-8).

It is important to note that the EMP and the other relevant documents listed above will be developed further in preparation for construction once the detailed project design for the Project is available and any post-consent requirements become available.

At this stage, the documents are intended to capture the requirements of the EIAR to ensure that the associated environmental management measures are built into these plans, procedures and strategies from an early stage and brought forward into the further phases of construction and operation and maintenance. These documents will continuously evolve and will be reviewed at regular intervals throughout the Project, including the operational and maintenance phase. However, the commitments made in the EIAR and any associated conditions of consent or requirements agreed with the relevant authorities will always form the basis of these documents.

1.6 Description of the Project

The Project is an offshore wind farm project situated off the coast of County Louth to the east of Dundalk Bay approximately 22 km east of Dundalk town centre, 18 km east of Blackrock, 5 km south of the Cooley Peninsula and 10 km northeast of Dunany Point. It comprises 25 wind turbine generators (WTGs), one offshore substation (OSS), a single offshore cable which will extend from the offshore wind farm area to a landfall approximately 700 m to the south of Dunany Point, and a network of inter-array cabling. The closest wind turbine will be approximately 6 km from the closest shore on the Cooley Peninsula. The offshore wind farm area covers approximately 27.7 km² and is broadly hexagonal in shape with a length of approximately 5.3 km west to east and 6.7 km north to south (see Figure 1-1).

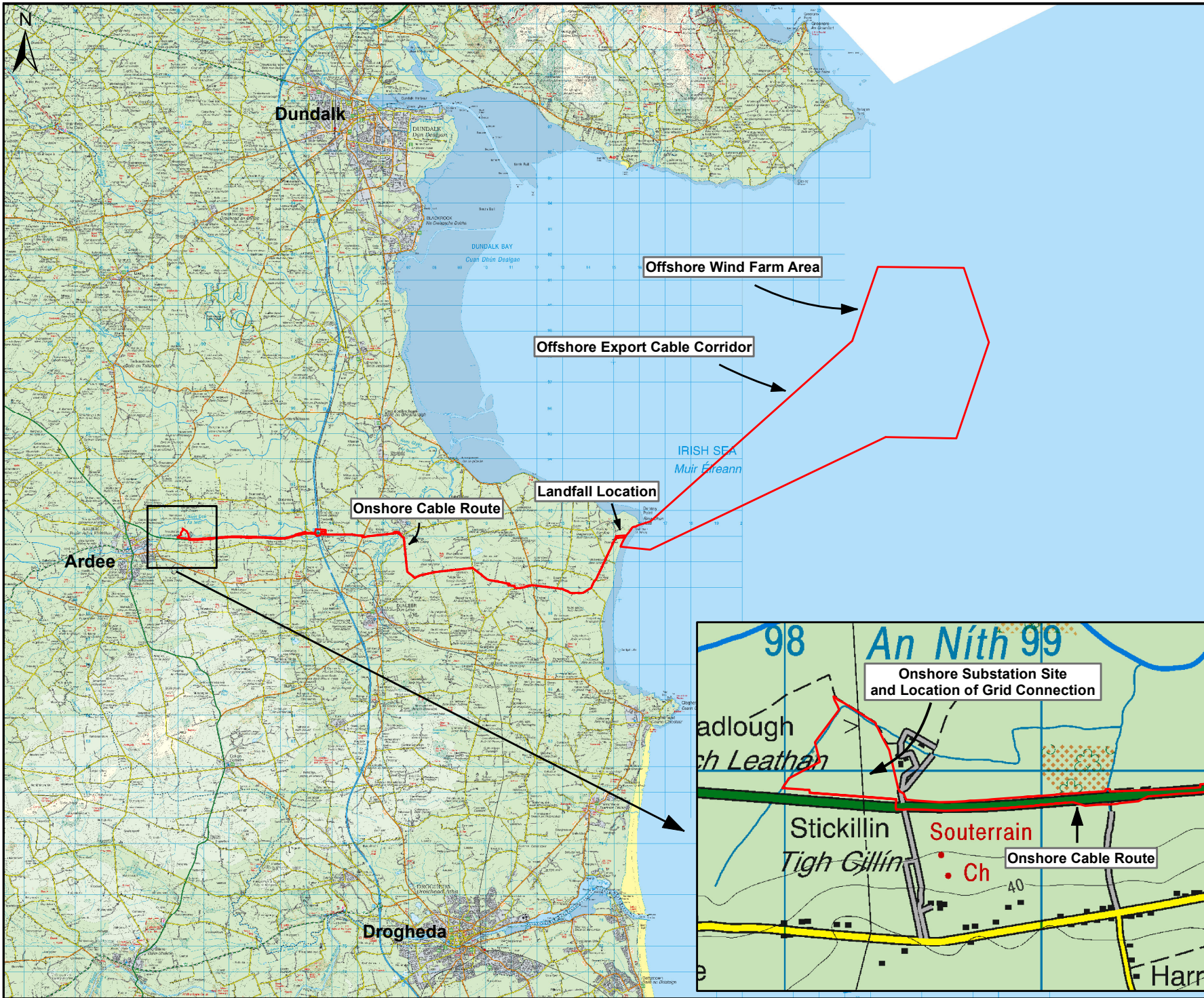
1.7 Consents

To develop the Project, OWL require a consent for the Project under the Planning and Development Act 2000, as amended.

OWL also hold a Maritime Area Consent (MAC).

A Dumping at Sea Permit will also be required for the construction of the offshore infrastructure.

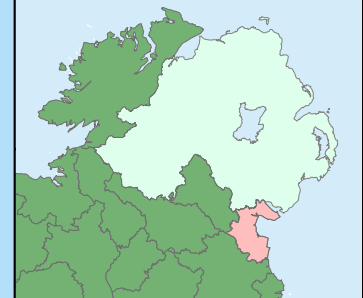
[Hold: Other consents that may be required prior to construction to be outlined here].



Legend

— Planning Application Boundary

Data Sources: OWL, OSI.



Client



Project

Oriel Wind Farm Project

**Figure 1-1:
Overview of Oriel Wind Farm
Project**

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Issue Details

Drawn By: MV	Project No. MDR1520b
Checked By: CC	File Ref:
Approved By: CC	MDR1520bArc3072P01
Scale: 1:200,000 @ A4	Projection: ITM (IRENET95)
Date: 19/04/2023	Geographic Co-ordinates: ETRS89

NOTE: 1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
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2 PART I: MANAGEMENT, IMPLEMENTATION AND COMMUNICATION

2.1 Roles and responsibilities

2.1.1 Overview

This section of the EMP outlines the roles and responsibilities of all relevant OWL personnel, Contractors and Subcontractors in relation to the EMP.

All OWL personnel, contractors and subcontractors will have a responsibility to comply with the requirements of the EMP and all relevant supporting documents. The key roles relevant to the delivery and implementation of the EMP are:

- OWL Project Manager;
- OWL Environmental Manager;
- OWL Environmental Clerk of Works (ECoW);
- OWL Community Engagement Manager;
- Contractors and Subcontractors (including Contractor Environmental Manager and Contractor Community Liaison Officer); and
- Supporting Environmental Roles.

These roles are outlined in section 2.1.2 below and will be further developed in the EMP to be submitted for approval to the competent authority post-consent. A table providing a summary of all tasks and responsibilities of OWL personnel, contractors and subcontractors will be prepared to support Part 1 prior to construction.

2.1.2 Key OWL management roles relating to environmental management

OWL Project Manager

A Project Manager for the construction phase of the Project will have overall responsibility for ensuring ongoing compliance with the EMP and all supporting documents, including the EIAR and the consents management plans listed in section 1.5, during this phase of the development. The Project Manager for the construction phase will be supported by Package Managers who will lead and manage the delivery of engineering work packages covering marine installation, turbines and transmission systems during construction. The Package Managers have similar responsibilities to the Project Manager for the construction phase, but in relation to their specific packages of work.

Similarly, the Project Manager for the operational and maintenance phase of the Project (or Operation and Maintenance Manager) will have day to day responsibility for ensuring ongoing compliance with the EMP and all supporting documents, including the EIAR and the consents Management Plans listed in section 1.5, during this phase of the Project. The Project Manager for the Operation and Maintenance phase will be supported by a Management and Supervisory Team who will lead and manage the tasks and activities associated with the operation and maintenance of the Project. This team will have similar responsibilities to the Project Manager for the Operation and Maintenance phase, but in relation to their specific areas of work.

The Project Manager is responsible for the appointment of an OWL Environmental Manager and a Community Engagement Manager to the Project.

The key responsibilities of the Project Manager relating to the environmental management of the Project are outlined below.

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Ensuring that their environmental responsibilities, as described in the EMP and supporting documents such as the consent management plans, are fulfilled for the duration of the Project;
- Establishing contractual obligations for Contractors/Subcontractors in relation to EMP;
- Responsible for ensuring that sufficient resources and processes are in place to deliver/comply with the EMP and to manage potential environmental impacts;
- Ensuring that environmental management issues are dealt with as a priority in project progress meetings and project inductions and training for the Project;
- Ensuring that all project personnel and Contractors/Subcontractors assist and support the OWL Environmental Manager (and supporting roles) where required;
- Ensuring that any corrective actions arising from environmental audits are addressed;
- Reporting to the OWL senior management; and
- Addressing Contractor and Subcontractor non-compliance.

A more detailed breakdown of the OWL Senior Management Team for the construction phase and operational and maintenance phase will be included in the EMP when the document is refined prior to commencement of construction.

OWL Environmental Manager

The OWL Environmental Manager will appoint an appropriately qualified and competent environmentalist or ecologist as the OWL ECoW to assist in the day to day environmental management and compliance of the construction phase of the Project with the EIAR, EMP and supporting environmental documentation.

The key responsibilities of the OWL Environmental Manager in relation to the EMP include the following:

- Ensuring that their environmental responsibilities, as described in the EMP and supporting documents such as the consent management plans, are fulfilled for the duration of the Project;
- Review and final approval of any revisions to the EMP and supporting documentation provided by the Contractor during construction and the continued refinement of the EMP during the operational and maintenance phase;
- Conducting environmental inspections and audits to ensure works and operations are carried out in compliance with the EIAR, EMP and supporting environmental documentation;
- Review and approval of an environmental compliance monitoring programme compiled by the Contractor prior to commencement of construction, and ensuring monitoring is taking place and environmental reports and records are generated and maintained;
- Ensuring the environmental compliance monitoring programme is expanded and carried through to the operational and maintenance phase of the Project. The OWL Environmental Manager will also ensure that any operational environmental compliance monitoring and reporting requirements are fulfilled;
- Promoting a positive environmental culture and increasing environmental awareness throughout the construction and operational and maintenance phases of the Project;
- Ensuring that, during construction, the Contractor is communicating statutory requirements and good environmental practices outlined in the EMP, principally via a schedule of toolbox talks informed by site activities and recorded non-compliance. The OWL Environmental Manager will ensure this task is also undertaken during the operational and maintenance phase of the Project;
- Attendance at project meetings, providing environmental input where required;

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Reviewing Contractor and Subcontractor documentation (including RAMS and reports) to ensure compliance with the EIAR, EMP and supporting environmental documentation; and
- Liaising with the competent authority and relevant stakeholders on matters relating to the environment, as required.

OWL Environmental Clerk of Works (ECoW)

The ECoW will be primarily a construction related position but will be called upon when necessary during the operational and maintenance phase of the Project.

The ECoW will report to the OWL Environmental Manager and will work closely with all project personnel, including the Contractor Environmental Manager on matters relating to the environment and will alert them of any environmental issues arising.

General responsibilities for the ECoW include, but are not limited to, the following:

- Ensuring that their environmental responsibilities, as described in the EMP and supporting documents such as the consent management plans, are fulfilled for the duration of the Project;
- Maintain an environmental presence during construction to ensure the Contractor and Subcontractors are fulfilling their responsibilities relating to the EIAR, EMP and supporting environmental documentation;
- Review and Quality Assurance of the EMP (and all Consents Management Plans and Programmes) provided by the Contractor;
- Provision of advice to the Project on compliance with consent conditions, where required;
- Attendance at project meetings, providing environmental input where required;
- Provide support to the OWL Environmental Manager when liaising with stakeholders as required;
- Reviewing Contractor documentation (e.g. Method Statements and Risk Assessments) to ensure compliance with the EMP and associated Annexes; and
- Carry out on-site environmental audits to monitor Contractor compliance with the requirements of the EIAR, EMP and supporting environmental documentation.

OWL Community Engagement Manager

This dedicated role is in place right through the pre-construction and construction phases of the Project to facilitate engagement with the community. The Community Engagement Manager will work closely with the Community Liaison Manager appointed by the Contractor during construction.

2.1.3 Contractors and subcontractors

OWL personnel will oversee all work carried out by Contractor and Subcontractor staff. The Contractor and all Subcontractors will adhere to the requirements of the EIAR and EMP and ensure their work is carried out in line with good environmental practice.

The Contractor will refine the EMP as required throughout the Construction phase of the Project.

During the construction phase of the Project, the Contractor will employ a Contractor's Environmental Manager with appropriate experience and expertise for the duration of the Construction phase. The Contractor's Environmental Manager will ensure that all the environmental design, control, management and mitigation measures outlined in the EIAR, EMP and supporting consent documentation are implemented on the Project. Competency of the Contractor's Environmental Manager will include a minimum of 5 years site experience which is demonstrated via submission of relevant information (e.g. CV, training records,

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

membership records) for acceptance by the OWL Environmental Manager prior to commencement of construction works.

The Contractor will also employ a Contractors Community Liaison Manager (CLM) to engage with the local community throughout the construction phase of the Project.

All contractors to OWL (and their subcontractors) will ensure that their own procedures comply with the requirements of the EIAR and EMP. Key responsibilities in relation to the EMP include the following:

- Ensuring that their environmental responsibilities, as described in the EMP and supporting documents such as the consent management plans, are fulfilled for the duration of the Project;
- Ensuring that sufficient resources and processes are in place to comply with the EMP and to manage the potential environmental impacts of their activities;
- Prepare and provide RAMS for all works and tasks prior to these being undertaken. These documents take into account and address all of the environmental aspects of any planned works and will include proposed mitigation measures. RAMS will be provided to the OWL Environment Manager at least one week in advance of such works starting;
- Implementing the required environmental control measures outlined in the EIAR, EMP and supporting environmental documentation;
- Read, understand and comply with any consent condition in relation to their activities;
- Maintain regular dialogue with the OWL Environmental Manager/OWL ECoW and inform them of any environmental risk or incident or environmental queries without delay;
- Undertake environmental monitoring, inspection and reporting, including collecting and collating all required data, as required by the OWL Environmental Manager;
- Ensure that all personnel under their control are competent and carry out their tasks in compliance with the EMP;
- Adhere to relevant environmental legislation and carry out their duties in compliance with project environmental policies, plans, procedures and rules for the Project; and
- Ensure their staff receive suitable environmental induction and training prior to undertaking any work on the Project.

This EMP will form the minimum standard for all contractors and subcontractors to comply with. Additional control measures may be identified by contractors during review of their own activities and these must be specified in their RAMS.

Contractor's Environmental Manager

The Contractor's Environmental Manager will have a minimum of 5 years of relevant site experience and will be a full-time role from the start of project contract award to ensure compliant set-up of site activities.

The Contractor's Environmental Manager will be responsible for:

- Ensuring that their environmental responsibilities, as described in the EMP and supporting documents such as the consent management plans, are fulfilled for the duration of the Project;
- The EMP and supporting environmental documentation and ensuring these documents are reviewed and refined at regular intervals throughout the construction phase of the Project. The Contractor's Environmental Manager will ensure these documents remain consistent with the EIAR and include any environmental requirements introduced through the consents process. Any revisions to the EMP and

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

supporting environmental documentation must be circulated to the OWL Environmental Manager for review and approval;

- Carrying out environmental audits, inspections and associated reporting to ensure construction works are carried out in compliance with the EIAR, EMP and any supporting environmental documentation;
- Compilation of an environmental compliance monitoring programme, conducting environmental compliance monitoring as required and compilation of relevant environmental reports and records. The environmental compliance monitoring programme and any environmental reports and records must be circulated to the OWL Environmental Manager for review and final approval;
- Developing a positive environmental culture via training and engagement with site management and, importantly, site operatives to increase awareness and promote timeous remediation/reporting;
- Communicating statutory requirements and good environmental practices outlined in the EMP, principally via a schedule of toolbox talks informed by site activities and recorded non-compliance;
- Communicating the requirements of the EMP to contractors and subcontractors;
- Monitoring and tracking the implementation of the EMP and ongoing compliance;
- Provision of advice contractors and subcontractors on compliance with the EMP; and
- Inducting site personnel on the site/works environmental policy and procedures and the requirements of the EMP.

Contractor's Community Liaison Manager (CLM)

The Community Liaison Manager will be appointed by the Contractor and will be responsible for managing tasks such as the following:

- Alerting neighbouring residents of the works or particular activities commencing in their area;
- Briefing neighbours on progress and issues likely to affect them, such as piling works resulting in noise, as necessary;
- Liaison with Louth County Council and emergency services as appropriate; and
- Liaison with local Gardaí, where necessary.

The Contractors CLM will liaise closely with the OWL Community Engagement Manger and seek their prior approval before engagement with the local community.

2.1.4 Supporting environmental roles

Retained archaeologist

The retained archaeologist will be responsible for advising on all archaeological matters relating to the Project that might impact on archaeological and cultural heritage resources. The archaeologist will be the initial point of contact for the OWL Environmental Manager on matters relating to archaeology.

The archaeologist will:

- Oversee the implementation of the Marine Archaeology Management Plan (see EIAR appendix 5-10);
- Brief the OWL Environmental Manager on the nature of any archaeological finds and features and appropriate measures for interim conservation and safe storage;

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Advise on the identification of finds and features of interest and, if possible, the character of their seabed locations;
- Advise on material conservation of any recovered finds;
- Agree appropriate actions to be taken; and
- Where appropriate, pass on all details and records associated with any discoveries to the NMS.

Marine Mammal Observer (MMO)

A qualified and experienced Lead MMO (supported by other MMOs as required) will be appointed to monitor for the presence of marine mammals in advance of and during piling activities (see also appendix 5-4: Marine Megafauna Mitigation Plan).

During daylight hours at least two dedicated and qualified MMOs will be used to search a defined mitigation zone and conduct the pre-start searches from a survey vessel prior to the start of the piling. Visual monitoring for marine mammals will be conducted from a suitable platform on the vessel such as the ship's bridge, that allows visualisation for 360-degrees, and full coverage of the mitigation zone. MMOs must concentrate their efforts on the measures to be taken in advance of and during commencement, breaks in and resumption of the sound-producing activity (NPWS, 2014).

The MMO will be equipped with reticule binoculars and marine mammal reporting forms and will be capable of determining the extent of the mitigation zone in relation to their viewing platform. A range stick may be used to aid the estimation of distance of the sighting from the survey vessel. The MMO will be responsible for recording all marine mammal sightings in the appropriate format, along with other environmental data. Together with the PAM Operator, the MMO will be responsible for compiling all data on marine mammal observations and mitigation activities for reporting to NPWS.

The MMO must be experienced and familiar with the Irish regulatory procedures and be provided with full details of all licence/consent conditions relevant to the performance of their role in advance of activity commencement, in order to ensure compliance. The MMO will have the necessary authority (or support by Works Superintendent) to implement the protocol and stop works if necessary.

Passive Acoustic Monitoring (PAM) Operator

PAM will be undertaken during pre-start, ramp-up and piling activities. A vertical PAM system will be used, as opposed to a towed system as the vessels are likely to use dynamic positioning rather than transiting during the pre-start monitoring phase.

Two dedicated and qualified PAM Operators will be responsible for deployment, maintenance and operation of the PAM hydrophone, including spares. Both PAM Operators will be suitably trained in passive acoustic monitoring and the use of PAMGuard, with training having been provided by an appropriate organisation (e.g. Seiche). PAM Operators will also have an appropriate level of field experience (i.e. a minimum of one-year PAM experience on offshore projects).

PAM Operators will be based on the vessel together with the MMO. PAM Operators will be responsible for recording all acoustic marine mammal detections in the appropriate format, and together with the MMO, will be responsible for compiling all data on marine mammal observations and mitigation activities for reporting to NPWS.

PAM Operators must be experienced and familiar with the Irish regulatory procedures and be provided with full details of all licence/consent conditions relevant to the performance of their role in advance of activity commencement, in order to ensure compliance. PAM Operators will have the necessary authority (or support) to implement the protocol and stop works if necessary.

Acoustic Deterrent Device (ADD) Operator

A trained and dedicated ADD operator will be responsible for ADD maintenance, operation and reporting. The ADD Operator will be responsible for deploying the ADD from the installation vessel, verifying the

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

operation of the ADD before deployment, operating the ADD, ensuring that batteries are fully charged and that spare equipment is available. The ADD Operator should also record and report on all ADD and piling activity so the details of any Acoustic Deterrent Devices used and any relevant observations on their efficacy can be reported as a part of the Operational/Marine Mammal Observer/Passive Acoustic Monitoring Report.

Fisheries Liaison Officer (FLO)

The primary responsibilities of the FLO include the following:

- To be the key point of contact for fisheries stakeholders;
- To identify individual commercial vessels and skippers operating in areas relevant to the Project;
- To establish and maintain a strong working relationship with the fishing industry;
- To identify potential interactions of the Project and its associated activities on fishing operations; and
- To communicate clearly and accurately with the fishing industry on behalf of the Applicant.

In addition, the FLO will be expected to undertake the following duties:

- To maintain a fisheries stakeholder database including vessel descriptions, information on fishing methods deployed, skipper's concerns and contact details;
- To organise meetings with fisheries stakeholders and maintain regular liaison with local fisheries stakeholders as required;
- To prepare and distribute information and notices with regard to the Project and related activities that could potentially interact with fisheries stakeholders;
- To gather information on the fishing activities that take place within and around the Project;
- To identify and communicate to the Applicant relevant fishermen's concerns and sensitivities in respect of the various activities associated with the Project; and
- To act as an OFLO, where appropriate.

Offshore Fisheries Liaison Officer (OFLO)

OFLOs are placed onboard main survey and construction vessels to act as the point of communication with fisheries stakeholders at sea.

The primary responsibilities of OFLOs will include:

- To maintain regular contact with the FLO and the Applicant and/or their contractors, as appropriate, concerning fishing vessel activity around the Project;
- To keep the masters and watch officers of survey and construction vessels informed of fishing vessels operating in the vicinity of their vessel's working areas, and the gears and modes of operation of such vessels;
- To communicate with the vessel master in respect of providing relevant information to fishing vessels, such as vessel locations, operations, schedule of works and advisory safety zones;
- To liaise with fishermen who may have static gear deployed in the proximity of the Project, around advisory safety zones and vessel transit routes; and
- To work with the vessel master to ensure adherence to relevant aspects of the Fisheries Management and Mitigation Strategy.

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

Marine Coordinator

Prior to commencement of construction, a Marine Coordinator will be appointed to the Project Team. The main responsibility of the Marine Coordinator will be to coordinate the day-to-day vessel activity on the Project. In addition, the Marine Coordinator will also provide a supporting role in fulfilling the requirements of the EMP and relevant consent management plans. Their key responsibilities relating to these documents include the following:

- In the event that an archaeological find is thought to have been discovered in a particular area, the Marine Coordinator will advise/inform other vessels working in proximity to this area of the potential find; and
- In the event of a pollution incident originating from a vessel or vessel related activity, the Marine Coordinator will assist with the coordination and execution of the ongoing response maintaining close communication with OWL (including the OWL Project Manager and OWL Environmental Manager/OWL ECoW) and relevant Contractors/subcontractors. Where a spill is from a project installation, the Marine Coordinator will oversee the spill response and any clean-up operations.

2.1.5 Contact details

Prior to commencement of construction, a project Contacts Sheet will be compiled which will provide a list of all OWL, Contractor/Subcontractor and relevant third-party contact details. The Contacts sheet will be made available to the Project Team and will be updated regularly throughout construction and operation. The Project Contacts sheet will include the following details as a minimum:

- Company / Organisation;
- Position;
- Name;
- Tel / Mobile No.;
- Email; and
- Office Location.

2.2 Communications and reporting

Prior to and during construction and operational and maintenance activities, OWL will hold regular progress meetings, involving the OWL Environmental Manager (and ECoW where required) and relevant Contractors and Subcontractors, including the Contractor's Environmental Manager where required. The agenda for progress meetings will include a section on environmental management and consents compliance, to be presented by the OWL Environment Manager and/or the Contractor's Environmental Manager.

Contractor risk assessment and method statements will be reviewed by the OWL Environment Manager/OWL ECoW. Contractors and/or subcontractors will be provided with copies of the relevant consents by the OWL Environmental Manager and made aware of the consent obligations associated with a particular activity.

All OWL personnel, contractors and subcontractors will be encouraged to report any environmental concerns or issues to the OWL Environment Manager/OWL ECoW immediately. A Safety and Environmental Awareness Report (SEAR) will be completed for all potential (near miss) or actual environmental incidents or emergencies which occur on site.

2.3 External communications

OWL will carry out external communications, notifications and reporting in relation to Project activities in line with the commitments made in the EIAR and in compliance with the requirements of the consent conditions.

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

2.3.1 Incident reporting

Environmental incidents

For spill/pollution reporting procedures, refer to the Marine Pollution Contingency Plan (MPCP) provided in Annex 2.

The procedure to be followed in the event of an environmental incident (excluding marine pollution incidents) is provided in Annex 3: Environmental Incident Reporting Procedure (excluding oil spills).

2.3.2 Dropped objects

All dropped objects will be recorded and reported to the competent authority using a Dropped Object Procedure Form. An indicative form is included in Annex 4 of the EMP. The final form format will be agreed prior to commencement of construction activities.

2.4 Training, auditing and change management

2.4.1 Competence, training and change management

OWL will ensure that contractors and subcontractors have appropriate environmental management resources and procedures in place. The OWL Environmental Manager will evaluate Contractor compliance with environment and consents requirements and will review appointed contractor documentation (e.g. RAMS) to ensure compliance with the EMP.

During construction, the Contractor's Environmental Manager is responsible for delivering environmental training and promoting awareness in relation to environmental management through various means including;

- Inductions;
- Toolbox talks; and
- Awareness materials.

Further details on the information to be included in these methods are shown in Table 2-1.

The Contractor's Environmental Manager will ensure that a dedicated section is included within wider contractor project inductions for the Project to cover environment and consents issues, highlighting the key environmental sensitivities and considerations. All OWL personnel, contractors and subcontractors will receive a project induction.

The Contractor's Environmental Manager will also deliver specific training on the purpose, requirements and procedures of the EMP and associated Annexes, through a series of toolbox talks. Toolbox talks will be designed to convey key points to project personnel in a clear and concise manner (IEMA, 2008). Toolbox talks will also be scheduled in advance of specific construction or operational and maintenance activities (for example, piling activities), identifying specific control measures and mitigation requirements.

In addition to presentations and talks, the Contractor's Environmental Manager will prepare a series of awareness materials, which may include training packs, posters, signs and newsletters.

Training will take place regularly throughout the lifetime of the Project in order that project personnel (including any new personnel) are kept up to date with any changes to requirements or procedures. A record of the training will be maintained by the Contractor's Environmental Manager.

The OWL Environmental Manager will assume responsibility for the provision of environmental training and promoting awareness to project personnel during the operational and maintenance phase of Project. The OWL Environmental Manger may delegate these responsibilities to a Contractor, if appropriate, during the operational and maintenance phase of the Project.

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

Table 2-1: Methods of environmental training and promoting environmental awareness.

Tools to deliver environmental training and promote environmental awareness

1 Inductions	<p>To ensure that OWL personnel and all contractor employees, sub-contractors, suppliers, and other visitors to the site are made aware of the content of the EMP that is applicable to them. Accordingly, environmental specific induction training will be prepared and presented to all categories of personnel working and visiting the site.</p> <p>As a minimum, the following information will be provided to all inductees:</p> <ul style="list-style-type: none"> • Identification of specific environmental risks associated with the work to be undertaken onsite by the inductee; • Summary of the main environmental aspects of concern at the site; • Species and/or habitat protection requirements; • Archaeological safeguarding measures, e.g. Archaeological Exclusion Zones (AEZs), contact details for the retained archaeologist; • Pollution prevention measures; • Waste management (including littering); and • Plant service and repair procedures, including the disposal of waste oils and service components. <p>Based on survey data and verification survey data collected throughout the planning and pre-commencement phases, OWL will provide an Environmental Constraints Map illustrating constraints by environmental sensitivities (e.g. archaeological exclusion zones). OWL will update the map as required, prior to commencement of the Project and will provide these maps to the Contractor.</p> <p>Informed by the Environmental Constraints Maps, the Contractor will generate an Environmental Risk Map illustrating environmentally sensitive areas and potential sources of pollution. The Environmental Risk Map will be used during the induction and prominently displayed in the relevant areas. In consultation with the OWL Environmental Manager, the Contractor will update the map as required. Any update will trigger a toolbox talk to clearly communicate the change and offer opportunity for any necessary clarifications.</p>
2 Toolbox Talks	<p>In order to provide on-going reinforcement and environmental awareness training, the above topics (see Inductions), along with any other environmental issues which arise onsite, will be discussed at regular toolbox talks.</p> <p>Toolbox talks and training will be delivered by specialist personnel onsite (e.g. Contractor's Environmental Manager) as required.</p> <p>A schedule for toolbox talks will be provided at least one week prior to commencement of works. The proposed schedule – to be considered as a live document – shall be consistent with the programme of works or operational tasks and activities. Additional toolbox talks shall be added as required based on circumstances such as unforeseen risks, repeated observation of bad practices, perceived lack of awareness, pollution event, etc.</p> <p>Specifically, as a minimum, the following environmental training will be provided by competent staff/contractors:</p> <ul style="list-style-type: none"> • Training on the use of spill kits (onboard vessels and in water), to be provided on a regular basis (to account for staff/subcontractor changes etc). <p>Other toolbox talk topics will include but are not necessarily limited to the following:</p> <ul style="list-style-type: none"> • Waste management, including waste storage, waste segregation and littering; • Control of fuel and refuelling, and fuel handling procedures; and • Ecologically and archaeologically sensitive areas. <p>A record of all toolbox talks and training will be maintained by the Contractor. All records will be made available to OWL Environmental Manager if requested.</p>
3 Awareness materials	<p>Environmental notice board(s) will be maintained and will be positioned to ensure that all operatives have the opportunity to review a notice board on a daily basis. As a minimum this will include one notice board in each vessel congregation area.</p>

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

Tools to deliver environmental training and promote environmental awareness

During construction, the environmental notice boards will be maintained by the Contractor and shall be updated at least monthly. As a minimum, the notice boards will contain:

- Description of the key environmental risks and intended risk mitigation measures, together with accompanying Environmental Constraints/Risk Map illustrating the location of the key risks and required exclusion zones/buffer zones and location of emergency response equipment; and
- Key contact numbers and responsible personnel.

Environmental labelling and signage will also be used onsite to inform project personnel of any key environmental requirements or restrictions, including information to assist good environmental practice across the site.

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

2.4.2 Monitoring and audits

The primary monitoring tool available for the Project will be the Commitments Register (see Annex 5). The Commitments Register will provide a log of all commitments made within the EIAR, planning conditions and post consent consultations to be adhered to throughout the lifetime of the Project. The purpose of the register is to provide a tool intended for use by both OWL Environment Manager and any Contractors/Subcontractors working on the Project to track compliance with commitments and to provide a record and audit trail of compliance across the construction and operational and maintenance phases of the Project. The Contractor's Environmental Manager is responsible for compiling and updating the Commitments Register prior to commencement of construction and will circulate to the OWL Environmental Manager for review and approval. The Contractor's Environmental Manager will maintain the commitments register throughout the construction phase of the Project. The OWL Environmental Manager will review and update the register prior to the operational and maintenance phase and is responsible for the maintenance of the register throughout this period.

Compliance with the EMP will be monitored through a series of audits carried out by the OWL Environment Manager and Contractor's Environmental Manager (where appropriate) throughout the construction and operational and maintenance phases. This will include a scheduled audit following the delivery of a toolbox talk, to ensure that the requirements and procedures have been understood. This may involve site visits and conversations with project personnel to monitor awareness. The OWL Environment Manager and Contractor's Environmental Manager (where appropriate) will develop specific checklists, informed by review of this EMP and Contractor RAMS, to facilitate the audit process.

The following environmental audits may be completed:

- OWL may carry out audits at any time, but at least once per quarter;
- During construction, the Contractor's Environmental Manager will undertake environmental audits on a monthly basis and will maintain a record of all completed audit forms, and records of corrective action and close outs;
- The Contractor's Environmental Manager will also undertake audits of sub-contractors, on a quarterly basis and provide an audit report to the OWL Environmental Manager within 2 weeks of the audit being undertaken; and
- The Contractor's Environmental Manager will also undertake environmental inspections on a weekly basis during construction and provide all relevant records to OWL when and as requested.

Details and findings of all monitoring and audit activities will be recorded. Any observations or corrective actions arising from audits and inspections will be addressed, with procedures updated in this EMP as required.

2.4.3 Review and change management

This EMP will be regularly reviewed over the lifetime of the Project. The Contractor's Environmental Manager will assume responsibility for the EMP during construction. Any refinement to the EMP, made by the Contractor, must be circulated to the OWL Environmental Manager for review and approval. The OWL Environment Manager will assume responsibility for the refinement of the EMP during the operational and maintenance phase of the Project. The EMP will be reviewed every six months or when any significant new information, methods, procedures or good practice becomes available. The EMP will also be updated in response to any findings or lessons learned during the construction and/or operational and maintenance phases.

A change management procedure will be followed by the Contractor's Environmental Manager in the event of a new environmental sensitivity being identified (e.g. which may be highlighted by ongoing monitoring surveys or in the event of a new environmentally designated area being proposed) during construction. Such a procedure is recommended in the IEMA Practitioner Guide (IEMA, 2008). Following notification of a change, the Contractor's Environmental Manager will initiate a process of assessment of potential impacts and, if necessary, update the EMP. The Contractor's Environmental Manager will maintain a record of

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

changes and the review process. The updated EMP will be submitted to the competent authority for approval.

The OWL Environmental Manger will assume these responsibilities during the operational and maintenance phase of the Project.

3 PART II: ENVIRONMENTAL IMPACTS AND CONTROL MEASURES

3.1 Environmental impacts and control measures

This section of the EMP translates the commitments made in the EIAR into a format which can be developed into practical implementation by contractors and subcontractors. This is in accordance with the IEMA Practitioner Guide, which states that “the overall objective of an EMP is to provide a continuous link or ‘bridge’ between the design phase of a Project, conditions attached to consents, Project construction, and into the operational phase” (IEMA, 2008).

An outline Commitments Register is included in Annex 5 of the document. This includes designed in and management measures (controls) (i.e. the measures included in the Project), mitigation measures and monitoring commitments specified as specified in the EIAR relating to the offshore infrastructure (see volume 2B and volume 2C: chapter 25: Noise and vibration, chapter 27: Seascape and Landscape and Visual Impact Assessment; and chapter 30: Resource and Waste Management). This commitment register (version 01) will be updated in accordance with relevant consent conditions should consent be granted. The Commitments Register will form part of OWL and Contractor compliance checks throughout the project phases of the Project.

3.2 Management of key environmental aspects and compliance obligations

3.2.1 Marine species

A Mammal and Megafauna Mitigation Plan (see appendix 5-4) and Marine Mammal and Megafauna Protocol: Code of Conduct (see appendix 5-5) will be implemented.

In the unlikely event that a wildlife incident occurs, such as injury to a marine mammal, or an observed fish or bird mortality, the Contractor or responsible member of staff will notify the OWL Environmental Manager or ECoW as soon as practicable, with details of the activity taking place, photographs, and weather conditions present as a minimum. The OWL Environment Manager or OWL ECoW will follow up with the relevant regulatory authority, where appropriate.

Measures for minimising disturbance to rafting seabirds from construction vessels. Measures will include:

- Use of existing navigation approaches to port;
- Avoid over-revving engines to minimise noise; and
- Avoidance of rafting seabirds en-route between work areas and port, or within the offshore wind farm area and offshore cable corridor, achieved through briefing (e.g. toolbox talks) of vessel crew about the purpose and implications of the vessel management practices.

3.2.2 Marine archaeology

The procedures to be followed on discovering any marine archaeology during the construction and operational and maintenance phases of the Project are set out in EIAR appendix 5-10: Marine Archaeology Management Plan. This includes a Written Scheme of Investigation and a Protocol for Archaeological Discoveries similar to that set out by The Crown Estate in 2014 in the UK.

3.2.3 Other marine users

The approach to management and mitigation of potential impacts on other marine users are set out in the Commitments Register of in the following EIAR appendices;

- Lighting and Marking Plan (appendix 5-8); and

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Fisheries Management and Mitigation Strategy (appendix 5-6).

Specifically measures covered by these plans include:

- The adoption of advisory safety zones;
- Appropriate notification of activities to other marine users;
- A clear process of marine coordination of all vessels and vessel activity;
- Appropriate marking and lighting of vessels;
- Appropriate marking and lighting of the Project; and
- Vessel transit planning, commercial fisheries relations and management of commercial fisheries interactions.

3.2.4 Marine pollution prevention and contingency planning

Measures will be adopted to ensure that the potential for release of pollutants from construction, operational and maintenance and decommissioning plant is minimised. These will include as a minimum:

- Designated areas for refuelling where spillages can be easily contained;
- Storage of chemicals in secure designated areas in line with appropriate regulations and guidelines;
- Double skinning of pipes and tanks containing hazardous substances; and
- Storage of these substances in impenetrable bunds.

In the event of a pollution incident, construction personnel should refer immediately to the Marine Pollution Contingency Plan included in Annex 2 of the EMP for details on appropriate response procedures.

3.2.5 Marine invasive non-native species

The procedure to be followed for the management of marine invasive non-native species during the construction and operational and maintenance phases of the Project is set out in the Marine Invasive Non-native Species Management Plan (see appendix 5-3 of the EIAR).

3.2.6 Resource and waste management

During construction, OWL require that all Contractors (and their Sub-Contractors) produce a Waste Management Plan (WMP), providing details of all waste management procedures for their activities and details of expected waste arisings (including marine litter) and proposed procedures for waste management. The Contractor's Environmental Manager will be responsible for the compilation of this document. The WMP(s) will include the following aspects as a minimum:

- Analysis of the waste arisings/material (including marine litter) surpluses;
- Specific waste/marine litter management objectives for the Project;
- Methods proposed for prevention, reuse and recycling of wastes and marine litter;
- Material handling procedures; and
- Proposals for education of workforce and plan dissemination programme.

The following Contractor requirements will be addressed in the WMP (s);

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

- Meet all relevant legislative and EIAR requirements and obtain whatever additional permits and licences are necessary in relation to waste management and marine litter;
- Communicate the requirements of the WMP(s) to all personnel during their induction and ensure all operatives on site attend waste and marine litter reduction toolbox talks to increase awareness of recycling/waste reduction;
- Handle waste materials, marine litter and refuse so that it causes the least practicable damage and disturbance;
- Place all waste in suitably labelled secure containers;
- Check the contents of the site waste and recycling containers on a weekly basis. Non-compliance will be included in site environmental meetings and appropriate actions taken (e.g. a toolbox talk to all site operatives);
- Reduce waste and marine litter through waste elimination, reduction and recycling measures where feasible;
- Contain, recover and bring all relevant waste and/or marine litter back to shore and dispose of such waste in accordance with the legal waste management framework;
- Transfer of waste, marine litter or refuse will only be conducted by licensed waste carriers and waste treatment and waste disposal will be conducted by licensed and permitted waste management companies, in compliance with applicable waste legislation;
- Be compliant with and use the current version of Transfrontier Shipment of Waste Regulations where waste is being exported by Contractors (or their subcontractors). Export of waste will also be in line with the principles of the Basel Convention of 1989, which was agreed internationally to avoid hazardous waste being unfairly exported to developing countries; and
- All qualifying vessels must demonstrate compliance with MARPOL Annex V (and equivalent current Irish merchant shipping regulations) for waste management generally and MARPOL Annex IV (and equivalent current Irish merchant shipping regulations) for sewage waste specifically.

The Contractor's Environmental Manager will provide the WMP(s) to the OWL Environmental Manager for acceptance prior to the commencement of works.


The OWL Environmental Manager will be responsible for revising this document in preparation for the operational and maintenance phase of the Project.

4 PART III: ANNEXES

The following documents are included in Annexes 1-5 of this EMP:

- Annex 1: Environmental Policy;
- Annex 2: Marine Pollution Contingency Plan (MPCP);
- Annex 3: Environmental Incident Reporting Procedure;
- Annex 4: Dropped Objects Procedure Form; and
- Annex 5: Commitments Register.

ANNEX 1: ENVIRONMENTAL POLICY

	HSSE Policy			
	Document ID	PWD-HSSE-POL-0001		
	Scope	Department	Revision	Status
	Parkwind	HSSE	5.0	Final
			Date	26/01/2021

As a leading company in the development and generation of green and sustainable energy, Parkwind strives to be an industry leader in the management of Health, Safety, Security and Environmental risks, and the optimization of improvement opportunities throughout everything it does.

The Parkwind HSSE philosophy is based on the following principle:

“No one gets hurt, nothing gets damaged and all risks are controlled and managed”



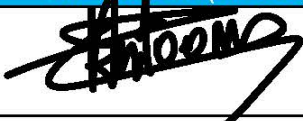
Health, Safety, Security and Environmental protection is a prime business objective, and it is the responsibility of top management and supervision to ensure the principles and the commitments stated within this Policy, are consistently achieved throughout.

To ensure common understanding, approach, and achievement of HSSE goals, Parkwind will actively encourage all partners, contractors, and subcontractors to adopt all HSSE Policy principles and commitments throughout their engagement.

To enable the HSSE principles to be achieved, Parkwind shall commit to ensuring:

- a HSSE Management System is established, implemented and maintained with the purpose of eliminating hazards and reducing HSSE risks;
- the provision of safe and healthy working conditions for the prevention of work-related injury and ill-health and to avoid security breaches, damage and/or pollution to the environment;
- HSSE objectives and targets are set, monitored, and reviewed to ensure compliance is being maintained;
- As a minimum, compliance with all applicable legal and other requirements and obligations;
- implementing known and approved industry standards and leading the way if such standards are not available;
- consult and ensure the active participation of all employees and contractor personnel on all HSSE related arrangements and issues and empower them to take action to stop the works if they feel the risks involved to be unacceptable;
- provide suitable and sufficient HSSE information, instruction and training to enable all personnel to carry out their job competently;
- continuous monitoring, review, and improvement of HSSE performance and the effectiveness of this HSSE Policy and HSSE Management System

The Executive Management of Parkwind underwrites this Policy, commits to provide adequate and appropriate resources and will ensure this Policy is properly communicated and understood by all.

	Fr��ois Van Leeuw (co-CEO)	Eric Antoons (co-CEO)
		

ANNEX 2: MARINE POLLUTION CONTINGENCY PLAN



ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report Annex 2: Marine Pollution Contingency Plan (MPCP)

MDR1520B
EIAR – App. 5-2: Annex 2
A1 C01
March 2024

ORIEL WIND FARM PROJECT- MARINE POLLUTION CONTINGENCY PLAN

Contents

	Acronyms.....	iii
1	INTRODUCTION	1
	1.1 Purpose.....	1
	1.2 Scope.....	1
	1.3 Document revision	1
2	SUMMARY OF MEASURES, MITIGATION AND MONITORING INCLUDED IN THE EIAR	2
3	ROLES AND RESPONSIBILITIES.....	3
	3.1 Oriel Windfarm Limited.....	3
	3.1.1 OWL Project Manager	3
	3.1.2 Marine Coordinator	3
	3.2 Contractor and subcontractors.....	3
	3.3 Spill response contractor.....	4
4	POTENTIAL SPILL SOURCES AND CONTROL MEASURES.....	5
	4.1 Potential spill sources	5
	4.2 Pollution sources and risk assessment.....	5
	4.2.1 Tier classification	5
	4.2.2 Potential spill scenarios and control measures	7
	4.3 Estimated oil and chemical inventory.....	13
5	RESPONSE PROCEDURES AND CHECKLISTS.....	14
	5.1 Pollution incident response procedure.....	14
	5.1.1 Introduction	14
	5.1.2 Spills originating from a vessel – response and notification overview.....	14
	5.1.3 Spills originating from an installation associated with the Project – response and notification overview	14
	5.1.4 Spills within port.....	15
	5.2 Reporting requirements.....	15
6	REFERENCES.....	16

Figures

	Figure 4-1: Tier definition.....	6
--	----------------------------------	---

Tables

	Table 2-1: Measures included in the Project relevant to the MPCP.....	2
	Table 4-1: Potential spill scenarios and control measures for the Project.	8
	Table 4-2: Types of hydrocarbons and chemicals to be used.....	13

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Acronyms

Term	Meaning
COSHH	Control of Substances Hazardous to Health
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
ERCoP	Emergency Response Cooperation Plan
HNS	Hazardous and Noxious Substances
IFO	Intermediate Fuel Oil
IRCG	Irish Coast Guard
ITOPF	International Tanker Owners Pollution Federation
MGO	Marine Gas Oil
MPCP	Marine Pollution Contingency Plan
NCP	National Contingency Plan
OSS	Offshore Substation
OWL	Oriel Windfarm Limited
POLREP	Initial Pollution Report
SOPEP	Ship-board Oil Pollution Contingency Plan
SDS	Safety Data Standard
WTG	Wind Turbine Generator

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

1 INTRODUCTION

1.1 Purpose

This Marine Pollution Contingency Plan (MPCP) provides the pollution response arrangements for the Oriel Wind Farm Project (hereafter referred to as the "Project") during both the construction and operational and maintenance, and decommissioning phases of the offshore infrastructure. The overall objective of the MPCP is to outline procedures to safeguard the marine environment and respond to an accidental pollution event during the construction and operation of the Project.

1.2 Scope

This MPCP has been prepared to supplement the Environmental Management Plan (EMP) (appendix 5-2: Environmental Management Plan) and applies to relevant marine works undertaken on the Project.

The MPCP outlines procedures to protect project personnel and to safeguard the marine environment in the event of an accidental pollution event arising from offshore operations relating to the Project.

The MPCP presents the following information and guidelines to aid a response in the event that there is an accidental release of pollutants into the marine environment resulting from works related to the Project:

- A risk assessment of the potential sources and likelihood of a pollution incident (section 4.2); and
- Oil spill response procedures and actions (see section 5.1).

It should be noted that the information and guidelines presented will be reviewed in consultation with the Irish Coast Guard (IRCG) and resubmitted for approval prior to commencement of the construction.

All Oriel Windfarm Limited (OWL) personnel and Contractors (including their Sub-Contractors) involved in the Project must comply with the OWL MPCP.

1.3 Document revision

OWL will refine the MPCP prior to commencement of construction and review this plan on a six-monthly basis thereafter.

The OWL MPCP will be further refined in preparation for the operational and maintenance phase of the Project.

The Department of Transport have prepared guidance on navigation risk and emergency response assessments and is currently in draft and undergoing consultation with the relevant stakeholders (as of February 2024). The Applicant will consider the final guidance once published and ensure that the MPCP complies with the guidance and in particular with regard Oil/HNS Spill Contingency Plans.

2 SUMMARY OF MEASURES, MITIGATION AND MONITORING INCLUDED IN THE EIAR

The measures included in the Project as identified in the EIAR relevant to the MPCP are summarised in Table 2-1.

Table 2-1: Measures included in the Project relevant to the MPCP.

Measures	Justification
<p>An Environmental Management Plan (EMP) will be implemented during the construction, operational and maintenance and decommissioning phases of the Project. The EMP will include mitigation/monitoring measures and commitments made within the EIAR and a MPCP which will include key emergency contact details (e.g. Environmental Protection Agency (EPA)). The EMP is included in appendix 5-2: Environmental Management Plan.</p>	<p>Measures will be included to ensure that the potential for release of pollutants from construction, operational and maintenance and decommissioning phases are minimised. These will likely include:</p> <ul style="list-style-type: none"> • Designated areas for refuelling where spillages can be easily contained; • Storage of chemicals in secure designated areas in line with appropriate regulations and guidelines; • Double skinning of pipes and tanks containing hazardous substances; and • Storage of these substances in impenetrable bunds. <p>In this manner, accidental release of contaminants from vessels will be strictly controlled, thus providing protection for marine life across all phases of the Project.</p> <p>Any accidental pollution of the marine environment will be immediately reported to the IRCG and to any other local authorities who are likely to be affected by such pollution.</p>

3 ROLES AND RESPONSIBILITIES

3.1 Oriel Windfarm Limited

OWL has overall operational and financial responsibility for any oil or chemical spill originating from the Project.

3.1.1 OWL Project Manager

The relevant OWL Project Manager (for each phase of the Project) is responsible for the overall implementation of the MPCP. Their main duties include:

- Developing and maintaining the OWL MPCP;
- Ensuring the development of relevant Contractor MPCPs, which will include adequate pollution prevention and spill response procedures, and the review and implementation of same;
- Managing ongoing Contractor spill response and ensuring Contractor compliance with the OWL MPCP;
- Liaising with statutory bodies in the event of a spill such as the IRCG and any local authorities who are likely to be affected; and
- Requiring that sufficient resources and processes are in place to deliver/comply with the OWL MPCP.

Following completion of construction, the OWL Project Manager will ensure the OWL MPCP is reviewed and amended as necessary for the operational and maintenance phase of the Project.

The OWL Project Manager may call upon the OWL Environmental Manager/OWL ECoW to support in the fulfilment of OWL duties relating to the OWL MPCP at any time.

OWL will review and update the OWL MPCP as necessary during the construction phase of the Project (e.g. to take into account any new information, as outlined in section 1.3). In the event of any oil or chemical spill to the marine environment, no matter how small, an internal meeting will be held following the close out of the incident to review lessons learned, with the OWL MPCP and Contractor MPCP updated as required.

OWL will ensure the appointment of a Marine Coordinator and a dedicated Spill Response Contractor for the Project.

3.1.2 Marine Coordinator

Prior to commencement of construction, a Marine Coordinator will be appointed to the Project Team. In addition to coordinating day-to-day vessel activity on the Project, the Marine Coordinator will be the main point of contact in the event of emergency and pollution incidents.

In the event of a pollution incident originating from a vessel or vessel related activity, the Marine Coordinator will assist with the coordination and execution of the ongoing response maintaining close communication with OWL (including the OWL Project Manager and OWL Environmental Manager/OWL ECoW) and relevant Contractors/subcontractors. Where a spill is from a project installation, the Marine Coordinator will oversee the spill response and any clean-up operations.

3.2 Contractor and subcontractors

Offshore construction and operation and maintenance work will be primarily conducted by Contractors. OWL require that all relevant Contractors/Subcontractors are familiar with the OWL MPCP.

OWL also require that relevant Contractors/Subcontractors identified by the OWL Project Manager prepare their own Contractor MPCP prior to commencement of any activities onsite. The Contractor MPCP will be submitted to OWL for review and approval and will be reviewed on a six-monthly basis thereafter. Any

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

updates to the Contractor MPCP must be submitted to OWL for review and approval prior to implementation onsite.

The Contractor MPCP will be maintained in line with the OWL MPCP and revised accordingly.

The Contractor MPCP will comply with the OWL MPCP (which applies within the Project site boundary) and include their own spill response arrangements.

All Contractors/Subcontractors will be required to be familiar with the OWL MPCP and the Contractor MPCP and develop their own pollution prevention and contingency plans for approval by OWL; each must be compliant with the information as set out in the OWL MPCP.

All contractors will be responsible for ensuring relevant personnel are trained in pollution prevention and response and that appropriate pollution response equipment is available on-board vessels.

Relevant Contractors/Subcontractors will ensure that each vessel under their control has a Ship-board Oil Pollution Contingency Plan (SOPEP) (MARPOL 73/78 Annex I, reg. 26) or equivalent vessel-specific spill plan (for spills that originate from a vessel, or from operations taking place on a vessel related to the activity that they are contracted to carry out).

In the event of an incident onsite, the relevant Contractor/Subcontractor will ensure that the Marine Coordinator is made aware of all details associated with the incident and any proposed response procedures.

3.3 Spill response contractor

OWL require that Contractors engage an oil spill response contractor prior to construction commencing.

Oil spill response contractors should be capable of providing response capabilities commensurate with the potential worst-case scenario associated with the Contractor's scope of works.

During the operational and maintenance phase, an oil spill response contractor will be engaged for the offshore maintenance operations being undertaken.

4 POTENTIAL SPILL SOURCES AND CONTROL MEASURES

4.1 Potential spill sources

An inventory of the types of pollutants (and particularly hydrocarbons – oils and lubricants) that will be used during the construction and/or operation of the Project, together with relevant preventative measures will be set out in the relevant Contractors MPCP. This inventory of potential pollutants will inform the consideration of spill response strategies in the Contractor MPCP.

The Contractor MPCP will include detail on the volumes, types and sources of each of these pollutants (again with the focus on hydrocarbons) that are expected to be used based on the known requirements, as a basis for a more detailed risk assessment of potential pollution events and spill response strategies.

During construction and operation, the Marine Coordinator will develop and keep up to date a register of all vessels involved in offshore operations. This register will document the types and quantities of hydrocarbons carried on board (i.e. bunkers, lubrication oils and hydraulic oils).

Construction and operational works will be conducted in such a manner as to minimise the risk of spillage and pollution. Potential risks and control measures, based on the hydrocarbon and chemical inventories on the vessels and offshore installations, will be identified through the use of planning tools such as:

- Programme review meetings (involving all relevant contractors);
- Pre-job meetings to review the final work programme(s) in detail; and
- Hazard and risk identification to test the work programme for likelihood and severity of all identified risks and to identify appropriate control measures.

The risk assessment and management measures are set out in section 4.2 of the OWL MPCP and will include consideration of vessel refuelling at sea with due regard to industry standards and relevant legislation. Vessel refuelling will take place in port or under permit from the IRCG at sea.

4.2 Pollution sources and risk assessment

4.2.1 Tier classification

The strategy that will be adopted in the event of an oil spill will depend upon several factors:

- The size and characteristics of the spilled oil or pollutant;
- It's probable and predicted behaviour in the sea;
- Consideration of the environmental sensitivities in the path of the spill; and
- Consideration of the consequences of the different response options on the environment as a whole if they were to be adopted.

The severity of a spill depends on its size, the complexity of the response and the potential consequences for people, environment, assets, reputation, and for the economy.

By adopting a tiered approach and identifying the tier level, the appropriate resources can be mobilised to combat the pollution event.

For general oil spill response, it is common to divide levels of response into three tiers, according to the severity of the spill and the resources required to combat it. The three tiers are commonly defined as follows (Figure 4-1):

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

- **Tier 1:** response is that which is immediately available on site, geared for the most frequently anticipated oil spill;
- **Tier 2:** spills are generally those beyond the capability of an authority or operator acting alone. The response is led by a harbour or local authority, depending on the extent of on-water and shoreline pollution, and may involve joint marine and coastal operations; and
- **Tier 3:** spills are generally more complex, of longer duration and higher impact, and beyond the response capability of the affected or threatened local authorities, harbour authority or facility operator. The response is nationally led and may involve a range of government departments. Coordination and oversight are by the IRCG, who may call on national resources and request international support. The National Contingency Plan (NCP) provides the framework for all Tiers but focuses on contingencies for Tier 3.

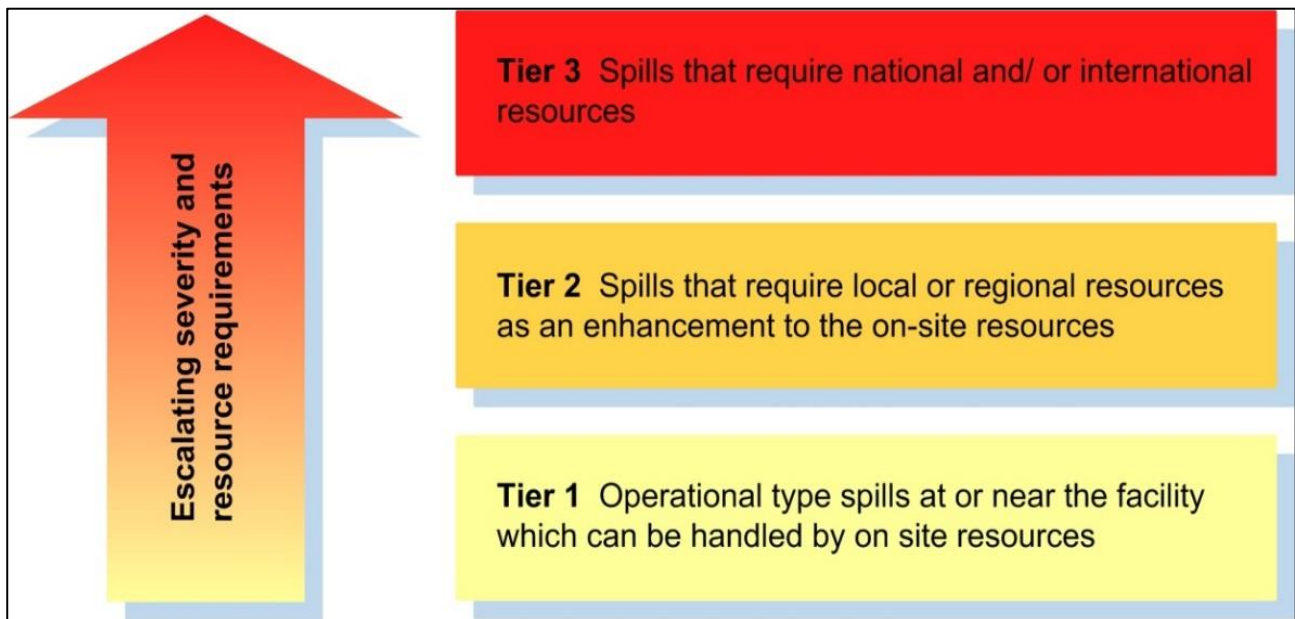


Figure 4-1: Tier definition.

The conventional view of a Tier 3 scenario is one involving an exceptionally large volume of spilled oil, for example, from a major ship-sourced accident, an oil well blowout, or other such rare but highly significant event. However, a Tier 3 response may also be required for more modest volumes, perhaps where Tier 2 arrangements may be largely absent or overwhelmed, highly sensitive areas threatened, or highly-specialised strategies being required that are not available locally.

The NCP does not define rigid criteria for initiating a national (Tier 3) response. It is the responsibility of the Ship Casualty and Pollution Manager (or authorised officer in their absence) to assess the situation and take the necessary action. However, as guidance, a Tier 3 incident may be initiated if:

- A shipping casualty gives rise to the risk of significant pollution requiring a salvage operation;
- A ship-source spill of oil or hazardous and noxious substance (HNS) at sea requires the deployment of sea borne or air-borne equipment to contain, disperse or neutralise it;
- An offshore unit spills oil or HNS at sea requiring the deployment of sea borne or airborne equipment to contain, disperse or neutralise it, which the operator of the unit does not have the capacity to deploy;

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

- A spill of oil or HNS within the area of a harbour authority requires the deployment of national resources under national control to contain, disperse or neutralise it, or other action beyond the capacity of the harbour authority and local authority concerned; or
- A local authority requests the deployment of national shoreline equipment under national control because the action is beyond the capacity of the local authority after allowing for any mutual support arrangements with neighbouring authorities.

If it is not considered necessary to mount a national (Tier 3) response, the IRCG may in any case assist by deploying resources from the national stockpile to support the responder.

It is not possible to predict with certainty the Tier level outcome of any spill, and under a worst case spill scenario, it is possible (although considered highly unlikely) that a Tier 2 or Tier 3 response could be required.

The specific risk assessment for the Project is provided in Table 4-1 and shows that small operational type spills (e.g. Tier 1 category) are the most likely. However, the risk assessment cannot predict with certainty the Tier level outcome of any spill, and under a worst-case spill scenario, it is possible (although considered highly unlikely) that a Tier 2 or Tier 3 response could be required.

The main source of hydrocarbons associated with the Project will be Marine Gas Oil (MGO) or Intermediate Fuel Oil (IFO) used to fuel construction and operation/maintenance vessels. The quantities of MGO and IFO will be limited to the bunkering capabilities of the vessels. The potential worst-case spill scenario associated with the Project would be a complete loss of fuel inventory from two large vessels as a result of collision, or where a passing vessel collides with a wind farm vessel or structure. It must be noted that for larger vessels, even following a significant collision, it is unlikely that all fuel onboard would enter the water due to location of bunker tanks.

Once spilled in the marine environment, oil immediately begins to undergo weathering, a term used to describe many natural, physical, chemical and biological changes. The changes that the oil undergoes will often influence the effectiveness of response options. Prevailing meteorological and oceanographic conditions, as well as the type of oil spilled, will determine its ultimate fate.

4.2.2 Potential spill scenarios and control measures

Table 4-1 below sets out a risk assessment for potential spill scenarios and control measures to minimise or eliminate the risks for the Project (construction and operational and maintenance phase as appropriate). The table will be further refined prior to commencement of construction and adapted accordingly into the relevant Contractors MPCP. The risk assessment will also be reviewed and, if necessary, updated following completion of the construction phase, to ensure that it remains relevant for the operational and maintenance phase of the Project.

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Table 4-1: Potential spill scenarios and control measures for the Project.

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
Hydrocarbons Intermediate Fuel Oil (IFO) Marine Gas Oil (MGO) (Diesel)	Vessel refuelling Loss of fuel during vessel to vessel refuelling at sea or refuelling at port.	Contractors will undertake operationally necessary refuelling at sea as required, to fuel vessels that are extremely restricted in their capability to leave station to take on fuel, such as jack ups. Preparation and review of task-specific risk assessments, method statements and fuel transfer planning tools and checklists. Refuelling of vessels or equipment offshore will, where practicable, only commence during daylight and in good weather conditions. Refuelling operations will be planned in advance.	Low	Tier 2
	Equipment refuelling Loss of fuel during refuelling of equipment (on vessel or on turbine/offshore substation site (OSS)).	Fuel transfer operations will be carefully conducted under the supervision by an appointed responsible person on board (e.g. Chief Engineer) and in accordance with each vessel's stipulated procedure and checklist. A bunker plan will be developed and posted on the Bridge and in the Machinery Control Room. Before fuel transfer starts a meeting will be held with all ship staff involved in the operation and the following subjects should be discussed, as a minimum: <ul style="list-style-type: none"> • Bunker plan, including any anticipating changes; • Risk assessment; • Individual roles and responsibilities in the process; • Emergency situations; and • Bunkering checklists. Only hoses fitted with non-return valves will be used for the offshore transfer of fuel or other fluids. Comply with all relevant legislation, permits and guidance relating to the environment they are working in and the activity they are engaged in. Appropriate training of personnel and supervision of activity. A visual lookout will be made at all times during fuel transfer operations to verify hose integrity throughout the transfer and in order to spot any leaks immediately. All storage tanks and/or areas will be banded to at least 110% of the total oil storage inventory volume. Personnel will be trained in spill prevention awareness, and in the use of spill kits. Spill kits will be readily available for mopping up any minor spills. Regular inspection and maintenance of equipment. The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc. special oil gutter ways etc. will be regularly inspected and drained or cleaned. Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
	Vessel to vessel collision Loss of fuel from collision between two vessels.	All vessels will comply with project specific navigational requirements to prevent vessel to vessel collision and vessel to structure allision which will be set out in advance of construction and available prior to any Contractor activity onsite. Vessels and Marine Coordinators will also comply with all marine coordination measures to prevent collisions which will also be set out prior to commencement of activities onsite.	Very low	Tier 2
	Vessel to structure allision Loss of fuel from allision between vessel and structure (e.g. wind turbine).		Very low	Tier 2
	Vessel stranding/grounding Loss of fuel due to vessel stranding/grounding.	All vessels will comply with project specific navigational requirements to prevent vessel stranding/grounding which will be set out in advance of construction and available prior to any Contractor activity onsite.	Very low	Tier 2
	Failure of plant or equipment Release of fuel due to failure of plant or equipment.	All equipment will be operated and maintained in good order and in accordance with legal requirements. All plant and equipment will only be operated by adequately trained and competent personnel. All storage tanks and/or areas will be bunded to at least 110% of the total oil storage inventory volume. The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc. special oil gutter ways etc. will be regularly inspected and drained or cleaned. Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1
	Spillage during use of equipment Small spills during equipment operation.	Preparation and review of task-specific risk assessments and method statements. Personnel will be trained in spill prevention awareness, and in the use of spill kits. Spill kits will be readily available for mopping up any minor spills. The means of preventing any fuel oil from escaping into the bilges such as trays beneath oil pumps, heaters etc. special oil gutter ways etc. will be regularly inspected and drained or cleaned. Oil pressure pipes and fuel oil pipes and fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1
Lubricating Oil	Incident Loss of lubricating oil from collision between two vessels, or allision between	All vessels will comply with project specific navigational requirements to prevent vessel to vessel collision, vessel to structure allision and vessel stranding/grounding which will be set out in advance of construction and available prior to any Contractor activity onsite. Vessels and Marine Coordinators will also comply all marine coordination measures to prevent collisions which will also be set out prior to commencement of activities onsite.	Very low	Tier 2

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
	vessel and structure, or stranding/grounding of vessel.			
	Leakage within WTGs Leakage of lubricating gear oil or grease within nacelle.	All equipment will be operated and maintained in good order and in accordance with legal requirements. WTG nacelle frame typically will be designed and manufactured with a bund incorporated which can hold the full oil content of the gearbox in the event of a catastrophic failure. Turbine sensors will enable early detection of loss of fluid and leaks. There is a banded area within the nacelle to collect lubricating oil in the unlikely event of a leak. Gear oil seals will be routinely checked during planned maintenance programmes.	Low	Tier 1
	Leakage within OSSs Leakage of transformers.	All equipment will be operated and maintained in good order and in accordance with legal requirements. Transformer oil seals will be routinely checked during planned maintenance programmes. Environmental mitigation measures, such as transformer bunding to contain any oil leaks, will be fully operational prior to the OSS transportation stage. The OSSs drainage system will collect waste water as well as connecting banded areas. The drainage system will incorporate an oil separation unit which separates any contamination from the collected water. The collected water is re-circulated through the oil separator with clean water being discharged in accordance to restricted limits and any contaminants securely contained and stored for transportation to shore and controlled processing and/or disposal.	Low	Tier 1
	Spillage during use of equipment Small spills during equipment operation.	Preparation and review of task-specific risk assessments and method statements. Personnel will be trained in spill prevention awareness, and in the use of spill kits. Spill kits will be readily available for mopping up any minor spills. Fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1
	Failure of plant or equipment Release of lubricating oil due to failure of plant or equipment.	All equipment will be operated and maintained in good order and in accordance with legal requirements. All plant and equipment will only be operated by adequately trained and competent personnel.	Low	Tier 1
Hydraulic Oil	Incident Loss of hydraulic oil from collision between two vessels, or collision between vessel and structure, or	All vessels will comply with project specific navigational requirements to prevent vessel to vessel collision, vessel to structure collision and vessel stranding/grounding which will be set out in advance of construction and available prior to any Contractor activity onsite. Vessels and Marine Coordinators will also comply all marine coordination measures to prevent collisions which will also be set out prior to commencement of activities onsite.	Very low	Tier 1

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
	stranding/grounding of vessel.			
	Leakage within WTGs	All equipment will be operated and maintained in good order and in accordance with legal requirements. Turbine sensors will enable early detection of loss of fluid and leaks. There is a banded area within the nacelle to collect lubricating oil in the unlikely event of a leak. Oil seals will be routinely checked during planned maintenance programmes.	Low	Tier 1
	Failure of plant or equipment Release of hydraulic oil due to failure of plant or equipment(e.g. hydraulic hoses).	All equipment will be operated and maintained in good order and in accordance with legal requirements. All plant and equipment will only be operated by adequately trained and competent personnel. All storage tanks and/or areas will be banded to at least 110% of the total oil storage inventory volume.	Low	Tier 1
	Spillage during use of equipment Small spills during operation.	Preparation and review of task-specific risk assessments and method statements. Personnel will be trained in spill prevention awareness, and in the use of spill kits. Spill kits will be readily available for mopping up any minor spills. Fittings will be inspected regularly to ensure that leaks are detected at an early stage and rectified.	Low	Tier 1
Chemicals	Incident Loss of chemical load from vessel collision/allision, or stranding/grounding of vessel.	All vessels will comply with project specific navigational requirements to prevent vessel to vessel collision, vessel to structure allision and vessel stranding/grounding which will be set out in advance of construction and available prior to any Contractor activity onsite. Chemicals will, where relevant, be selected, stored and managed in accordance with the relevant regulations and legislation.	Very low	Tier 1
	Leakage within WTG Leakage of coolant or transformer fluid within nacelle.	All equipment will be operated and maintained in good order and in accordance with legal requirements. Turbine sensors will enable early detection of loss of fluid and leaks. There is a banded area within the nacelle to collect lubricating oil in the unlikely event of a leak. Equipment including hoses, pipes and seals will be routinely checked during planned maintenance programmes. Chemicals will, where relevant, be selected, stored and managed in accordance with the relevant regulations and legislation.	Low	Tier 1
	Spillage during use Spillage of paints, paint thinners,	Preparation and review of task-specific risk assessments and method statements. Personnel will be trained in the correct handling and use of chemicals. Personnel will be trained in spill prevention awareness, and in the use of spill kits.	Low	Tier 1

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

Potential Pollutant	Spill scenario	Control measures	Likelihood with control measures	Likely Tier
	solvents, cleaning fluids etc during use.	<p>Spill kits will be readily available for mopping up any minor spills.</p> <p>All hazardous substances will have a safety data sheet (SDS) which is intended to provide procedures for handling or working with that substance in a safe manner. The handling and use of chemicals and hazardous substances will be in compliance with the information on the SDS.</p> <p>Control of Substances Hazardous to Health (COSHH) assessments should be conducted for development specific hazardous substances.</p> <p>Segregated storage facilities will be used to control the separation of hazardous substances.</p> <p>Chemicals will, where relevant, be selected, stored and managed in accordance with relevant regulations and legislation.</p>		

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

4.3 Estimated oil and chemical inventory

The type of oils and chemicals that may be used during the construction and operational and maintenance phases of the Project are listed in Table 4-2. The different types of oils have been allocated to one of four groups as defined by International Tanker Owners Pollution Federation (ITOPF) classification to indicate their level of persistence in the environment. Group 1 oils are considered to be least persistent (i.e. if spilled, they will dissipate and not form a surface emulsion) whilst Group 4 oils are very persistent (i.e. if spilled, they will not evaporate or disperse).

Information on the volume of these hydrocarbon types involved in the Project activity at any one time will be dependent on the specific vessels available to undertake the activities. Key Contractors will provide vessel data sheets for each of the main construction vessels to OWL. In the event of a pollution incident this information will be made available to the primary responder as required.

Table 4-2: Types of hydrocarbons and chemicals to be used.

Type of oil	ITOPF oil group	Comments
Intermediate Fuel Oil (IFO)	Group 3	Used by vessels involved in construction, operational and maintenance activities and for jack-up vessels.
Marine Gas Oil (MGO) / Diesel	Group 2	Used by vessels involved in construction and operational and maintenance activities.
Lubricating oil	Group 3	Used by vessels involved in construction and operational and maintenance activities.
Hydraulic oil	Group 2/3	Used within plant equipment
Chemicals	N/A	Various chemicals used routinely throughout construction and operational and maintenance activities

5 RESPONSE PROCEDURES AND CHECKLISTS

5.1 Pollution incident response procedure

5.1.1 Introduction

This section sets out the procedures to be adhered to in the event of a marine pollution incident.

The Project requires that any spill (actual or probable) into the marine environment, no matter how small, and no matter whether it arises from Project activities or not, is responded to, following the procedures set out below, whilst a Contractor is working on the Project.

Priority in the event of a spill is to take measures to ensure the safety of personnel and the offshore installations and vessels, and to prevent escalation of the incident.

Where a spillage is part of a wider emergency, such as fire or explosion, reference should also be made to the Emergency Response Co-operation Plan (ERCoP) (see volume 2A, appendix 5-7: ERCoP).

5.1.2 Spills originating from a vessel – response and notification overview

The processes set out below should be followed in the event of a marine pollution (hydrocarbon or chemical) incident where a spill originates from a vessel, from vessel related activity, or from a Contractor owned asset prior to transfer of ownership to the Project, during construction or operation or maintenance of offshore installations.

- When a spill is observed, it will be reported to the Contractor Vessel Master;
- The Contractor Vessel Master will report the spill as soon as it is safe to do so, to the IRCG via phone, and then to the Marine Coordinator (who in turn will notify OWL Project Manager) via phone. Verbal notification should be followed up when practicable with the submission by the vessel master of an Initial Pollution Report (POLREP) via email (or fax) to the IRCG, in accordance with Standard Operating Procedure 01-2020 (IRCG, 2020a), and the Marine Coordinator (who in turn will submit to the OWL Project Manager); and
- The Contractor responsible for the vessel from which the spill has originated will engage the vessel SOPEP or equivalent vessel-specific spill plan and assume primacy for the incident ensuring ongoing reporting on spill status, as necessary, and initiating response or clean-up operations as required. The relevant Contractor, as the primary responder, will request support from a specialist spill response contractor as required. The Marine Coordinator will provide a supporting role and assist with communication throughout an incident.

In the very unlikely event that a regional or national (Tier 2 or 3) response is required, the IRCG may take charge of the situation and implement the National Maritime Oil/Hazardous and Noxious Substances (HNS) Spill Contingency Plan (IRCG, 2020b).

[Hold: detailed procedures on actions to be taken by vessels contracted to the wind farm, OWL and contractors to be developed in agreement between the contractor and OWL.]

5.1.3 Spills originating from an installation associated with the Project – response and notification overview

When a spill is observed, it will be reported to the Marine Coordinator.

The Marine Coordinator will then report the spill to the IRCG via phone and the OWL Project Manager by phone. Verbal notification should be followed up when practicable with the submission of a POLREP via email (or fax) to the IRCG by the Marine Coordinator.

ORIEL WIND FARM PROJECT - MARINE POLLUTION CONTINGENCY PLAN

The Marine Coordinator will engage the MPCP and assume primacy of the incident. The Marine Coordinator will be responsible for ongoing reporting on spill status and will coordinate an initial response with the spill observer who may utilise spill kits on the offshore installation. The primary responder will request support from a specialist spill response contractor as required.

As set out in Table 4-1, the type and volume of hydrocarbons and chemicals on the wind turbines and OSSs are not considered sufficient to warrant a Tier 2 or Tier 3 response. It is therefore not anticipated that the implementation of the National Maritime Oil/HNS Spill Contingency Plan (Irish Coast Guard, 2020b) or for the IRCG to take command of an incident from an offshore installation. However, the IRCG will be kept informed by verbal communications and through ongoing submission of the POLREP.

[Hold: detailed procedures on actions to be taken by vessels contracted to the wind farm, OWL and contractors to be developed in agreement between the contractor and OWL.]

5.1.4 Spills within port

For Port/Harbour Spills the Contractor will contact the relevant Port/Harbour Authority in the first instance and follow all port processes as advised. The Contractor MPCP will include details of all ports/harbour authorities of relevance. In advance of commencement of any works onsite, the Contractor will provide details of the main ports/harbour authorities anticipated to be used whilst working on the Project. All incidents that occur whether in the Project working area or not, must be notified to OWL Project Manager and Marine Coordinator.

5.2 Reporting requirements

It is required that all employees, contractors and subcontractors will report all accidents, incidents and hazards to the OWL Project Manager and Marine Coordinator.

Significant or potentially significant incidents (including marine incidents) are required to be immediately reported and escalated through the business management chain within 30 minutes of their occurrence or when safe to do so.

Various information will be requested by the IRCG when receiving reports of marine pollution. This will support the incident appraisal process and help determine potential response actions at the national level.

Those reporting should endeavour to have as much information as possible available but should not delay reporting if some information is absent or unknown. The initial pollution report (POLREP) form is provided in Annex 1 of the Emergency Response Cooperation Plan (ERCoP) (see appendix 5-7: ERCoP).

References

Irish Coast Guard (IRCG) (2020a) Assessment and notification of a pollution incident, Standard operating procedure 01-2020, Available at: <https://www.gov.ie/en/publication/79e5d-national-maritime-oilhns-spill-contingency-plan-nmoscp/> [Accessed 21/03/2021].

Irish Coast Guard (IRCG) (2020b) National Maritime Oil/HNS Spill Contingency Plan, 2020, Available at: <https://www.gov.ie/en/publication/79e5d-national-maritime-oilhns-spill-contingency-plan-nmoscp/> [Accessed 21/03/2021].

ANNEX 3: ENVIRONMENTAL INCIDENT REPORTING PROCEDURE

In the event that OWL personnel, contractors and/or subcontractors identify an environmental incident, they will notify the OWL Environmental Manager/OWL ECoW as soon as practical via telephone. The Contractor's Environmental Manager will obtain full details of the incident and subsequently prepare an incident report. They will assess if the incident results in a non-compliance event and inform the OWL Environmental Manager and OWL ECoW.

The OWL Environmental Manager will inform the competent authority of any relevant incidents of non-compliance with the EMP, providing the incident report when available, and liaising with the competent authority on actions to be taken.

OWL personnel, contractors and subcontractors will work together to review and update procedures to prevent similar incidents from reoccurring.

Depending on the nature of the incident, the following stakeholders may be informed:

- Environmental Protection Agency (EPA) and EPA 24-hour emergency incident line 0818 33 55 99;
- Inland Fisheries Ireland (IFI) and IFI 24-hour pollution line 0818 34 74 24;
- Emergency Services;
- Local Authority Environmental Officers;
- An Garda Síochána;
- National Parks and Wildlife Services; and
- The Irish Coast Guard.

The Contractor will complete a Safety and Environmental Awareness Report (SEAR) for all potential (near miss) or actual environmental incidents or emergencies which occur on site.

Significant or potentially significant incidents (including marine incidents) are required to be immediately reported and escalated through the business management chain within 30 minutes of their occurrence or when safe to do so.

ANNEX 4: PROPOSED DROPPED OBJECTS REPORTING FORM

Identity of Reporter	
Full Name:	Date of Report:
Company:	Position/Title:
Contact Telephone No:	Contact E-Mail:
Operator/Organisation/Company Responsible for Incident:	
Name of Installation or Vessel responsible for the loss or dumping of the material	
Location/position of the installation/vessel at the time of the loss or dumping:	
Latitude:	Longitude:
Date of Loss:	Time (24hours):
Weather conditions at time of loss/dumping:	Depth of Water (m):
Wind Direction (0-360 degree):	Wind Speed (knots):
Beaufort Scale:	Wave Height (metres):
Tide Rate:	Tide Direction:
Number of hours before/after High Water item was lost:	
4.1.1.1 Materials lost or dumped – provide as full a description as possible –i.e. clearly highlight if synthetic materials involved, are there wires involved, dimensions of materials etc. – If photo's available please attach separately. Specify the purpose of the function of the materials	
Dimensions of the object:	
Estimated clearance over object (including calculation methodology):	
If the materials are resting on the seabed are they lying wholly within a Safety Zone? Yes or No:	
Are the materials likely to float on sea surface or in water column? Yes or No	
If the answer to question above is YES - are materials likely to reach shore or cross a median line? - please specify	

ORIEL WIND FARM PROJECT- ENVIRONMENTAL MANAGEMENT PLAN

<p>Reasons the loss or dumping (if Force Majeure is invoked please clearly state this):-</p>
<p>Are there plans to recover the materials? – if yes, specify details including anticipated timescales for the recovery operation. If there are no plans to recover the materials the reason for this must be clearly specified. Please detail if any further consent is required to undertake remediation action.</p>
<p>Please provide details of any interim mitigation measures put in place to deal with immediate risks to navigation:</p>
<p>Details of any radio Navigational Warnings and/or Notices to Mariners:</p>
<p>What are considered to be the risks and dangers to other users of the sea as a result of the lost or dumped materials not being recovered?</p>
<p>Any further information that may be useful:</p>

ANNEX 5: COMMITMENTS REGISTER

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
1	Marine Process	Chapter 7	Scour protection	In the absence of scour protection, there is potential for scour pits to develop around foundations. This may result in the release of sediment into the water column and a change to seabed habitat in the vicinity of the foundation. Where required, scour protection will be installed as described in volume 2A, chapter 5: Project Description.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
2			Cables	The cables will be buried below the seabed wherever possible, to a minimum burial depth of 0.5 m and a maximum burial depth of up to 3 m. The appointed contractor will be required prior to the construction phase to submit details on the cable specification and installation methodology. This will include details on the cable laying, including geotechnical data, cable laying techniques and a cable burial risk assessment. Also, in advance of any cable repair, the contractor will be required to submit details on the parameters of the repair or reburial activities and the proposed methodology.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Cable specification and installation methodology	Applicant/ Contractor
3			Cables	The offshore cable will be installed through the intertidal zone using open cut trenching methods. The material will be excavated and reinstated on a layer-by-layer basis to minimise impacts on sediment structure and profile.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
4			EMP MPCP	An Environmental Management Plan (EMP) (see volume 2A, appendix 5-2: Environmental Management Plan) will be implemented during the construction, operation and maintenance and decommissioning phases of the Project. The EMP includes Project specific measures and commitments and a Marine Pollution Contingency Plan (MPCP (see volume 2A, appendix 5-2 (Annex 2)). Measures also include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds within the Project Infrastructure, i.e. WTG and offshore sub-station to ensure that the potential for release of pollutants from construction, operational and maintenance, and decommissioning is minimised. In this manner, accidental release of contaminants from vessels and Project infrastructure will be strictly controlled, thus providing protection for marine life across all phases of the Project development.	To be updated	Construction Operation & Maintenance Decommissioning	EMP, MPCP	Applicant/ Contractor
			ERCoP	This plan describes the actions to be taken in an emergency during both construction and operation, details the resources available to support those actions, and provides emergency contact details.	To be updated	Construction Operation & Maintenance Decommissioning	ERCoP	Applicant/ Contractor
5			MINNSMP	A Marine Invasive Non-Native Species Management Plan (volume 2A, appendix 5-3 Marine Invasive Non-Native Species Management Plan) will be implemented. The plan outline measures to ensure vessels comply with the International Maritime Organisation (IMO) ballast water management guidelines, it will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as measures to be adopted in the event that a high alert species is recorded.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	MINNSMP	Applicant/ Contractor
6	Benthic and Intertidal Ecology	Chapter 8	EMP MPCP	An Environmental Management Plan (EMP) (see volume 2A, appendix 5-2: Environmental Management Plan) will be implemented during the construction, operation and maintenance and decommissioning phases of the Project. The EMP includes Project specific measures and commitments and a Marine Pollution Contingency Plan (MPCP (see volume 2A, appendix 5-2 (Annex 2)). Measures also include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds.	To be updated	Construction Operation & Maintenance Decommissioning	EMP, MPCP	Applicant/ Contractor
7			Pre-Construction Survey	A pre-construction survey will be undertaken within the Project offshore wind farm area and offshore cable corridor to identify any areas of reef habitat (particularly Modiolus beds and S. spinulosa reef habitats). This will include a drop-down video survey to determine the extent, distribution and quality/condition of any reef. Should reef areas be identified during pre-construction surveys, appropriate measures will be agreed with regulatory and nature conservation bodies to avoid direct impact on these features. Where possible, features will be avoided by layout refinement of foundations and cables.	To be updated	Pre-Construction Construction		Applicant/ Contractor
8			MINNSMP	A Marine Invasive Non-Native Species Management Plan (volume 2A, appendix 5-3 Marine Invasive Non-Native Species Management Plan) will be implemented. The plan outline measures to ensure vessels comply with the International Maritime Organisation (IMO) ballast water management guidelines, it will consider the origin of vessels and contain standard housekeeping measures for such vessels as well as measures to be adopted in the event that a high alert species is recorded.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	MINNSMP	Applicant/ Contractor
9			Re-Instatement of Rock	Reinstatement of rock in the intertidal zone following cable installation. Any cut rock will be placed back on top of the cable to backfill the trench.	To be updated	Construction		Applicant/ Contractor
10	Fish and Shellfish	Chapter 9	EMP	An Environmental Management Plan (EMP) (see volume 2A, appendix 5-2: Environmental Management Plan) will be implemented during the construction, operational and maintenance and decommissioning phases of the Project. The EMP includes project specific measures and commitments and a Marine Pollution Contingency Plan (MPCP). Measures also include designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds.	To be updated	Construction Operation & Maintenance Decommissioning	EMP, MPCP	Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
11			Cables	<p>The cables will be buried below the seabed wherever possible, to a minimum burial depth of 0.5 m and a maximum burial depth of up to 3 m. The final selected installation method and target burial depth will be defined prior to construction based on a detailed cable burial risk assessment.</p> <p>The appointed contractor will be required prior to the construction phase to submit details on the cable specification and installation methodology. This will include a detailed cable laying plan, including geotechnical data, cable laying techniques and a cable burial risk assessment.</p> <p>In advance of any cable repair, the contractor will prepare details on the cable repair methodology repair or reburial activities setting out the parameters of the repair or reburial activities and the proposed methodology.</p>	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Cable specification and installation methodology	Applicant/ Contractor
12			Piling Operations	During piling operations, soft starts will be used (in accordance with international best practices for underwater noise, which includes the 'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' (NPWS, 2014)). This will involve the implementation of lower hammer energies (i.e. approximately 10-15% of the maximum hammer energy) at the beginning of the piling sequence before energy input is 'ramped up' (increased) over time to required higher levels.	To be updated	Construction	'Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters' (NPWS, 2014)	Applicant/ Contractor
13	Marine Mammals and Megafauna (including Subsea Noise)	Chapter 10	EMP MPCP	<p>An Environmental Management Plan (EMP) (see volume 2A, appendix 5-2: Environmental Management Plan) will be implemented during the construction, operational and maintenance, and decommissioning phases of the Project. The EMP includes Project mitigation/monitoring measures and commitments and a Marine Pollution Contingency Plan (MPCP) which includes key emergency contact details (e.g. Environmental Protection Agency (EPA)).</p> <p>The EMP includes mitigation such as designated areas for refuelling where spillages can be easily contained, storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds. In this manner, accidental release of contaminants from vessels will be strictly controlled, thus providing protection for marine life across all phases of the Project.</p>	To be updated	Construction Operation & Maintenance Decommissioning	EMP, MPCP	Applicant/ Contractor
14			MMMP	<p>A Marine Megafauna Mitigation Plan (MMMP) (see volume 2A, appendix 5-4: Marine Megafauna Mitigation Plan) will be implemented prior to construction.</p> <p>The MMMP sets out the measures to apply in advance of and during piling activity, including the implementation of a mitigation zone, and monitoring by MMOs and Passive Acoustic Monitoring (PAM).</p>	To be updated	Pre-Construction Construction	MMMP	Applicant/ Contractor
15			Piling Operations	<p>During piling operations, soft starts will be used, following NPWS (2014) guidelines. This will involve the implementation of lower hammer energies (i.e. approximately 10-15% of the maximum hammer energy) at the beginning of the piling sequence before energy input is 'ramped up' (increased) over time to required higher levels (also known as a soft-start).</p> <p>The Applicant commits to implementing phased piling alongside other adjacent offshore wind farms in the western Irish Sea as part of a Piling Strategy. This strategy will be prepared post consent and will set out measures for collaboration with other projects to reduce the potential for an in-combination effect. This will include a stepped strategy which follows the mitigation hierarchy - avoid, reduce, mitigate. Consequently, if phased piling is required a collaborative approach will be explored and information presented to demonstrate how a phased piling approach can contribute to the reduction in underwater sound from piling.</p>	To be updated	Construction	MMMP	Applicant/ Contractor
16			Geophysical Surveys	Geophysical surveys undertaken during the operational and maintenance phase will adopt similar measures as for piling operations, including the implementation of an approved MMMP and Vessel Code of Conduct (see volume 2A, appendix 5-4: Marine Megafauna Mitigation Plan and volume 2A, appendix 5-5: Marine Megafauna: Vessel Code of Conduct). Measures include the use of a mitigation zone around operations, within which MMOs and PAM will ensure that no marine megafauna are present in the vicinity of the geophysical survey vessel, and the use of a soft-start to survey operation, where possible.	To be updated	Operation & Maintenance	MMMP, Marine Megafauna: Vessel Code of Conduct	Applicant/ Contractor
17			Marine Megafauna: Vessel Code of Conduct	<p>A Vessel Code of Conduct (see volume 2A, appendix 5-5: Marine Megafauna: Vessel Code of Conduct) will be issued to all Project vessel operators, requiring them to:</p> <ul style="list-style-type: none"> • Refrain from approaching animals in the water; • Keep vessel speed to a minimum, including near haul-outs; and • Avoid abrupt changes in course or speed should marine mammals approach the vessel to bow-ride. <p>The Marine Megafauna: Vessel Code of Conduct will be adhered to at all times.</p>	To be updated	Pre-Construction Construction	Marine Megafauna: Vessel Code of Conduct	Applicant/ Contractor
18			Cables	<p>The cables will be buried below the seabed wherever possible, to a minimum burial depth of 0.5 m and a maximum burial depth of 3 m. The appointed contractor will be required prior to the construction phase to submit details on the cable specification and installation methodology. This will include details on the cable laying, including geotechnical data, cable laying techniques and a cable burial risk assessment.</p> <p>Also, in advance of any cable repair, the contractor will be required to submit details on the parameters of the repair or reburial activities and the proposed methodology.</p>	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Cable specification and installation methodology	Applicant/ Contractor
19			ADD	Mitigation will also be applied by use of an Acoustic Deterrent Device (ADD) to minimise impacts arising from injury to marine megafauna from underwater noise during pile-driving by deterring animals to move beyond the predicted injury zone.	To be updated	Construction		Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
20	Offshore Ornithology	Chapter 11	EMP	An Environmental Management Plan (EMP) will be implemented during the construction, operational and maintenance, and decommissioning phases of the Project (see volume 2A, appendix 5-2: Environmental Management Plan). The EMP includes a plan for minimising disturbance to rafting seabirds from construction vessels. Measures include: <ul style="list-style-type: none"> • Use of existing navigation approaches to port; avoid over-revving engines to minimise noise; and • Avoidance of rafting seabirds and seaducks en-route between work areas and port, or within the offshore wind farm area and offshore cable corridor, achieved through briefing (e.g. toolbox talks) of vessel crew about the purpose and implications of the vessel management practices. 	To be updated	Construction Operation & Maintenance Decommissioning	EMP	Applicant/ Contractor
21			EMP MPCP	The EMP includes a Marine Pollution Contingency Plan (MPCP) which will include key emergency contact details (e.g. Environmental Protection Agency (EPA)). Measures for the MPCP include: <ul style="list-style-type: none"> • Designated areas for refuelling where spillages can be easily contained; • Storage of chemicals in secure designated areas in line with appropriate regulations and guidelines; and • Double skinning of pipes and tanks containing hazardous substances, and storage of these substances in impenetrable bunds. 	To be updated	Construction Operation & Maintenance Decommissioning	EMP, MPCP	Applicant/ Contractor
22	Commercial Fisheries	Chapter 12	Notification of Construction, Maintenance and Decommissioning Activities	Notification of construction, maintenance and decommissioning activities, including the nature, timing and location of activities, with details of any associated safety zones and advisory clearance distances, via Notices to Mariners.	To be updated	Construction Operation & Maintenance Decommissioning	FMMS	Applicant/ Contractor
23			Liaison with Fishing Fleets	Ongoing liaison with all fishing fleets (including regular Notice to Mariners).	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	FMMS	Applicant/ Contractor
24			Marine Coordination	Appropriate marine coordination to ensure risks associated with construction, maintenance and decommissioning vessels are minimised.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
25			Guard Vessels	Use of guard vessels, where appropriate.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
26			Aid to Navigation LMP	Implementation of Aids to Navigation (marking and lighting) (including temporary Aids to Navigation on any partially constructed turbines) see volume 2A, appendix 5-9: Lighting and Marking Plan (LMP).	To be updated	Construction Operation & Maintenance	LMP	Applicant/ Contractor
27			Marine Safety Zone	The Applicant will seek to maintain Marine Safety Zones of 500 m in radius around individual structures undergoing installation or decommissioning. Advisory Marine Safety Zones of 500 m will be implemented for incomplete structures at which construction activity may be temporarily paused. During the operational and maintenance phase, the Applicant will also seek to maintain Marine Safety Zones of 500 m in radius around infrastructure undergoing major maintenance (for example a blade replacement). The Applicant will implement an advisory clearance distance of 500 m in radius around cable installation vessels and cable repair vessels.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
28			FMMS	Volume 2A, appendix 5-7: Fisheries Management and Mitigation Strategy will be implemented in consultation with local fishing interests (and other interests as appropriate). The FMMS is prepared in accordance with available good practice guidance and with relevant policy set out in the NMPF (DHLGH, 2021). Current best practice guidance with regard to fisheries liaison management and mitigation in respect of offshore wind farm projects is represented by the Seafood/ORE Engagement in Ireland (DHLGH, 2023) and the UK Fishing Liaison with Offshore Wind and Wet Renewables (FLOWW) Group (FLOWW, 2014; 2015). The FMMS includes: <ul style="list-style-type: none"> • Details of roles and responsibilities, including Applicant responsibilities and details of the roles of the Fisheries Liaison Officer, and Fisheries Industry Representative; • Details of protocols for communication and information transfer; and • Measures to encourage co-existence and management measures, including those outlined above. 	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	FMMS	Applicant/ Contractor
29	Shipping and Navigation	Chapter 13	Notice to Mariners	Promulgation of information and warnings through Notice to Mariners and other appropriate Maritime Safety Information (MSI) dissemination methods. Throughout the life of the wind farm, regular liaison meetings to be held between project, sub-contractors and local marine stakeholders such as local harbour authorities, pilots, fishermen, and leisure groups such as yacht clubs. Information and warnings concerning any restrictions to navigation, including the imposition of any safety zones to be promulgated by Radio Navigation Warning Signals (NAVAREA 1 or HYDROLANT), Notice to Mariners, Notice to Airmen Publication.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	EMP	Applicant/ Contractor
30			Multi-Channel VHF	The Project to provide continuous watch by multi-channel VHF, including Digital Selective Calling (DSC).	To be updated	Construction Operation & Maintenance Decommissioning	EMP	Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent				Mechanism for Implementation				
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
31			Safety Zones	The applicant will seek to maintain advisory marine safety zones of 500 m radius to be implemented around WTGs and other offshore infrastructure undergoing construction/decommissioning or major maintenance activities. A rolling advisory clearance distance of 500 m in radius to be implemented around the cable laying vessel.	To be updated	Construction Operation & Maintenance Decommissioning	EMP	Applicant/ Contractor
32			Aid to Navigation LMP	Marker buoys and/or other AtoN will be deployed on a device-specific basis. AtoN Marking and Lighting Plan to be submitted to IRCG/CIL for approval and implementation prior to construction, as detailed in appendix 13-1: Navigation Risk Assessment. The plan will consider the necessary AtoN requirements (including specification, location and maintenance requirements) for the construction, operation and decommissioning phases of the Project. The AtoN management plan will be agreed prior to commencement of construction and should be developed in conjunction with IALA (2021) G1162 The Marking of Man-Made Offshore Structures.	To be updated	Construction Operation & Maintenance Decommissioning	LMP	Applicant/ Contractor
33			Vessel Traffic Monitoring	Project to undertake vessel traffic monitoring by: AIS, VHF, Closed Circuit Television (CCTV) with all Project-related vessels throughout all phases.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
34			Safety documents	The following safety documents will apply: Emergency Response Co-operation Plan (ERCoP): An ERCoP has been prepared and will be agreed with the IRCG and other key stakeholders as detailed in appendix 13-1: Navigation Risk Assessment prior to construction. The ERCoP (see volume 2A, appendix 5-8: Lighting and Marking Plan) details the emergency response planning requirements for the Project (at all stages) as directed by the IRCG and includes: <ul style="list-style-type: none"> Organisational information including roles and responsibilities for emergencies, equipment and facilities and liaison arrangements between the Applicant and IRCG; Search and Rescue information including role and responsibility of SAR coordinators, IRCG, communication requirements, SAR facilities (primary – e.g. SAR helicopters, secondary e.g. RNLI lifeboats), and medical advice / assistance; SAR Exercise requirements; Support Arrangements including shoreside reception arrangements, procedures on informing next of kin, etc. Additional Information including duties and functions of various participants in SAR operations; Project specific information (e.g. size, type and configuration of the infrastructure including support and maintenance vessels, details of proposed project activities for all phases, project SAR equipment and emergency response, etc.); and Emergency Action Card detailing emergency contact details, wind farm summary, WTG specific information, communications, monitoring, shutdown procedures, personal SAR location devices, mass evacuation details – etc. Navigation Safety Management System (NSMS): A NSMS will collate documents for management of navigational safety relevant to the marine activities from multiple sources. This includes documents created by the Project and those in place for third parties such as construction and maintenance contractors. As such the NSMS is not a singular plan but should include documentation related to: <ul style="list-style-type: none"> Navigational safety measures during construction phase; Navigational safety measures during operations and maintenance; Procedures for Project vessels when at the offshore wind farm area and in port; Details on promulgation of information; and Emergency Response procedures (links to ERCoP – see above). 	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	ERCoP, LMP	Applicant/ Contractor
35			Guard Vessels	Provision of a guard vessel to monitor third party vessel traffic and intervene with warnings, as necessary. Guard vessels will be used during the construction/decommissioning phases on a 24-hour basis (including the cable laying), and non-standard or major maintenance during the O&M phase, to patrol the offshore wind farm area and offshore cable corridor, monitor the effectiveness of control measures and advise any passing vessels of the works being conducted.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
36			Cable Burial Risk Assessment	A cable burial risk assessment will be conducted which will ensure cables are adequately buried so as not to become a navigation hazard, based on seabed characteristics and the density and distribution of vessel traffic. Where cable protection is used, this should not exceed a 5% reduction in under keel clearance (UKC). The cable burial risk assessment should be undertaken in line with the Carbon Trust Cable Burial and Risk Assessment Guidance (2015) for commercial shipping, fishing vessels and recreational craft based on: <ul style="list-style-type: none"> Baseline vessel traffic analysis: Geospatial temporal/spatial analysis, shipping intensity, vessel type, size and characterisation; Anchor / gear size / type by vessel usage and map present/future vessel anchorages/anchoring and fishing activity in proximity to the offshore cable corridor (including water depth, bed type ((geology, seabed features, bathymetry, sediments) and relevant MetOcean information); Probabilistic modelling of anchor drag/likelihood/extent for commercial vessels based on historical incident data, recovery time, penetration, drag speed and holding ground; Probabilistic modelling of fishing gear drag/likelihood/extent based on fishing gear type, incident data, recovery time, drag speed and holding ground; Qualitative recreational vessel cable burial risk assessment; and Based on results of the assessment identify the burial depth requirement for the Project cables. 	To be updated	Pre-construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
37			Subsea Cables	Subsea cables to be buried to Marine Survey Office agreed depth which provides sufficient protection without compromising UKC.	To be updated	Construction Operation & Maintenance Decommissioning	Cable specification and installation methodology	Applicant/ Contractor
38			IMO Convention compliance	Compliance with IMO Conventions including the International Regulations for Preventing Collisions at Sea (COLREGs) and SOLAS (IMO, 1974).	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
39			FMMS	Production of a Fisheries Management and Mitigation Strategy (FMMS) (volume 2A, appendix 5-7: Fisheries Management and Mitigation Strategy) in line with best practice guidance with regard to fisheries liaison management and mitigation and in consultation with local fishing interests (see chapter 12: Commercial Fisheries).	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	FMMS	Applicant/ Contractor
40			WTG Blade Air Draught Clearance	WTG blade air draught clearance of at least 22 m above High Water Mark (HWM).	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
41			Charting	Charting of offshore structures, inter-array cables and offshore cable and landfall infrastructure on navigation charts. Inform UKHO and the Kingfisher Information Services Cable Awareness (KISCA) accordingly.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
42			Line of Orientation	Agree lines of orientation with IRCG. WTG and OSS layout plan to be agreed with IRCG/CIL prior to construction.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
43	Aviation, Military and Communications	Chapter 14	Warning Lights	All significant peripheral structures, to the highest point of the structure, will be fitted with high intensity warning lighting. Specific requirements are listed in IAA ASAM No: 018 (IAA, 2015a).	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
44			LMP	Implementation of a Lighting and Marking Plan (LMP) (see appendix 5-10 in volume 2A of the EIAR) setting out specific requirements in terms of aviation lighting to be installed on the turbines. The LMP will be prepared in consultation with the IAA, DoD and IRCG.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	LMP	Applicant/ Contractor
45			Information on Locations, Heights and Lighting Status of the Wind Turbines	The IAA will be informed of the locations, heights and lighting status of the wind turbines, including estimated and actual dates of construction and the maximum heights of any construction equipment to be used, prior to the start of construction, to allow inclusion on Aviation Charts and in the IAA IAIP.	To be updated	Pre-Construction Construction		Applicant/ Contractor
46			Aeronautical Information Circulars	During the operational phase, the Project operator will issue, as necessary, requests to the IAA to submit Aeronautical Information Circulars (AIC) in the event of any failure of aviation lighting. Any light which fails shall be repaired or replaced as soon as is reasonably practicable. An alerting system for light failure will be put in place, such as remote monitoring or other suitable method agreeable to the IAA.	To be updated	Operation & Maintenance		Applicant/ Contractor
47			Aeronautical charts	All structures > 90 m amsl in height will be charted on aeronautical charts and reported to the IAA at least three months prior to construction, for input into the IAA's database of tall structures in Ireland.	To be updated	Pre-Construction		Applicant/ Contractor
48			Consultation of IAA and IRCG on Final Layouts	IAA and IRCG will be consulted on the final layout of the Project to ensure compatibility with SAR helicopter operations in the event of rescue missions within the wind farm.	To be updated	Pre-Construction		Applicant/ Contractor
49			Spacing of Blade Tip	A minimum spacing of 500 m will be maintained between blade tip to blade tip of all surface infrastructure (for OSS, this shall be taken as the outermost point of the infrastructure).	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
50			ERCoP	An Emergency Response and Cooperation Plan (ERCoP) will be in place for the operational and maintenance phase of the Project (see appendix 5-8 in volume 2A of the EIAR). The ERCoP details specific marking and lighting of the wind turbines and will consider helicopters undertaking SAR operations when rendering assistance to vessels and persons in the offshore wind farm area.	To be updated	Operation & Maintenance	ERCoP	Applicant/ Contractor
51			Promulgation of Information	Promulgation of information advising on the nature, timings and location of construction and decommissioning activities at the landfall location. Information and notices will be posted at the landfall location.	To be updated	Construction Decommissioning		Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
52			Consultation with Department of Defence	The Applicant will continue to consult with the DoD to better understand their aviation lighting requirements.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
53	Marine Archaeology	Chapter 15	Marine Archaeological Consultation	Marine archaeologists to be consulted in the preparation of any pre-construction ROV/diver surveys and, if appropriate, in monitoring/checking of data.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Marine Archaeology Management Plan	Applicant/ Contractor
54			Archaeological Exclusion Zone	The identification and implementation of Archaeological Exclusion Zones (AEZs) around sites identified as having a known important archaeological potential.	To be updated	Pre-Construction Construction	Marine Archaeology Management Plan	Applicant/ Contractor
55			Unconfirmed Archaeological Potential	All anomalies of unconfirmed archaeological potential to be taken into account during final design. If they are likely to be impacted, these anomalies would undergo further archaeological investigation. Should these anomalies prove to be of archaeological importance then future AEZs may be implemented following consultation with NMS.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Marine Archaeology Management Plan	Applicant/ Contractor
56			Protocol for Archaeological Discoveries	Provision of a Marine Archaeological Management Plan (see volume 2A, appendix 5-10: Marine Archaeological Management Plan) including an Outline Written Scheme of Investigation (WSI) and Protocol for Archaeological Discoveries (PAD) similar to that set out by The Crown Estate 2014 for guidance on the mitigation of marine archaeology receptors and unexpected archaeological discoveries made during the course of the development.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Marine Archaeology Management Plan	Applicant/ Contractor
57			Marine Archaeological Consultation	Marine archaeologists to be consulted in advance of pre-construction site preparation activities (as included in the project description) and, if appropriate, to carry out watching briefs of such work.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Marine Archaeology Management Plan	Applicant/ Contractor
58			Mitigation of Unavoidable Direct Impacts	Mitigation of unavoidable direct impacts on known sites of archaeological importance. Options include i) preservation by record, ii) stabilisation.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning	Marine Archaeology Management Plan	Applicant/ Contractor
59	Infrastructure and Other Users	Chapter 16	Marine Safety Zone	The Applicant will implement advisory Marine Safety Zones of 500 m in radius around individual structures undergoing installation or decommissioning. Advisory Marine Safety Zones of 50 m will be implemented for incomplete structures at which construction activity may be temporarily paused. During the operational and maintenance phase, the Applicant will also apply for advisory Marine Safety Zones of approximately 500 m in radius around infrastructure undergoing major maintenance (for example a blade replacement).	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
60			Clearance distance	The Applicant will implement an advisory clearance distance of 500 m in radius around cable installation vessels and cable repair vessels.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
61			Notice to Mariners	Notice to Mariners will be issued through the Marine Survey Office in advance of construction and maintenance activities to inform all marine users of the location, time period and safety and navigational requirements for the planned activity.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
62			Promulgation of Information	Promulgation of information advising on the nature, timing and location of activities, including through Notices to Mariners. Information and notices will also be posted at the landfall location. The Applicant will directly issue Notices to Mariners.	To be updated	Pre-Construction Construction Operation & Maintenance Decommissioning		Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
63			Navigational Aids and Marine Charting	Provision of suitable Navigational aids and marine charting, to be agreed with the Commissioner of Irish Lights (CIL). To include charting of all structures associated with the Project on relevant nautical and electronic charts and implementation of a buoyed construction/decommissioning area for the offshore wind farm area during each phase.	To be updated	Construction Operation & Maintenance Decommissioning	LMP	Applicant/ Contractor
			LMP	Lighting and marking to be agreed with CIL via a Lighting and Marking Plan (see volume 2A, appendix 5-9: Lighting and Marking Plan). Requirements align with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendation O-139 (IALA, 2013).				
64			Guard Vessels	The Applicant will use guard vessels during installation and major maintenance activities such as during cable repair activities or during use of jack up vessels.	To be updated	Construction Operation & Maintenance		Applicant/ Contractor
70	Resource and waste management	Chapter 30	EMP	Implementation of the Environmental Management Plan (EMP) (see volume 2A, appendix 5-2: Environmental Management Plan).	To be updated	Construction Operation & Maintenance Decommissioning	EMP	Applicant/ Contractor
73			Management of Waste: Vessels	All vessels will be required to manage waste in accordance with the accepted EU and international standards. These include the Sea Pollution Act, 1991, 1999, 2005 and 2006, the Dumping at Sea Act 1996, the International Convention on the Prevention of Pollution from Ships (MARPOL Convention), the European Communities (Port Reception Facilities for Ship-Generated Waste and Cargo Residues) Regulations 2003 (S.I. No. 117 of 2003), the Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations 2012 (S.I. No. 372/2012) and Sea Pollution (Prevention of Pollution by Sewage from Ships) (Amendment) Regulations 2012 (S.I. No. 492/2012). Each Port will also have a Port WMP which must be abided by and if waste is taken ashore, the Waste Management Act 1996 (as amended) will apply.	To be updated	Construction Operation & Maintenance Decommissioning		Applicant/ Contractor
74	Seascape, landscape and visual asses	Chapter 27	Turbine Towers and Blades	Turbine towers and blades will be to a uniform colouration. Turbine locations are spaced to reduce visual clutter and avoid overlap with background landscape. Turbines will be of identical rotor diameter.	To be updated	Construction Operation & Maintenance		
75	Bats in the Marine Environment	Chapter 31	Injury and/or Fatality Curtailment - During the First Year of Operation	A set of curtailment criteria will be established based on a combination of conditions (i.e. ideal conditions for bats) to stop or slow down the turbines during peak bat migration periods. These measures will minimise bat barotrauma and collisions. The curtailment will apply when all of the following parameters are met: <ul style="list-style-type: none"> • Peak bat migration periods; mid-March (e.g. 15 March) to end of May (i.e. 31 May); and mid-August (e.g. 15 August) to October (i.e. 31 October); • Between sunset and sunrise; • Sunset temperatures above 10 °C (Collins, 2023); • Wind speeds of < 5.4 m/s (20 km/hr) (Collins, 2023); • Where rainfall is < 4 mm/hr (i.e. low to moderate rainfall levels) occurring for a duration of longer than 30 minutes; and • When one bat call is acoustically detected within the previous thirty minutes. Bat detectors will be evenly placed across fifteen wind turbines within the offshore wind farm area (one at the lowest blade tip height; and one at the nacelle). <p>It is also considered important, whilst still ensuring bat protection during migration periods, that the curtailment criteria do not cause any unnecessary energy losses. To ensure this, bat echolocation detection measures will be put in place which will limit the curtailment criteria to only those times when bats are detected. Such detection measures may include the application of a Detection and Active Response Curtailment (DARC) system, which aims to reduce wind energy's impact on bats while increasing energy production. The bat echolocation detection system will be agreed with the NPWS.</p> <p>Static detector surveys will be undertaken at the lowest blade tip height above LAT of 27 m and at the nacelle/hub height of 145 to 152 m. Thirty bat detectors will be deployed evenly across fifteen turbines within the offshore wind farm area.</p> <p>The results of the mitigation during the first year of operation will be compiled into a report and submitted to the NPWS for review.</p>	To be updated	Operation & Maintenance		Applicant/ Contractor
76			Injury and/or Fatality Curtailment - During the Second Year of Operation	Upon agreement with the NPWS, an adjustment to the curtailment criteria may be made based on the results of bat migration records during the first year of operation, and static detectors will be re-deployed. The results of the mitigation during the second year of operation will be compiled into a report and submitted to the NPWS for review.	To be updated	Operation & Maintenance		Applicant/ Contractor
77			Injury and/or Fatality Curtailment - During the Third Year of Operation	Upon agreement with the NPWS, static detector survey results from year one and year two will be used as an average to update the curtailment criteria. Acoustic surveys will continue for the third year of operation.	To be updated	Operation & Maintenance		Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation			
No.	Topic	EIAR Chapter/ Other	Aspect	Commitment	Related Planning Condition	Project Phase	Relevant document for Implementation	Responsible Party
78			Injury and/or Fatality Curtailment - Operational Years Thereafter	Acoustic surveys will continue for the remaining duration of the operational lifetime of the Project. The curtailment criteria shall be reviewed and updated, as required.	To be updated	Operation & Maintenance		Applicant/ Contractor
79	Fish and Shellfish	Chapter 9	Voluntary Monitoring and Mitigation	Herring spawning grounds have been identified as a feature of a potential MPA and have been raised by An Bord Pleanála as a cause for concern. Therefore, due to the overlap with the Fish and Shellfish Ecology Study Area, the Project will consider voluntary monitoring and mitigation/enhancement opportunities. These include: <ul style="list-style-type: none"> • Baseline, construction and post-construction monitoring of egg/larval activity. Surveys may include either trawl surveys for adult herring (to see if they are spawning) or egg/larvae surveys to detect recent spawning activity. • Potential biodiversity net gain initiatives which could aid herring spawning population, such as oyster beds (shells are used for laying eggs on) within detailed design of cable protection and scour protection. 	To be updated	Pre-Construction Construction		OWL/Contractor
80	Offshore Ornithology	Chapter 11	Monitoring	The Project proposes to continue monitoring the population distribution and abundance of the Offshore Ornithology Study Area. This monitoring is proposed to consist of DAS before construction (Year 0) and Years 1, 3, 5 and 15 following construction, following the same scope, methods and analysis of the baseline surveys. This monitoring will allow the conclusions presented within this EIAR to be confirmed. No additional monitoring of a specific receptor is proposed at this stage. The Applicant is willing to discuss any additional monitoring requirements with the regulator.	To be updated	Pre-Construction Construction Operation & Maintenance		OWL/Contractor
81	Commercial Fisheries	Chapter 12	Monitoring	It is recognised that static gear fisheries can be particularly affected by offshore wind development, due to their strong fidelity to specific sites (Roach et al., 2022). Therefore, on a precautionary basis, a study will be undertaken in collaboration with local fishers to monitor the static (pot) fisheries before and after construction of the Project.	To be updated	Pre-Construction Construction		OWL/Contractor
82	Population and Human Health	Chapter 18	Monitoring	The following monitoring is suggested: <ul style="list-style-type: none"> • Monitoring of the proportion of local people with long-term unemployment, high job instability or low income who enter good quality stable employment with the Project in order to confirm the expected benefit and further tailor the targeting of local vulnerable groups. • Monitoring of the proportion of NEETs taking up, and completing, training opportunities with the Project in order to confirm the expected benefit and further tailor the targeting of local vulnerable groups. 	To be updated	Construction Operation & Maintenance Decommissioning		OWL/Contractor
83	Noise and Vibration	Chapter 25	Monitoring	Prior to the commencement of construction, the contractor will set out and agree a schedule of noise monitoring with the planning authority to include the number and locations at which noise monitoring will be carried out, the frequency and duration of the monitoring and the reporting of results.	To be updated	Construction		OWL/Contractor
84	Bats in the Marine Environment	Chapter 31	Monitoring	A competent and experienced Ecologist will be appointed by the Applicant and will ensure the following monitoring scheme is implemented in full: <ul style="list-style-type: none"> • At pre-construction stage, bat data will be collected using appropriate vessels to provide information on the usage of the offshore wind farm area by migrating bats during at least one spring migration period and at least one autumn migration period. Two bat detectors will be required per vessel and data will be collected weekly during the peak bat migration periods; • During the operational and maintenance phase, thirty static bat detectors will be deployed evenly across fifteen wind turbines within the offshore wind farm area (one at the lowest blade tip height; and one at the nacelle). These static bat detectors will be required to monitor bats during peak migration periods and monitor the success of mitigation measures; • Bat monitoring will be carried out annually, until Project decommissioning; and • The monitoring scheme and success of mitigation measures will be documented annually into a detailed report and submitted to the NPWS for discussion. 	To be updated	Pre-Construction Operation & Maintenance Decommissioning		OWL/Contractor

References

- Institute of Environmental Management and Assessment (IEMA) (2008) Environmental Management Plans, Best Practice Series, Volume 12, December 2008.
- National Parks and Wildlife Services (NPWS) (2014) Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters. Available at:
http://www.protectedspeciesobserver.com/uploads/4/8/3/6/48362305/ireland_guidance_jan_2014.pdf
- Transport Infrastructure Ireland (TII) Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan (2007). [online]. [Accessed 11 November 2020]. Available at:
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