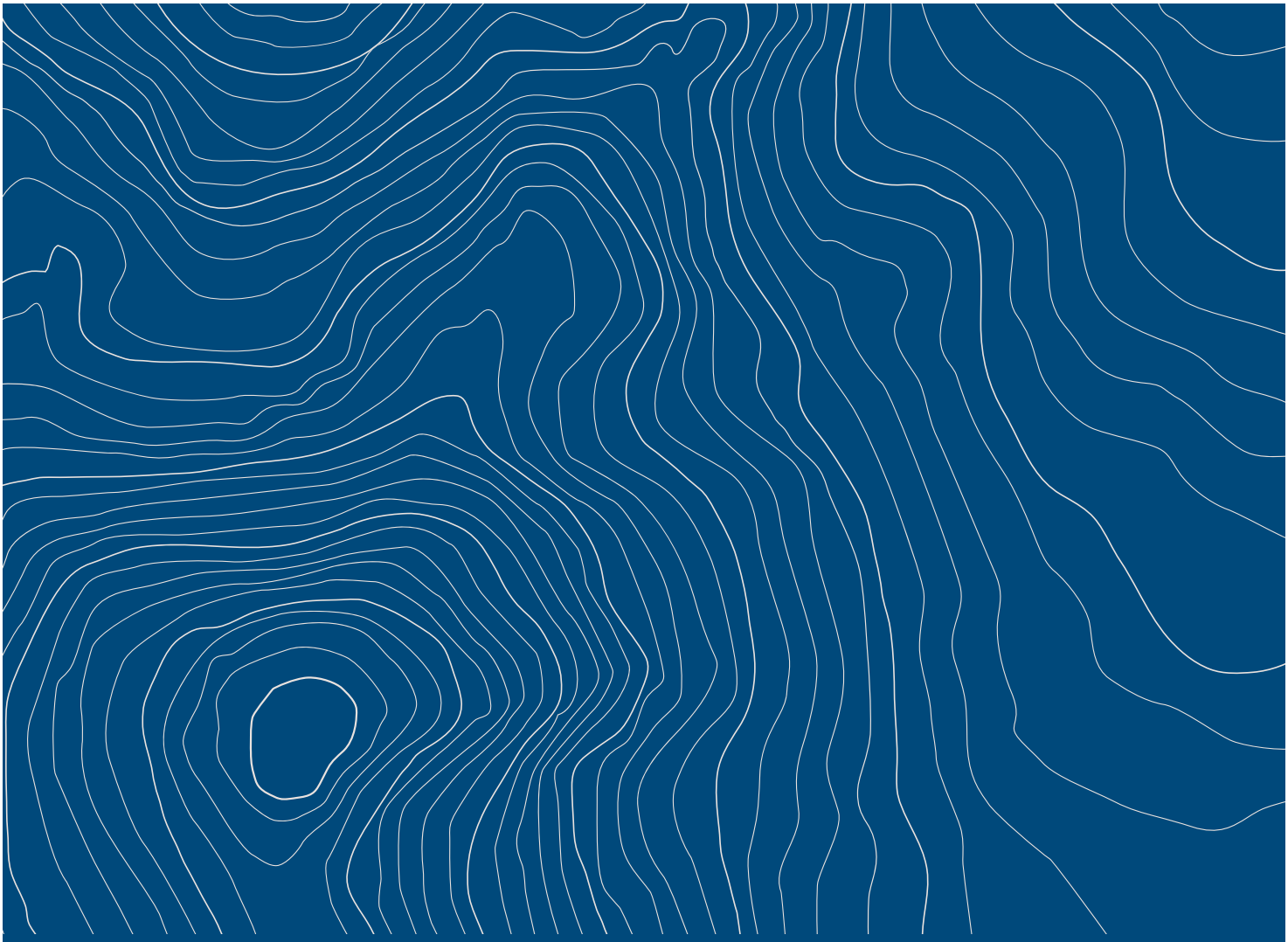

DublinArray
Generation for generations

EIAR Volume 7: Planning Stage Plans Appendix 1: Project Environmental Management Plan

Kish Offshore Wind Ltd

RWE SLR GoBe APEM Group

www.dublinarray-marineplanning.ie

Dublin Array Offshore Wind Farm

Environmental Impact Assessment Report

Volume 7, Appendix 1: Project Environmental Management Plan

Planning Stage

Date: January 2025

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Acronyms

Term	Definition
AFS	Anti Fouling System
CMS	Construction Method Statement
Dublin Array	Dublin Array Offshore Wind Farm
ECR	Export Cable Route
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EMS	Environmental Management System
eVMP	Environmental Vessel Management Plan
FLO	Fisheries Liaison Officer
gt	Gross Tonnage
HWM	High Water Mark
HVAC	High Voltage Alternating Current
km	Kilometre
km^2	Kilometre Squared
LAT	Lowest Astronomical Tide
m	Metre
MARA	Maritime Area Regulatory Authority
MMO	Marine Mammal Observer
NIS	Natura Impact Statement
NMS	National Monuments Service
PEMP	Project Environmental Management Plan
O&M	Operations and Maintenance
OES	Onshore Electrical System
OFLO	Offshore Fisheries Liaison Officer
OSS	Onshore Substation
OSP	Offshore Substation Platform
PAD	Protocol of Archaeological Discovery
PAM	Passive Acoustic Monitoring
RWE	RWE Renewables Ireland Limited
TJB	Transition Joint Bay
WTG	Wind Turbine Generator

Glossary

Term	Definition
The Applicant	The Applicant for Dublin Array is defined as Kish Offshore Wind Limited on behalf of Kish Offshore Wind Limited and Bray Offshore Wind Limited.
Authorised Agent	An authorised agent (vessel agent or ships agent) is a local expert who acts as a representative of ship owners, managers, or charterers and carries out all the necessary duties and obligations required by the vessel's owner or crew.
ISO 14001	ISO 14001 is an internationally agreed standard that sets out the requirements for an environmental management system. This standards is accredited and audited by the International Organisation for Standardisation (ISO).
Material Safety Data Sheet	A Material Safety Data Sheet (MSDS) is a fact sheet developed by manufacturers describing the chemical properties of a product.
Planned Maintenance System	A planned maintenance system on ships is mandatory according to the International Safety Management Code (ISM). It allows shipowners and operators to plan, perform and document vessel maintenance at intervals complying with Class and manufacturer requirements.
Secondary Consents	These include any additional licences and approvals which may be applied for separately, to support activities consented through the planning application process. These can include such licences as a derogation licence from the NPWS, a maritime usage licence from MARA and a detection device consent order from the NMS.

1 Introduction

1.1 Overview

1.1.1 Dublin Array Offshore Wind Farm (Dublin Array) is a proposed offshore wind farm on the Kish and Bray Banks. The Kish and Bray Banks are located, approximately 10 km off the east coast of Ireland, immediately south of Dublin city off the coast of counties Dublin and Wicklow. Dublin Array will be located within an area of approximately 59 square kilometres (km^2), in water depths ranging from 2 metres to 50 metres lowest astronomical tide (LAT).

1.1.2 A detailed description of Dublin Array is presented in Volume 2, Chapter 6: Project Description and presented in summary below:

- Offshore wind farm infrastructure: comprises between 39 and 50 wind turbine generators (WTGs) with a maximum blade tip height (when a rotor blade is in a vertical orientation) of 309.6 m LAT; and a minimum blade tip height of 31.6 m LAT; associated offshore infrastructure including wind turbine generator foundations, subsea inter array electricity cables connecting the WTGs to an offshore substation platform (OSP) and offshore electricity export cables connecting the OSP to the onshore electrical system;

- Onshore Electrical System (OES): comprises the onshore infrastructure that is necessary to facilitate the operation of the wind farm. This includes a landfall/transition joint bay (TJB) to be located at Shanganagh where the offshore export cables will be connected to the onshore export cables; onshore underground electricity transmission cables; an onshore substation (OSS); and underground electricity cable circuits connecting the OSS to the existing EirGrid substation at Carrickmines. The OES will be located in its entirety within the administrative boundary of Dún Laoghaire Rathdown County Council;

- The Operations and Maintenance (O&M) Base: will be located at Dún Laoghaire Harbour and will comprise the O&M Base for Dublin Array. Once the O&M Base is operational, it will also be used to support the management of the construction of the offshore wind farm.

1.1.3 The Project Environmental Management Plan (PEMP) relates to the construction, operation and maintenance and decommissioning of the offshore works associated with Dublin Array.

1.1.4 This planning stage PEMP has been prepared to support the Environmental Impact Assessment Report (EIAR) for Dublin Array. This document will remain a 'live' document throughout all phases of the development and will be updated as the development progresses through post-consent, construction and operational stages to maintain its relevance to the associated life stages of the project.

1.1.5 For the purposes of this plan, the boundary between onshore and offshore infrastructure is the high water mark of mean or ordinary tides, which is shown as 'HWM' on Ordnance Survey Ireland Maps.

1.2 Purpose and Scope of the PEMP

1.2.1 The PEMP provides a framework for environmental management and a schedule of commitments, as identified in the EIAR. It sets out the minimum environmental management requirements to be implemented before commencement and throughout the duration of offshore construction, as well as during the Operation and Maintenance and decommissioning phases. The PEMP will be implemented in accordance with the development consent to ensure that all activities associated with Dublin Array have a negligible effect on the local environment and sensitive receptors.

1.2.2 The PEMP applies to all key project phases, including construction, O&M, and decommissioning, and outlines mitigation measures necessary to manage environmental impacts at each stage. The Contractor will adhere to the methods and principles contained within this PEMP, along with relevant legislative instruments and published guidance, when developing construction method statements and other environmental management plans as required by the contract.

1.2.3 Following the receipt of planning consent, the planning stage PEMP will be further developed and updated by the Applicant to incorporate relevant planning conditions and additional environmental management measures.

1.2.4 The PEMP will be a key construction contract document, ensuring that all required mitigation measures and development conditions necessary for environmental protection are implemented. Following the award of the various offshore construction contracts, the appointed Contractor (s) will be responsible for developing a detailed construction phase PEMP.

1.2.5 During the operation and maintenance phase, the Applicant, and relevant asset owner[1] will be responsible for updating the PEMP to include environmental management during daily operations, ensuring compliance with licensing conditions.

1.3 Legislation and guidance

1.3.1 This PEMP has been developed with due regard to the following legislation:

- European Union (Port Reception Facilities for the Delivery of Waste From Ships) Regulations (2022);
- National Monuments Act (1930);
- European Union (Invasive Alien Species) Regulations (2024);
- National Maritime Oil/HNS Spill Contingency Plan, Department of Transport (2020);

[1] On completion of construction and commissioning the offshore transmission system (OSP and offshore export cables back to landfall) will be transferred from the Applicant to Eirgrid who will be responsible for the operation and maintenance and decommissioning of the assets.

- Guidance to Manage the Risk to Marine Mammals from Man made Sound Sources in Irish Waters, Department of Arts, Heritage and the Gaeltacht2 (2014);
- International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), International Maritime Organisation (2004); and
- International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention), International Maritime Organisation (2001).

1.3.2 In addition to considering the above legislation, this document has been produced in conjunction with the following elements of the Dublin Array EIAR, which together will provide plans and procedures for ways of working throughout the project:

- Volume 7, Appendix 2: Dublin Array Decommissioning & Restoration Plan;
- Volume 7, Appendix 3: Fisheries Mitigation and Management Strategy;
- Volume 7, Appendix 4: Marine Megafauna Mitigation Plan;
- Volume 7, Appendix 5: Dublin Array Lighting and Marking Plan;
- Volume 7, Appendix 6: Dublin Array Vessel Management Plan;
- Volume 7, Appendix 7: Marine Archaeology Management Plan; and
- Volume 7, Appendix 8: Construction Environmental Management Plan.

1.4 Approach

1.4.1 The PEMP provides a framework for the following:

- To outline the key construction activities and types of construction methods relating to the offshore works, infrastructure and equipment;
- To outline the principles of environmental management procedures such as reporting and communicating which will be developed throughout the construction period, operations and maintenance and decommissioning;
- To outline the environmental management procedures such as reporting and communicating throughout the operations and maintenance stage of Dublin Array;
- To outline the responsibilities and roles for implementing and maintaining environmental management; and
- To outline management, monitoring and mitigation measures to be developed and those already identified within the EIAR.

[2] Formerly known as DAHG, this guidance document now falls under the Department of Housing, Local Government and Heritage.

1.4.2 The PEMP will be updated as Dublin Array advances in milestone, for example design and engineering advances, commencement of the construction stage, construction completion progressing into the operations and maintenance stage.

1.4.3 Contractor(s) will be required to take into account the content, method statements and mitigation requirements contained within the EIAR and PEMP when developing programme of works. The Contractor(s) will also be responsible for ensuring that their scope will comply with:

- Conditions attached to the development consent;
- Design details set out in the final EIAR and NIS including any worst- case assumptions made; and
- With any mitigation measures set out in the final EIAR and NIS.

1.4.4 The contractor(s) will be expected to develop an EMS that follows the principles of ISO14001 f this is not already the case. The contractors scope will be undertaken within the framework of the contractor(s) own Environmental Management System/Plan and will be tailored to their own internal management systems and practices. Their system/plan will take account of their company specific assets such as plant, machinery and personnel.

1.4.5 The PEMP will remain a 'live' document throughout the construction process and will be reviewed on a regular basis and amended as needed to ensure information relating to construction methodologies and environmental management is accurate and reflects conditions experienced during construction.

1.5 PEMP structure

1.5.1 This PEMP is structured as follows:

- **Section 1** – Introduces Dublin Array, key construction activities anticipated, and the purpose of this PEMP;
- **Section 2** – describes the offshore works and key offshore construction activities;
- **Section 3** – Sets out a responsibility framework as to how environmental requirements will be managed;
- **Section 4** – Outlines general requirements and procedures to be put in place during the project lifetime;
- **Section 5** – Sets out environmental management, monitoring and mitigation measures relating to each environmental topic; and
- **Section 6** – Annexes, including planning stage plans to underpin the environmental measures.

2 Proposed development and key construction activities

2.1 Proposed Offshore Infrastructure

2.1.1 This section contains a summary description of the infrastructure to be installed in the offshore area of the project. A detailed description can be found in Volume 2 Chapter 6: Project Description of the Environmental Impact Assessment Report (EIAR).

Wind Turbine Generators (WTG)

2.1.2 Dublin Array will comprise between 39 and 50 wind turbine generators (WTGs). Table 1 WTG parametersTable 1 provides the key numbers and dimensions of the three WTG models under consideration for the development and for which development permission is being sought. Each WTG foundation will include a boat landing system and an external working platform to facilitate access to the WTG by technicians. Internal access will be provided within the tower structure to provide access to the nacelle.

Table 1 WTG parameters

	Item	Parameters		
		Option A Turbine	Option B Turbine	Option C Turbine
1	Rotor diameter (m)	236	250	278
2	Maximum number of turbines (per turbine class)	50	45	39
3	Maximum rotor diameter (m)	278		
4	Minimum rotor diameter (m)	236		
5	Minimum lower blade tip height (m above LAT)	31.6		
6	Maximum upper blade tip height (m above LAT)	309.6		

2.1.3 The WTG which will be installed will be three bladed horizontal axis machines and will comprise of a tower, nacelle, and rotor, supported, and fixed to the seabed by means of a foundation. A transition piece, which acts as the interface between the turbine and the foundation, may be used.

2.1.4 The nacelle will sit on top of the tubular support tower. The nacelle houses the electro-mechanical elements of the WTG which convert rotational motion into electrical energy. Depending on the WTG supplier, additional equipment such as the WTG transformer could also be housed in the nacelle.

2.1.5 Each WTG consists of the following components:

- A tubular steel tower;
- A nacelle on top of the tower;
- A three-blade rotor with a maximum diameter of 278 m; and
- A maximum blade tip height of 309.6 m LAT.

Offshore Structure Foundations

2.1.6 Foundation structures are required to securely support the WTGs and the OSP in a vertical position while withstanding physical loads (forces) from wind and the marine environment. The foundation structures also provide means of safe access to and from the infrastructure.

2.1.7 A wide range of foundation options are available for the offshore infrastructure. The final foundation options will be chosen based on the selected WTGs and OSP taking account of key factors such as seabed conditions, water depth, wind, wave and current regime as well as economic factors. Consistent with the Opinion on Flexibility the actual details of the foundations to be used will be notified to ABP prior to the commencement of development of that part of the proposed development.

2.1.8 The foundation types which have been short-listed include:

- Monopile foundation;
- Multileg foundation (of which there are two sub-options):
  - Driven or drill-piled multileg; or,
  - Suction bucket multileg.

Inter-array cabling

2.1.9 It is estimated that there will be approximately 120 km of 66 kV inter-array cables (IACs) to link the WTGs and the OSP, with potentially between five and seven turbines per string of turbines (subject to detailed design). IACs are typically three-core, copper conductor cables suitable for subsea installation. Fibre-optic cables are integrated into the cable bundle to transmit data for the wind farm control systems. It is estimated that the IACs will have an overall external diameter of up to 220 mm, depending on the final electrical design.

Offshore Substation Platform

2.1.10 It is proposed to install a single Offshore Substation Platform (OSP) within the array area. The OSP will receive power from the WTGs via IACs. Transformers located on the OSP will increase the voltage of the power received from the WTGs from 66 kV to 220 kV so that the electricity can be efficiently transmitted to shore and onwards to connect to the electricity transmission network.

2.1.11 The OSP will consist of two main parts, the foundation and the topside which will be installed onto the top of the foundation which will house electrical equipment and other infrastructure required for supporting functions.

2.1.12 The OSP foundation will consist of either a monopile, piled multileg or suction bucket multileg design. This is dependent on the selected suppliers design specification and will be designed by structural and foundation engineers at detailed design stage.

2.1.13 The topside will consist of a multideck arrangement. Decks will either be open, with modular equipment housings, or the structure will be fully or partially enclosed by means of weather-proof cladding. All weather sensitive equipment will be placed internally in the modular equipment housings.

2.1.14 The specific dimensions of the OSP will only be available following procurement and detailed design which will take place after development permission is secured. Therefore, in accordance with the Opinion on Flexibility from ABP, permission is being sought on the basis of a maximum and minimum range of dimensions of the OSP. Full details of this range are outlined in Table 2 7 and are also shown on the planning drawings included in "Part 2 Planning Drawings" of the planning application.

2.1.15 The final number of decks, locations and dimensions of plant, equipment, and ancillary infrastructure will be determined during the detailed design stage post development consent being granted, but the maximum dimensions of the structure will align with the Opinion on Flexibility as issued by ABP.

Export cabling

2.1.16 Two High Voltage Alternating Current (HVAC) export cables will transfer the electricity from the OSP to the TJBs at the onshore landfall and onto the national electricity transmission grid via the onshore electrical system. The nominal operating voltage of these cables will be 220 kV AC. The maximum combined length of the export cabling between the OSP and the landfall will be between 26 km and 37 km for both export cables (depending on the final route of both cables within the export cable corridor). The export cables will have a diameter of up to 330 mm.

Scour Protection

2.1.17 The final approach to scour protection has not yet been finalised but it has been conservatively assumed that scour protection will be applied at all foundation locations. However, it is noted that protection against scour or subsea damage may not be required for some foundation designs in some locations.

2.1.18 The piles may be driven through the scour protection material, which will result in a quantity of material infill within the lower section of the pile. Alternatively, the scour protection may be laid following the installation of the piles.

O&M Base

2.1.19 In order to service and maintain the offshore infrastructure, a storage and coordination facility is required (referred to in this document as the O&M Base). The O&M Base will act as a storage and loading area for small and medium spare parts for the wind turbines and small ancillary equipment such as tools and consumables.

2.1.20 The proposed development will provide offices and warehouse space together with berthing facilities for maintenance vessels (hereafter referred to as CTVs) associated with the ongoing operation and maintenance of Dublin Array.

2.1.21 The proposed development will be located on, and directly adjacent to St. Michaels Pier, within Dún Laoghaire Harbour, Co. Dublin. Dún Laoghaire Harbour is owned and operated by Dún Laoghaire-Rathdown County Council (DLRCC) who is the statutory harbour authority and is responsible for the management and safety of the harbour.

2.1.22 A new floating pontoon, up to 60 m long and up to 6 m wide will be installed adjacent to the existing Berth 5 quay wall which will facilitate the berthing of CTVs. The proposed pontoon will be anchored to the quay wall by means of steel guide beams. The proposed guide beams will allow the pontoon to rise and fall with the tidal conditions in the harbour. The CTVs will transfer offshore maintenance technicians to the offshore wind farm on a daily basis. A new access gangway will be installed on the existing Berth 5 quay wall to facilitate access to the floating pontoon.

2.1.23 Rock armour was previously installed on the seabed adjacent to Berth 5 to protect the quay wall from scouring during ferry operations. There may be a requirement to undertake levelling or reprofiling works to this rock armour to prevent the pontoon, or CTVs from hitting the armour at low tide. It is anticipated that the armour would be reprofiled by means of an excavator.

2.1.24 Major components like generators, blades, main bearing, blade bearings or spare cable will not be stored on the O&M Base. Daily operations at the base will include the delivery of spare parts, materials and supplies to the O&M warehouse. There will not be any heavy engineering or manufacturing processes at the site.

2.1.25 Technicians will arrive at the O&M Base, change into clothing/PPE suitable for offshore use, and embark on a CTV moored at the pontoon. The pontoon has been designed to accommodate 2 CTVs, however, an additional two CTVs may be rafted to the CTVs berthed on the pontoon. On returning from offshore activities at the proposed wind farm, the technicians will use the Base to change, wash/dry and store clothing/PPE and equipment used offshore. There will not be any permanent overnight accommodation at the facility.

2.1.26 As access to the wind farm is required at all times, the O&M Base will need to be accessible 24 hours per day, 7 days per week.

2.2 Construction programme

2.2.1 Offshore construction will generally follow the sequence as set out below. A number of these activities may overlap temporally with each other and coordinated as necessary, with the onshore construction activity:

- Installation of scour protection at foundation locations if required (this may be carried out before or after foundation installation);
- Installation of offshore substation foundation;
- Commencement of turbine foundation installation;
- Installation of offshore substation topside;
- Commencement of turbine installation;
- Installation of cable ducts at landfall;
- Installation of export cables to shore;
- Commencement of inter array cabling installation;
- Commissioning of each string of turbines; and
- Final commissioning.

2.2.2 The offshore construction programme is dependent on several factors, including the availability and lead times for procuring and installing project components. It is anticipated that the offshore construction duration could range from 18 months to 30 months. An overview of a typical offshore construction programme is provided in Table 2, which assumes a 24-month duration.

2.2.3 Specialist contractors shall be appointed to undertake the offshore infrastructure. Therefore, some flexibility is required in the offshore programme to account for contractor and vessel availability. Offshore works will take place 24 hours per day.

Table 2 Overview of typical offshore construction programme

Activity	Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Seabed Preparation																								
Foundation (WTG & OSP) installation																								
Export cable lay, burial & Commissioning																								
OSP topside installation & Commissioning																								
Installation of offshore export cable at Landfall (trenchless installation)[7]																								
IAC lay, burial & Commissioning																								
WTG installation & commissioning																								
Commercial Operations Date																								

3 General construction management and responsibilities

3.1.1 The awarded contract(s) relating to the offshore infrastructure construction works will include a contractual requirement that the contractor(s) comply with EIAR, NIS, development consent conditions, together with information outlined in this PEMP and relevant legislation, guidelines and codes of practice. As set out in Section 0, the contractor(s) will be responsible for undertaking proposed works upon appointment in accordance with an Environmental Management Plan or Management System.

3.1.2 The contractor(s) will be required to develop and implement an EMS that follows the principles of IS14001, therefore it is expected that the EMS will include *inter alia:*

- The contractor's Environmental Policy;
- Procedures for identification and evaluation of environmental aspects;
- The contractor's operational control procedures;
- The contractor's procedures for Emergency Preparedness and Response;
- Details of interested parties, legal and other requirements; and
- Competence records and company performance monitoring information including management review and results of audits.

3.1.3 It is expected that the CMSs will be prepared within this EMS framework and will therefore have due regard to the principles of ISO14001.

3.2 Roles and responsibilities

3.2.1 This section outlines the key roles and responsibilities for the management of offshore construction activities, ensuring compliance with environmental commitments, health and safety regulations, and best practice construction methodologies. Clear allocation of responsibilities is essential for effective communication, coordination, and implementation of mitigation measures throughout the construction phase. All personnel involved in the project, from contractors to site supervisors, will be required to adhere to the environmental management framework set out in this PEMP, ensuring that construction activities are carried out in a manner that minimises environmental impact and aligns with regulatory requirements.

The Applicant

3.2.2 The Applicant will appoint a design team to prepare the detailed design for the offshore infrastructure. The appointed designer will ensure all planning and environmental obligations are incorporated where possible, in the design of the offshore infrastructure.

Construction phase

3.2.3 The Applicant will be responsible for appointing a competent Contractor or Contractors to undertake the construction works and to ensure that resources are available to allow environmental risks to be managed.

3.2.4 The Applicant will acquire all necessary consents and approvals necessary to commence the construction as required by current legislation.

3.2.5 The Applicant will appoint a Consents Manager to monitor the construction stage of the project and ensure works are being carried out in accordance with the awarded consent.

3.2.6 The Applicant has appointed and will continue to employ a Fisheries Liaison Officer (FLO) to ensure communication between Dublin Array and local fishers and the seafood industry during the construction stage. The role of the FLO is outlined in Section 3.2.24 and in more detail in Volume 7, Appendix 3 Fisheries Mitigation and Management Strategy of the EIAR.

3.2.7 The Applicant will appoint a Marine Coordinator to coordinate all marine operations relating to Dublin Array, including monitoring and managing all construction vessel activities.

O&M phase

3.2.8 The Applicant will be responsible for undertaking the O&M works and to ensure that resources are available to allow environmental risks to be managed.

3.2.9 The Applicant will be responsible for obtaining all necessary consents and prior to commencement of the works as required by current legislation covering the protection of the environment. These applications will be made with due allowance and consideration of the programming and scheduling of planned site works.

3.2.10 The Applicant will appoint a Consents Manager to monitor the O&M stage of the project and ensure works are being carried out in accordance with the awarded consent.

3.2.11 The Applicant will engage a team to monitor the O&M stage of the project and ensure works are being carried out in accordance with the Applicants EMS, O&M stage PEMP, and HSE plans and systems.

3.2.12 The Applicant has appointed and will continue to employ a Fisheries Liaison Officer (FLO) to ensure communication between the project and local fishers and the seafood industry during the O&M stage. The role of the FLO is outlined in Section 3.2.24 and in more detail in Volume 7, Appendix 3: Fisheries Mitigation and Management Strategy of the EIAR.

3.2.13 The Applicant will appoint a Marine Coordinator to coordinate all marine operations relating to Dublin Array, including monitoring and managing all O&M vessel activities.

Contractor(s) requirements

Construction phase

3.2.14 All Contractors will be responsible for the development of detailed CMSs, which will be based on the outline measures set out in this PEMP.

3.2.15 If the construction of the offshore infrastructure is divided into multiple works packages, each Contractor will be responsible for the preparation of a detailed EMP and supporting documents relating to their scope of the works. It is anticipated that this is likely to be necessary during this stage of the project. The Contractor(s) will be contractually obliged to ensure that they comply with the requirements of the construction stage PEMP.

3.2.16 All Contractors on site will be required to comply with all relevant environmental legislation and to take full account of all relevant published standards, accepted industry practice, national and international guidelines and codes of practice relevant to the construction works.

3.2.17 All Contractors will operate an induction scheme for all employees. This will ensure that all site workers are aware of the rules of the site and their associated environmental responsibilities. The induction process will identify training needs for personnel and ensure that they are provided with appropriate follow-up training. Further details regarding induction and training are set out in Section 3.3.1-3.3.5.

Vessel Manager

3.2.18 The Contractor(s) will appoint a competent Vessel Manager or Managers to oversee the day-to-day management of the offshore construction works. They will ensure a safe delivery of construction activities to a high standard that complies with relevant health and safety and environmental procedures as detailed in the PEMP and the accompanying EMPs.

Marine coordinator

3.2.19 A marine coordinator will manage all of the offshore activities associated with the project during the construction and O&M stages of the project.

3.2.20 The marine coordinator will ensure that the coordination of operations is delivered continuously, 24 hours per day, 7 days per week.

3.2.21 Communication with the marine coordinator will be available for all contractors and members of the marine community to allow for the safe operations of the works throughout the lifetime of the project and to receive any reports, or provide information to other marine users operating in the vicinity of the project.

Consents Manager

3.2.22 A Consents Manager will be appointed by the Applicant to monitor compliance with planning conditions and manage secondary consents. The Consents Manager will be a member of the Applicants consents and development team.

3.2.23 The role of Consents Manager will include liaison duties between Dublin Array and both statutory and local stakeholders, management of planning conditions and advising on any additional compliance needs for Dublin Array.

Fisheries Liaison Officer

3.2.24 An Fisheries Liaison Officer (FLO) has been appointed by the Applicant to communicate with local fishers and the seafood industry. This role will exist throughout the development, construction and O&M stages of the project.

3.2.25 The FLO acts as a first and direct point of contact for the fishing industry and will provide support for all fisheries related matters throughout all stages of Dublin Array's lifecycle.

3.2.26 The FLO will maintain appropriate methods of communication for engaging regularly with fishers as well as circulating relevant Dublin Array project information.

3.2.27 The FLO will organize and attending meetings with fishers and fishing industry representatives and other relevant stakeholders.

3.2.28 The FLO will not be involved in any cooperation agreements between Dublin Array and fishers so that impartiality can be maintained.

Archaeological Consultant

3.2.29 An Archaeological Consultant has been appointed by the Applicant prior to the submission of the planning application for the project. This role will continue to be utilised as needed throughout the lifetime of Dublin Array, where required.

3.2.30 The Archaeological Consultant will act on behalf of the Applicant and will act as liaison between the Applicant and the statutory body, i.e. The National Monuments Service (NMS).

3.2.31 Where a licenced archaeologist is required under a Detection Device Consent order or a Licence for Archaeological Excavation, the Archaeological Consultant will be the licence holder and will ensure that all competency measures, defined under Section 26 of the National Monuments Act 1930 are adhered to prior to the commencement of any intrusive archaeological works.

3.2.32 The Archaeological consultant will be consulted on the implementation of the Archaeology Management Plan and the Protocol of Archaeological Discovery (PAD), which can be found in Volume 7, Appendix 7 of the EIAR.

Marine Mammal Observer/Passive Acoustic Monitoring Operators

3.2.33 Marine Mammal Observers (MMOs) and Passive Acoustic Monitoring (PAM) Operators will be appointed during the construction of the offshore infrastructure as needed.

3.2.34 The need for MMOs and PAM Operators will be dictated by the application of the Guidance to Manage the Risk to Marine Mammals from Man made Sound Sources in Irish Waters (DAHG, 2014) and conditions outlined in the development consent.

Offshore Fisheries Liaison Officer

3.2.35 During the construction stage of the project, it may be necessary to appoint an Offshore Fisheries Liaison Officer (OFLO) on vessels.

3.2.36 The OFLO may be stationed on a survey/works/guard vessel to communicate directly with fishers and request them to keep works locations and transit routes free from fishing gear and fishing activities which may post health, safety and environmental risks.

3.2.37 The OFLO will play a supporting role to the FLO in the project.

3.3 Training, communication and auditing

Training and awareness procedures

Construction phase

3.3.1 The Contractor(s) will establish an Environmental Training and Awareness Programme and will ensure that all construction employees receive adequate training prior to commencement of construction activities.

3.3.2 All site personnel will undertake this tailored environmental awareness training as part of the site induction and be made aware of their responsibilities in respect of the construction stage PEMP. Site staff will receive training with regard to mitigation measures and procedures and in the use of relevant mitigation material, for example the use of and location of spill prevention kits.

3.3.3 The site induction will include a general overview of site-specific environmental issues, the environmental sensitivities of the area, procedures for dealing with unforeseen environmental incidents and details of how these issues are to be managed.

3.3.4 A project programme will be developed prior to commencement of construction operations and will be reviewed and updated on a regular basis to take account of progress of the project and any relevant changing circumstances relating to the project. Site personnel will be made aware of any significant changes following the training, some of which may result in the need for appropriate additional training.

3.3.5 Relevant environmental bulletins and notices will be displayed on notice boards on vessels where applicable. Any relevant environmental procedures will be set out in the PEMP.

O&M phase

3.3.6 The Applicant has an established internal Training and Awareness programme, which will be used to deliver project specific training to all staff working on Dublin Array, as appropriate.

Communication

3.3.7 In addition to the communication responsibilities in respect of the PEMP at the induction training, the Contractor will ensure that the following aspects of site operations are communicated to and shared with all staff;

- Progress reports;
- Audits and inspections of site operations including any investigations of incidents;
- Management of any complaints received;
- Visits by external bodies or authorities; and
- Objectives and targets.

3.3.8 It will be necessary to undertake briefings and Toolbox Talks covering topics relating to specific vessel activities for example working on the back decks of ships, working at height and any necessary hot works onboard.

3.3.9 The appointed Contractor(s) Environmental Policies will also be available at onboard vessels.

Meetings

3.3.10 Regular meetings will be arranged between the Applicant, the Site Manager and the contractors to discuss environmental matters, progress and ensure effective communication and coordination.

Targets

3.3.11 As outlined above, regular progress meetings will discuss progress and performance to date, together with the need for improvements (if any), the results of inspections and details of any complaints received.

3.3.12 Upcoming work operations will be reviewed in order to plan any necessary actions to mitigate environmental risks and to disseminate information on best practice.

Monitoring, recording and audits

3.3.13 The performance of the Contractor(s) and construction activities will be monitored by the Applicant on a regular basis. The Contractor(s) will be required to submit a monthly report to the Applicant that details compliance with the PEMP, results of monitoring and audits, reports of any incidents or complaints raised.

3.3.14 The programme for monitoring and audits will be specified in the contract and PEMP. It is likely to be a combination of internal and external inspections and audits. Records of all inspections carried out would be made and distributed accordingly with any actions being addressed in a reasonable time. The construction stage PEMP will include further details of inspection procedures.

3.3.15 Records would be controlled through the document management system.

Non-conformity and corrective actions

3.3.16 Any non-conformances arising will be recorded and submitted as part of the reporting process. Any non-conformity would be investigated by the Contractor(s) and reported to the Applicant if necessary immediately. All corrective actions would be recorded with dates for action. An overall register would be kept and regularly reviewed by the Applicant, the Site Manager and the contractors.

Feedback mechanism

3.3.17 Dublin Array is committed to effective stakeholder engagement, based on active participation of, and feedback from, groups affected by Dublin Array.

3.3.18 Throughout the lifetime of Dublin Array, third parties (e.g. marine users or other stakeholders) will want to provide feedback in relation to the ongoing activities or related items. The PEMP will contain a documented procedure setting out how feedback can be provided and what subsequent steps to be followed. This procedure will include details of the escalation path which will be deployed so that any concerns or opportunities provided in the feedback are addressed.

4 Environmental management controls

4.1 General management and housekeeping

4.1.1 Good housekeeping is necessary to maintain a safe work environment and to lower the risk of any environmental incidents from any work area within Dublin Array. A housekeeping policy will be adopted which will outline the basic requirements and procedures for the range of day to day activities.

4.1.2 The housekeeping policy will be applied to the construction and O&M vessels at all times. As far as reasonably practicable the following principles will be applied:

- All working areas will be kept in a clean and tidy condition;
- A vessel layout map showing key areas such as first aid posts, spill kits, material, waste storage and welfare facilities will be provided;
- Contact details of key personnel including the Marine Coordinator, Site Manager and Fisheries Liaison Officer will be provided to all site personnel;
- Waste from the vessels will be stored securely to prevent pollution of the marine environment; and
- Waste will be removed at frequent and required intervals.

4.2 Hazardous materials

4.2.1 Any hazardous material used during the construction stage works will be stored in a safe and secure manner whilst either waiting to be removed from site or waiting to be used. The container the material is to be stored in will be lockable and suitable for the material to be stored. This includes internal bunding and firesafe structural design. The storage of any hazardous material will be as close to its source of use as possible in order to minimise site movement, hence minimising risk.

4.2.2 Anyone handling hazardous materials will complete a chemical risk assessment which will incorporate material safety data sheets and requirements supplied by the manufacturers.

4.2.3 Hazardous waste will be removed from vessels/the O&M base as soon as is reasonably practicable and not stored on site for prolonged periods. Any waste will be removed by only suitably licensed waste management companies.

5 Environmental management, monitoring and mitigation

5.1.1 The following sections detail the minimum mitigation measures to be implemented prior to the start of construction. Measures outlined below should also be read in conjunction with those described in both the EIAR and NIS.

5.1.2 Detailed PEMP's are to be prepared by the contractors once final design and engineering details are confirmed and the procurement process completed, prior to the start of offshore construction.

5.2 Marine Biosecurity Plan

5.2.1 A Marine Biosecurity Plan will be required to define the actions and processes necessary to eliminate the introduction of, and limit the spread of existing, Invasive Alien Species (IAS) by the project through the use and movement of marine vessels and infrastructure throughout the lifetime of Dublin Array.

5.2.2 Section 17(1) of the European Union (Invasive Alien Species) Regulations 2024 makes it an offence to (a) introduce into the state; (g) permit to reproduce, grow or cultivate, including in contained holding; or (h) release into the environment, an invasive alien species of national concern.

5.2.3 During the lifetime of the project, the Applicant and its Contractor(s) will implement a Marine Biosecurity Plan for Dublin Array.

5.2.4 The risk of transferring marine IAS to and from the offshore site must be kept to a minimum by ensuring appropriate bio-fouling management practices are implemented.

5.2.5 The following mitigation measures will be implemented to minimise environmental impacts relating to vessel operations throughout the project:

- A requirement for all vessels of 400 gross tonnage (gt) and above will be in possession of a current international Anti-fouling System (AFS) certificate3;
- A requirement for all vessels of 24 m or more in length (but less than 400 gt) to carry a declaration on AFS signed by the owner or authorised agent accompanied by appropriate documentation;
- A requirement for the details of all ship hull inspections and biofouling management measures to be documented by the Contractor and, where applicable, recorded in the Contractor's Planned Maintenance System;

[3] As required under the International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention).

- A requirement for all submersible/immiscible equipment e.g., ROVs (if required) to be subject to pre-use and post-use checks including checks for the presence of marine growth. All equipment will be required to be free of marine growth prior to mobilisation; and
- A requirement for all vessels to be compliant (where applicable) with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention, developed and adopted by the International Maritime Organisation (IMO)) (i.e., ships 400 gt and above designed/constructed to carry ballast water and operating in the waters of more than one Member State), specifically:
- A requirement, where relevant, for the management of ballast water in accordance with an approved Ballast Water and Sediments Management Plan and records of such management in a Ballast Water Record Book in accordance with the provisions of the Convention.

5.3 Marine Pollution Contingency Plan

5.3.1 A Marine Pollution Contingency Plan (MPCP) will be required to define the roles, responsibilities and response actions of the Applicant and its contractors in the event of a spill of hazardous substances (such as an oil/fuel oil spill) during the lifetime of the project.

5.3.2 An MPCP will be developed and incorporated into each vessels emergency procedures. A planning stage MPCP can be found in Annex A, with a brief summary included in this section.

5.3.3 The following measures will be implemented to minimise environmental impacts relating to marine pollution:

- A pollution response plan will be provided by each vessel operating on Dublin Array.
- Pollution response plans will detail locations of spill kits, shutoff valves and hazardous waste disposal procedures;
- Pollution response plans will include a flowchart for communication and escalation of any pollution incident within the vessel, between the vessel and the Applicant and between the contractor and relevant statutory agencies such as the Irish Coast Guard;
- Pollution response plans will include key emergency contact details, including the Marine Coordinator, Package Manager, Consent Manager vessel onshore project manager, Irish Coast Guard and any other relevant statutory bodies;
- Containment measures will be adopted to control run off from the vessel;
- The MPCP will comply with the National Maritime Oil/HNS Spill Contingency Plan (IRCG, 2020).

5.4 Chemical risk review

5.4.1 Prior to mobilisation to Dublin Array all vessels must complete a review of all chemicals and hazardous substances onboard.

5.4.2 The review will include details of each chemical and hazardous substance, volumes, storage location, location of relevant Material Safety Data Sheets (MSDS)[4], any specialised spill requirements and any training for substances listed, if required.

5.4.3 The review and the MPCP will be submitted to the Marine Coordinator and maintained for reference and submission in the event of any pollution incident.

5.5 Dropped objects

5.5.1 A Dropped Objects Plan will be required to establish guidelines for eliminating and/or retrieving any tools, equipment or other items dropping from vessels into the marine environment.

5.5.2 The Dropped Objects Plan will be provided to all vessels and contractors prior to mobilisation to site for incorporation into each vessels emergency procedures.

5.5.3 In the event of any objects dropped from vessels and not immediately retrieved or retrievable, a report will be made to the Marine Coordinator.

5.5.4 Details of the dropped object, including a description of the object dropped, its location, time of loss and details of any hazardous materials lost must be included in the report to the Marine Coordinator.

5.5.5 The Marine Coordinator will inform the relevant statutory bodies including the Irish Coast Guard, Marine Survey Office, Maritime Area Regulatory Authority and National Parks and Wildlife Service, if appropriate.

5.5.6 A recovery plan for the dropped object will be developed if possible and the necessary consents and approval sought for the recovery plan before any recovery is attempted.

5.6 Environmental Vessel Management Plan

5.6.1 An Environmental Vessel Management Plan (eVMP) will be implemented to provide a code of conduct to reduce the impact on the environment from vessels while operating within and between the Dublin Array project areas.

5.6.2 A Vessel Management Plan (VMP) for Dublin Array is available in Volume 7, Appendix 6 of the EIAR. The VMP includes details of the routing of vessels to and from construction sites and O&M work areas and ports. The eVMP will provide additional mitigation commitments to reduce the risk of collision and minimise the disturbance and displacement of marine mammals and bird species.

[4] A Material Safety Data Sheet (MSDS) is a fact sheet developed by manufacturers describing the chemical properties of a product.

5.6.3 The eVMP will include commitments to:

- Implement a maximum speed of 14 knots for all project vessels;
- Routing of vessels as outlined in the vessel management plan will be adhered to, in order to reduce the size of the area impacted by additional vessel traffic by Dublin Array; and
- Avoiding, where possible, rafting seabirds and feeding aggregations.

5.7 Waste Management Plan

5.7.1 Prior to mobilisation on site, all vessels must provide to the Applicant the Waste Management Plan onboard the vessel.

5.7.2 All waste disposal arrangements must comply with the European Union (Port Reception Facilities for the Delivery of Waste from Ships) Regulations 2022.

5.7.3 A draft Waste Management Plan can be found in Annex B.

Annexes

Registered office:
Unit 5,
Desart House,
Lower New Street,
Kilkenny
www.RWE.com

Dublin Array Offshore Wind Farm

Annex A: Marine Pollution Contingency Plan

Planning Stage

Date: February 2025

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Acronyms

Term	Definition
CRU	Commission for Regulation of Utilities
DCCAE	Department of Communications, Climate Action and Environment
DECC	Department of the Environment, Climate and Communications
DLRCC	Dún Laoghaire-Rathdown County Council
DTTAS	Department of Transport, Tourism and Sport
Dublin Array	Dublin Array Offshore Wind Farm
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
FAC	First Aid Case
HNS	Hazardous and Noxious Substances
HSA	Health and Safety Authority
ICS	Incident Command System
IRCG	Irish Coast Guard
LGD	Lead Government Department
LTI	Lost Time Injury
MARPOL	The International Convention for the Prevention of Pollution from Ships
MAS	Marine Assistance Service
MC	Marine Coordinator
MPCP	Marine Pollution Contingency Plan
MRCC	Marine Rescue and Coordination Centre
MRT	Maritime Response Team
MSO	Marine Survey Office
MTC	Medical Treatment Case
NMOC	National Maritime Operations Centre
O&M	Operations and Maintenance
OSP	Offshore Substation Platform
PAD	Petroleum Affairs Division
PIN	Petroleum Incident Notification

Term	Definition
RWC	Restricted Work Case
RWE	RWE Renewables Ireland Limited
SAR	Search and Rescue
SEM	Strategic Emergency Management
SOP	Standard Operating Procedure
SOPEP	Shipboard Oil Pollution Emergency Plan
WTG	Wind Turbine Generator

Glossary

Term	Definition
Health and Safety Authority	The national body for the regulation and promotion of work-related safety, health and welfare and the safe use of chemicals and products.
Hazardous and Noxious Substances	Any substance other than oil which, if introduced into the marine environment, is likely to create a hazard to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.
Marine Pollution Event	A marine pollution event is any spillage or escape of environmentally damaging material, such as oil or fuel oil products or other Hazardous and Noxious Substances (HNS) into the marine environment.
Oil Products	Petroleum in any form including crude oil, fuel oil, diesel oil, lubricating oil, sludge, oil refuse and refined products and any oil or oily mixture.
The International Convention for the Prevention of Pollution from Ships (MARPOL)	The main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.

1 Introduction

1.1 Purpose

1.1.1 This document is a planning stage Marine Pollution Contingency Plan (MPCP) for the Dublin Array Offshore Wind Farm, hereafter referred to as Dublin Array.

1.1.2 This plan provides a framework on prevention and avoidance of marine pollution events through risk identification, management and application of best practice measures. The MPCP also outlines the initial response actions to be taken in the event of a marine pollution event.

1.1.3 The scope of the MPCP is to cover all marine activities related to Dublin Array throughout its lifetime. This is to include the offshore infrastructure and the Operations and Maintenance (O&M) base in Dún Laoghaire.

1.1.4 This plan has been created prior to the submission of the planning application for Dublin Array. The MPCP will be a 'live' document, which will be updated as required while Dublin Array moves into the construction, O&M and decommissioning stages of its life cycle. These updates will take place with the input of detailed design, planning conditions and contractor input.

1.1.5 The overall aim of the MPCP is to provide guidance to Dublin Array personnel and contractors on the actions and reporting requirements in the event of a marine pollution event originating from offshore activities relating to Dublin Array and associated infrastructure.

1.1.6 The principal objective of this plan is to:

- Ensure the safety of personnel and integrity of vessels and windfarm assets;
- Effect counter-pollution measures to minimise, where possible, harm to environmental and commercial sensitivities;
- Minimise potential damage to the marine and coastal environments;
- Ensure the prompt notification of all relevant regulatory authorities; and
- Where practicable, utilise the prevailing environmental conditions to complement the response.

1.2 Guidance and legislation

1.2.1 In developing this plan, due regard has been given to the plans listed below and with reference to relevant legislation and guidelines, with which this MPCP may need to interact:

- Sea Pollution Act (1991);
- MARPOL Annex I Regulations for the Prevention of Pollution by Oil (1983);
- National Maritime Oil/HNS Spill Contingency Plan, Department of Transport (2020).

- Assessment and notification of a pollution incident. SOP 01-2020, Department of Transport (2020);
- Oil Spill Control Agents. SOP 03/2020, Department of Transport (2020); and
- Content and implementation of an oil/HNS spill contingency plan. SOP 05/2020, Department of Transport (2020) .

1.2.2 In addition to considering the above plans this document has been produced in conjunction with the following chapters of the Dublin Array Environmental Impact Assessment Report (EIAR), which together will consider all aspects of incident response:

- Project Environmental Management Plan (PEMP) (Volume 7, Appendix 1); and
- Construction Environmental Management Plan (CEMP) (Volume 7, Appendix 8).

1.2.3 Relevant staff working on Dublin Array and contractors will read and understand the principles outlined within the MPCP document.

1.3 Roles and responsibilities

1.4 Roles of regulatory bodies

1.4.1 In Ireland there is an adopted structure and procedure for response to marine pollution incidents, which clearly defines the roles and responsibilities of regulatory bodies. Under the National Maritime Oil/HNS Spill Contingency Plan (hereafter "National Contingency Plan"), the Department of Transport, Tourism and Sport[1] (DTTAS) is identified as the Lead Government Department (LGD) for marine and coastal pollution under the Strategic Emergency Management (SEM) National Structures and Framework. Responsibility for this function within DTTAS is delegated to the Irish Coast Guard (IRCG).

1.4.2 The IRCG is responsible for developing and coordinating an effective regime for response to marine casualty incidents, monitoring or intervening in marine salvage operations, and preparedness and response to pollution by oil and Hazardous and Noxious Substances (HNS) within the Irish Exclusive Economic Zone (EEZ).

1.4.3 Search and rescue (SAR), salvage and intervention activities will be prioritised above pollution response during a maritime incident. This would be in cases where actions to ensure safety of human life or to limit further pollution were needed. The IRCG maintains a National SAR Plan which would be activated as needed alongside the National Contingency Plan.

1.4.4 The IRCG's Marine Rescue and Coordination Centre (MRCC) is the internationally designated Marine Assistance Service (MAS) for Ireland. The main tasks of the MAS function are to:

- Receive reports from ships in need of assistance;

[1] Former government department name. Now known as the Department of Transport.

- Monitor the situation of the ship; and
- Act as a point of contact between the ship, other organisations and coastal authorities.

1.4.5 The IRCG response covers the procedures of the Incident Command System (ICS), in connection with marine pollution. This includes standing up the Maritime Response Team (MRT) and establishing the Marine Emergency Room (MER) within the National Maritime Operations Centre (NMOC).

2 Pollution sources and risk assessment

2.1.1 This section provides an overview of the type and scale of spills which may potentially arise. It looks at the potential sources and likelihood of spills that may occur from typical operations of Dublin Array. A summary of potential sources of pollution is outlined in Section 2.3.

2.2 Incident evaluation

2.2.1 Following international practice and guidance, Ireland has implemented a three-tiered approach to all aspects of marine pollution readiness and response. This approach means an appropriate response capability is identified and available to deal with spills commensurate to the risks. The three tiers are as outlined in Figure 1 and Table 1, which provide the determination steps to be followed.

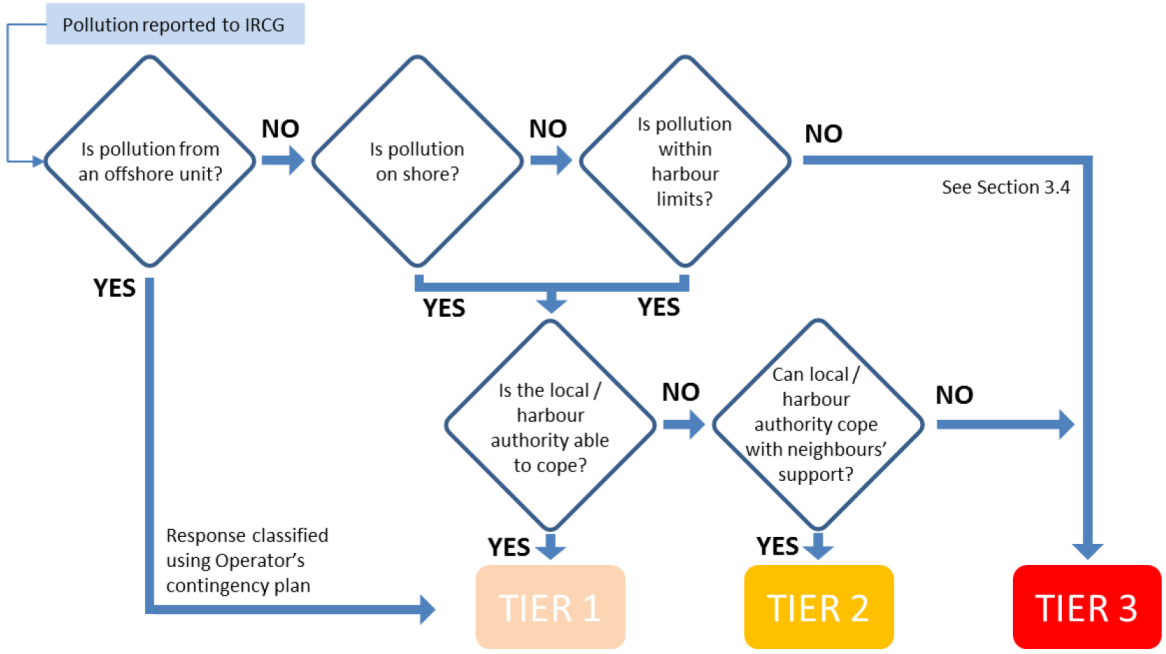

Figure 1: Determining the tiers of response. Taken from the National Contingency Plan,

Table 1: National Contingency Plan Categorisation of oil spill incidents.

Tier	Description
1 – Local	Responded to and resolved by the local authority, harbour authority or operator of offshore unit or oil/HNS handling facility, who must have an appropriate pollution emergency (spill contingency) plan.
2 – Regional	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. The pollution emergency plans should identify how the parties will work together.
3 – National	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 will involve a range of government departments. DTTAS is the lead government department (LGD) under the SEM framework. Coordination and oversight are by the IRCG, who have access to national resources and can request international support.

2.2.2 The level of response will be broadly dependent upon the tier classification. However, the specific response to a pollution incident will be determined by the local/harbour authority and IRCG. Please note that spills of any size are reportable to the regulator.

2.2.3 In the event of a Tier 1 or Tier 2 incident, the IRCG will monitor the incident and provide advice if necessary in respect of a response action. In the event of, or in the likelihood of, an escalation in an incident, the IRCG may assume control.

2.3 Potential sources of pollution

2.3.1 The sources of a spill will be dictated by the hydrocarbon and chemical inventories on the vessels and offshore installations. In practice, due to precautions such as training, operating procedures and engineered solutions, the majority of the spills that may occur are likely to be small. The main source of hydrocarbons associated with Dublin Array will be marine fuels associated with construction and operations and maintenance (O&M) vessels. The quantities of fuel will be limited to the bunkering capabilities of the vessels. This will vary greatly across the scope of vessel types operating in Dublin Array. The potential worst-case spill scenario associated would be a complete loss of fuel inventory as a result of collision. Once spilled in the marine environment oil immediately begins to undergo weathering (physiochemical and biological degradation); 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. Details of the potential pollutant types from Dublin Array will be identified in the Chemical Risk Review carried out by all vessels prior to operating on the project.

Pollution from wind farm vessels

2.3.2 The potential for major spills is most likely to come from construction and O&M vessels. Such potential spills will be covered by a vessel's own Shipboard Oil Pollution Emergency Plans (SOPEP) which is regulated by the Marine Survey Office (MSO). All vessels working (either on direct contract or subcontract) within the wind farm, which are required under Regulation 26, Annex 1 of MARPOL 73/78 to do so, will carry a SOPEP, complete with suitable oil response equipment. Smaller craft such as work boats operating under a work boat code will carry on board procedures and arrangements which address the prevention of pollution and the action to take in the event of pollution. These requirements will be checked by Dublin Array during vessel audits.

2.3.3 In considering the numbers and types of vessels, the controls exercised over them together with their on board operating procedures (which are monitored and are subject to on-going monitoring and verification audits), the potential for pollution originating from a vessel within the wind farm and engaged in wind farm activities is assessed as follows:

Table 2: Potential for pollution originating from a vessel

Response Required	Likelihood	Examples
Tier 1	Unlikely	Leak from vessel; or release of oil from damaged container during transport/transfer to WTG.
Tier 2	Very Unlikely	Rupture of fuel tanks; or vessel to vessel/vessel to WTG collisions.
Tier 3	Extremely Unlikely	Freak series of events such as collision of multiple vessels or collision of SOV with an oil tanker.

Pollution from Wind Farm Structures

2.3.4 Once constructed, each Wind Turbine Generator (WTG) will typically contain the oils and fluids outlined in Table 3 for ongoing safe operation and maintenance. The quantities described illustrate the maximum normal amount contained within the WTG systems required for correct operation. No oils or fluids are routinely stored in the WTG which are not already part of the system.

Table 3: Quantities of oils and fluids per WTG

Material type	Quantity (l) 236 RD	Quantity (l) 250 RD	Quantity (l) 278 RD
Greases	780	819	1086
Drive Train Oil	3,000	3,150	4,205
Hydraulic Oil	1,500	1,575	2,142

Material type	Quantity (l) 236 RD	Quantity (l) 250 RD	Quantity (l) 278 RD
Nitrogen	98,000	102,900	137,340
Coolant	17,700	18,585	24,780
Transformer Oil	10,500	11,025	14,730

2.3.5 The potential of pollution originating from wind farm infrastructure is assessed as follows:

Table 4: Potential of pollution originating from wind farm infrastructure

Response Required	Likelihood	Examples
Tier 1	Unlikely	Small release of grease, gear oil, hydraulic oil, ester oil, or glycol.
Tier 2	Very Unlikely	Full release of glycol, ester oil or hydraulic oil.
Tier 3	Extremely Unlikely	Catastrophic failure of most/all turbines leading to full release of oils and glycol.

Pollution from other vessels

2.3.6 It is possible that pollution could originate from outside the area of Dublin Array (such as in the event of two large vessels colliding). The wind farm array is close to two routes used by shipping heading to and from Dublin Port and as such could result in the area of the wind farm being susceptible to pollution originating from other sources.

2.3.7 The nature of cargoes carried by these vessels is very diverse. When considering potential pollution both the cargo and fuel on board the vessels passing in the proximity of the wind farm requires consideration.

2.3.8 It is not considered practicable to identify every possible pollutant and its possible cause for pollution arising from a passing vessel, however the most likely are marine gas oil, crude and heavy fuel oil, and liquid chemicals. In the event of a pollution incident becoming apparent the type, properties and associated hazards associated with the pollutant should be determined.

2.3.9 In considering the numbers and types of vessels, taking into account the controls exercised under the existing regulatory regime and also considering the Dublin Port Authority and MSO routing measures on the approach to Dublin Port, the potential for pollution originating from a vessel outside the wind farm is assessed as follows:

Table 5: Potential for pollution originating from a vessel outside the wind farm

Response Required	Likelihood	Examples
Tier 1	Unlikely	Leak from other vessel; or release of oil/other substance from non-Dublin Array vessel.
Tier 2	Very Unlikely	Rupture of fuel tanks on non-Dublin Array vessel; or non-Dublin Array vessel to non-Dublin Array vessel/non-Dublin Array vessel to WTG collisions.
Tier 3	Extremely Unlikely	Freak series of events such as collision of multiple vessels or collision of a non-Dublin Array vessel with an oil tanker.

Pollution from other marine structures

2.3.10 The Dublin Array Offshore Substation Platform (OSP) is located within the wind farm area and will be in the ownership of Eirgrid. The OSP will contain oils and fluids as shown in Table 6. These will be stored in a dump tank before being transferred to a Platform Supply Vessel (PSV) for transfer back onshore.

Table 6: Quantities of oils and fluids to be stored in the OSP during the operation phase

Material type	Quantity
Transformer Silicon/ester oil (t)	300
Diesel fuel (l)	3,000
Sulphur hexafluoride (SF6) (kg)	2,000
Glycol coolant (l)	250
Batteries (kg)	5,000
Water (l)	4,000

2.3.11 Other offshore windfarms will be adjacent to Dublin Array. The WTGs and offshore substations of these projects will contain gear, hydraulic, light fuel and transformer oils. As these projects will be constructed in a similar timescale to Dublin Array, it is assumed that secondary containment controls will be in place in the event of primary containment failure. However, the oils used in wind farm operation are of lighter fractions which will disperse rapidly by the natural sea action.

2.3.12 The potential for pollution originating at the Dublin Array OSP and other adjacent projects impacting Dublin Array is assessed as follows:

Table 7: Potential for pollution originating at the Dublin Array OSP and other adjacent projects

Response Required	Likelihood	Examples
Tier 1	Unlikely	Small release of oil/glycol that has not been contained locally.
Tier 2	Very Unlikely	Medium release of oil/glycol from Dublin Array OSP/an adjacent project structure, such as a wind turbine.
Tier 3	Extremely Unlikely	Large-scale release of oil/glycol from Dublin Array OSP/an adjacent project structure such as an offshore substation.

2.3.13 In the event of pollution arising from Dublin Array OSP or other projects, the Eirgrid Emergency Response Plan or the Marine Pollution Contingency Plan for other projects will be implemented by the respective operator.

Pollution occurring on the Quayside

2.3.14 Pollution incidents may arise from infrastructure and equipment located on the quayside prior to loading or subsequent to unloading operations. The sources of polluting materials on the quayside will vary between project stages (construction, O&M and decommissioning) as well as within project stages depending on specific operations. Spill containment provisions and emergency spill containment kits will be made readily available.

2.3.15 This pollution source is relevant to the quayside location of the O&M base in Dún Laoghaire harbour and at nominated load-out/assembly/marshalling ports used during construction.

2.3.16 The potential for pollution originating at the quayside are assessed as follows:

Table 8: Potential for pollution originating at the quayside

Response Required	Likelihood	Examples
Tier 1	Unlikely	Small release of oil/glycol that has not been contained locally.
Tier 2	Very Unlikely	Medium release of oil/other substance from a vessel or storage container.
Tier 3	Extremely Unlikely	Freak series of events leading to catastrophic failure of one or more of the marine diesel oil tanks.

2.3.17 In the event of pollution arising from the quayside operations the appropriate National Contingency Plan measures shall be implemented.

Quayside interfacing contingency plans

2.3.18 Dún Laoghaire Harbour has an established Emergency Management Plan (DLRCC, 2024) and a separate Oil Spill Contingency Plan. In the event of any marine pollution event on the quayside, the Dún Laoghaire harbour masters office will immediately be informed.

2.3.19 The implementation of these harbour specific plans will be carried out as appropriate within the National Contingency Plan measures.

3 Response procedure

3.1 Response overview

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

3.1.2 Dublin Array require that any spill (actual or probable) into the marine environment, no matter how small, and no matter whether it arises from Dublin Array activities or not, is responded to following the procedures set out in the MPCP. It is a priority to prevent pollution in the first instance, however should pollution arise as a result of wind farm activities, or in the vicinity of the wind farm, then actions shall be taken to contain the pollution, and where possible to recover the polluting substances or the source of the pollution.

3.1.3 In all circumstances the health and safety of wind farm personnel, other sea users and of others who may be affected, will take priority over protection of the environment or property.

3.1.4 In deploying resources to contain pollution, consideration will be given to the particular areas of environmental and commercial sensitivity including designated and protected sites.

3.1.5 In such an event, Dublin Array will prioritise the response under the PEAR principle:

- People;
- Environment;
- Asset; and
- Reputation.

3.1.6 Therefore, where there is no potential injury or risk to personnel on site, the environmental aspect of the spill will take priority.

3.1.7 The response procedures outlined in this section are based on the response initiation section of the National Maritime Oil/HNS Spill Contingency Plan.

3.1.8 Modification of this planning stage MPCP post-consent will be subject to project specific details and any conditions as required under the granted planning permission.

3.2 Incident management

3.2.1 Dublin Array personnel and contractors will immediately report any pollution events to the Marine Coordinator (MC).

3.2.2 The master of a ship and the MC of Dublin Array are required to report immediately all oil/HNS spills, or the observation of such pollution, to either the IRCG or the harbour master, if inside harbour limits. The harbour-master will subsequently inform the IRCG in the latter case.

3.2.3 In the case of incidents which occur outside of the limits of Dún Laoghaire harbour, Dublin Array shall also inform, without delay, the Commission for Regulation of Utilities (CRU) using the Petroleum Incident Notification (PIN) Form and the Petroleum Affairs Division (PAD) of the Department of Communications, Climate Action and Environment[2] (DCCAE).

3.2.4 In the event of any spills occurring in the vicinity of Dublin Array infrastructure or vessels, that do not originate from Dublin Array activities, the reporting of such pollution events will be reported following the same procedure as events which originate from Dublin Array activities.

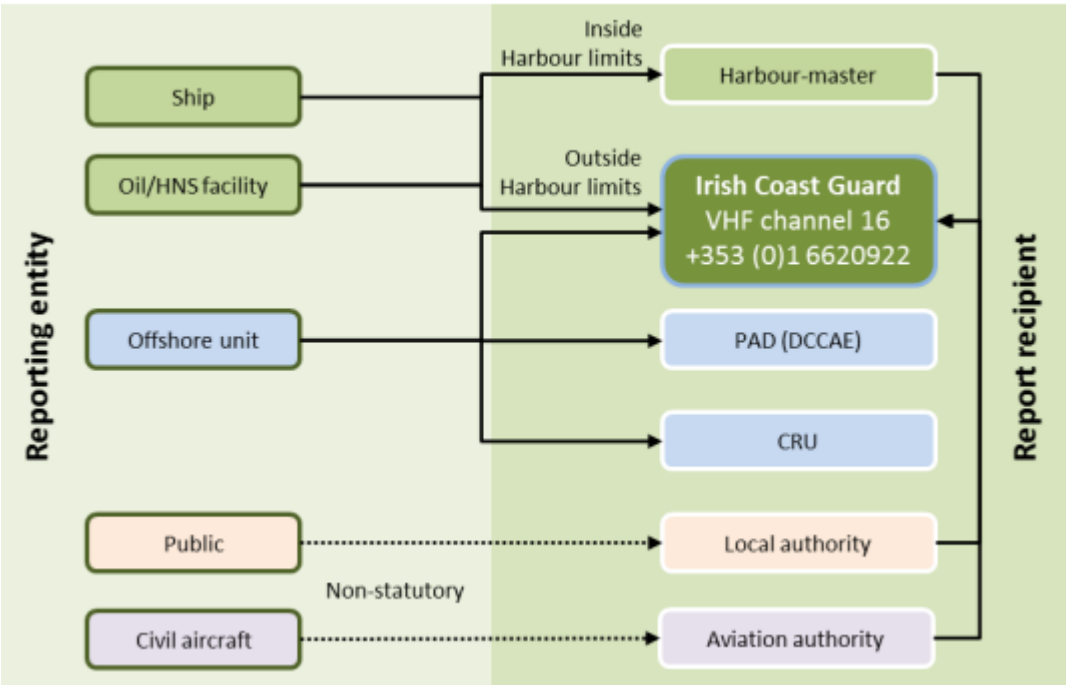

Figure 2: Pollution reporting routes

3.2.5 Following reporting to the statutory bodies as outlined above, the Dublin Array Incident Notification Procedure (EcoDoc No. 004009036) will be implemented and followed, as summarised in Section 3.3.

3.3 Post incident reporting

3.3.1 All incidents classified as HIGH or MEDIUM (and where appropriate LOW) as well as other occurrences that present a high potential severity and medium potential severity must be investigated. The investigation shall be carried out by competent persons, and shall establish contributing factors and root causes, and the conclusion and any recommendations shall be shared with Dublin Array as soon as practicable.

[2] Former governmental department name. Now known as the Department of the Environment, Climate and Communications (DECC)

3.3.2 If an incident or Dangerous Occurrence is reportable to the Health & Safety Authority (HSA) according to the Safety Health & Welfare at Work, Reporting of Accident and Dangerous Occurrences Regulations 2016, the Contractor shall be responsible for reporting to that authority. The Contractor will confirm to Dublin Array in writing that the incident has been reported and provide a copy of the IR 1 notification.

Internal incident classification

3.3.3 All Incidents are categorised as follows:

- Actual classifications of High, Medium, or Low; and
- Potential Classifications of High/Potential High, Medium, or Potential Medium or Low.

3.3.4 Contractors shall report all incidents and near misses to Dublin Array, according to the following incident classifications and agreed timescales:

Actual/Potential high severity incidents

3.3.5 To be reported immediately by phone **within the hour to Dublin Array's Representative.**

3.3.6 Actual/Potential High incidents are defined as:

- Health & Safety: Fatality, major life changing injury, or serious long-term injury;
- Asset: Incident that causes downtime and/or damage cost over 1M €; and
- Environment: Serious or Major environmental incident: Serious environmental damage, which is expected to last longer than four weeks of remediation activities at site or cannot be remediated and therefore causes long-term damage and/or Regional, National, or international media interest, and/or High stakeholder concern (Multiple community complaints), and/or Civil or Criminal prosecution.

Actual/Potential medium severity incidents

3.3.7 To be reported verbally to Dublin Array's Representative as soon reasonably practicable. Formal notification via email within 3 working days.

3.3.8 Actual/Potential Medium incidents are defined as:

- Health & Safety: Lost Time Injury (LTI) Restricted Work Case (RWC) Medical Treatment Case (MTC);
- Asset: Incidents that cause downtime and/or damage cost between €200k - €1M; and

- Environment; Moderate environmental incident: Moderate environmental damage that is expected to be resolved within a period of max. four weeks remediation activities at site, and/or Local media interest, and/or Moderate stakeholder concern (Repeat community complaints), and/or regulatory enforcement action (e.g.: fine, notice, order).

Actual/Potential low severity incidents

3.3.9 To be reported to the Employer's Representative as soon as reasonably practicable timescale and not later than within 7 days, to be included in the monthly KPI sheet.

3.3.10 Actual/Potential Low incidents are defined as:

- Health & Safety: First Aid Case (FAC);
- Asset: Incidents that cause downtime and/or damage cost less than 200k €; and
- Environment: Minor environmental incident: Minor environmental damage that is likely to be remedied by simple means within a period of max. 7 days of remediation activities at site, and/or Action/control required, and/or Warning letter from the Authority, and/or Low stakeholder concern (isolated community complaint).

Potential severity (near misses) incidents

3.3.11 Near Misses are defined as having the potential to cause any of the above scenarios.

Unit 5,
Desart house,
Lower New Street,
Kilkenny
www.RWE.com

Registered office:
Unit 5,
Desart house,
Lower New Street,
Kilkenny

Dublin Array Offshore Wind Farm

Annex B: Waste Management Plan

Planning Stage

Date: January 2025

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Acronyms

Term	Definition
CEMP	Construction Environmental Management Plan
CTV	Crew Transfer Vessel
Dublin Array	Dublin Array Offshore Wind Farm
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
IMDG	International Marine Dangerous Goods
KPI	Key Performance Index
MARPOL	International Convention for the Prevention of Pollution from Ships
MSDS	Material Safety Data Sheet
MPCP	Marine Pollution Contingency Plan
PEMP	Project Environmental Management Plan
O&M	Operations and Maintenance
OSP	Offshore Substation Platform
OWF	Offshore Wind Farm
RACI	Responsible; Accountable; Consulted; Informed
WCN	Waste Consignment Note
WTG	Wind Turbine Generator
WTN	Waste Transfer Note

1 Introduction

1.1 Purpose

1.1.1 This document is a planning stage Waste Management Plan for the Dublin Array Offshore Wind Farm (hereafter referred to as Dublin Array).

1.1.2 This plan provides a framework on the handling, storage and disposal of waste produced by Dublin Array through management and application of best practice measures.

1.1.3 The scope of the Waste Management Plan is to cover all marine activities related to Dublin Array throughout its lifetime. This is to include the offshore infrastructure and the Operations and Maintenance (O&M) base in Dún Laoghaire.

1.1.4 This plan has been created prior to the submission of the planning application for Dublin Array. The Waste Management Plan will be a 'live' document, which will be updated as required while Dublin Array moves into the construction, O&M and decommissioning stages of its life cycle. These updates will take place with the input of detailed design, planning conditions and contractor consultation.

1.1.5 The overall aim of this plan is to establish and maintain a management system for the production, handling, transport, storage, treatment and disposal of waste associated with offshore activities during the lifetime of Dublin Array.

1.1.6 The principal objective of this plan is to:

- Ensure the safety of personnel and integrity of vessels and windfarm assets;
- Introduce waste management measures to minimise, where possible, harm to environmental and commercial sensitivities; and
- Minimise potential damage to the marine and coastal environments;

1.2 Guidance and legislation

1.2.1 In developing this plan, due regard has been given to the plans listed below and with reference to relevant legislation and guidelines, with which this Waste Management Plan may need to interact:

- Waste Management Act, 1996;
- Environment Protection Agency (EPA) Waste Classification (2018) Guidance; and
- International Convention for the Prevention of Pollution from Ships (MARPOL) Annex V (1988).

1.2.2 In addition to considering the above guidance and Legislation this document has been produced in conjunction with the following chapters of the Dublin Array Environmental Impact Assessment Report (EIAR), which together will consider all aspects of incident response:

- Project Environmental Management Plan (PEMP) (Volume 7, Appendix 1); and
- Construction Environmental Management Plan (CEMP) (Volume 7, Appendix 8);

1.2.3 Contractors will comply with the requirements contained herein and allocate costs and resources accordingly. Prior to commencement of works, the appointed Contractor will prepare a Waste Management Plan with detailed processes applicable to their operational requirements.

1.2.4 The general methods and principles contained herein, as well as within referenced legislative instruments, shall be adhered to by the Contractor in developing their waste management procedures. This Waste Management Plan seeks to act as a reference aid as well as a management document.

2 Roles and responsibilities

2.1.1 Dublin Array has the accountability and responsibility for ensuring that all applicable regulatory requirements for the development, construction and operation of the Offshore Wind Farm (OWF) are identified and that processes are in place to ensure full compliance. Accordingly, the roles and responsibilities for the Waste Management Plan are identified in the RACI chart[1] below in Table 1:

[1] A RACI chart shows the hierarchy and delegation of responsibilities for a set of tasks based on four levels: Responsible; Accountable; Consulted; Informed

Table 1: Dublin Array Waste Management Plan RACI Chart

Procedural responsibilities R Responsible for performing the action A Accountable to ensure action happens C Consulted during the action I Informed after the action is complete	Senior Offshore Site Manager	Development Manager	Package Managers	Offshore Consent Manager	Environmental Manager	Vessel Master	Contractors	Workforce
Ensure adequate resources and budgetary support are provided for waste management services and overall implementation of this Waste Management Plan.	A	R	R			R		
Undertakes waste management compliance and duty of care audits, document review and reporting, ensures only registered waste contractors are employed for the work scope, communicates results from audits and Key Performance Index (KPI) Targets.		A			R	R	R	
Implements Waste Management Plan in accordance to MARPOL Annex IV.					I	A&R		
Maintain the waste returns spreadsheet and associated documentation (waste transfer notes and consignment notes).	A		R		R		R	
Implements waste awareness campaigns, monitor changes in legislation, provides adequate signage on waste receptacles.		A			C&I	R	A&R	
Provides training and advice on waste legislation, monitoring, handling, storage, transport and disposal.		A			R		R	
Inform all contractors of the Waste Management Plan and disseminate associated documentation as required.	A	R	R	R	I			
Comply with provisions of the waste hierarchy and Waste Management Plan	A	R	R	R	R	R	R	R

3 Waste management process

3.1 Waste hierarchy

3.1.1 Dublin Array and Contractors shall take all reasonable steps to apply the waste hierarchy as far as reasonably practicable by avoiding waste generation in the first instance and based on the best environmental outcome give priority to reuse, recycling, recovery and last of all disposal. For example, Dublin Array and Contractors shall take all reasonable steps to reduce material inputs; employ substitutes for toxic chemicals and select environmentally friendly raw materials and services where possible.

3.1.2 Measures that will be implemented to reduce the amount and toxicity of waste that is generated include:

- During all phases of the Project, but especially during the planning and design phase, contractors will be required to verify that they have taken into consideration waste reduction techniques and strategies as part of their bid for purchasing and management;
- Contractors will be required to have a Reuse/Recycle Plan for their portion of the Project work; and
- All waste will be segregated so as to minimize the volume of toxic waste by avoiding comingling of wastes.

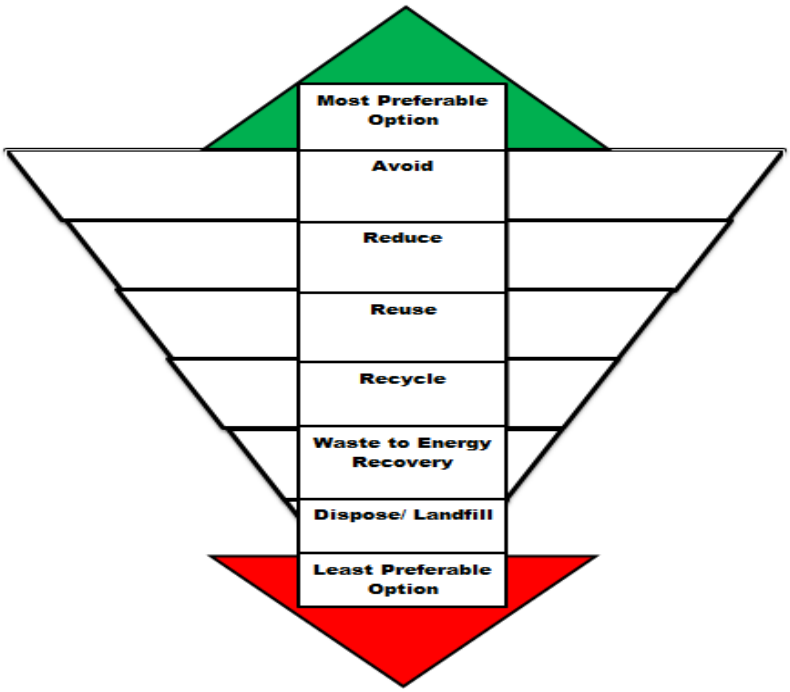

Figure 1: The Waste Hierarchy

3.2 Waste management plan implementation

3.2.1 The Waste Management Plan provided by Contractors shall be compliant with the requirements of this plan and shall include but not be limited to:

- A description of each waste type expected to be produced in the course of the work scope;
- An estimate of the quantity (volume) of each different waste stream/type of waste expected to be produced;
- A written statement demonstrating what actions were taken to minimise the volume of each type of waste produced prior to commencement of the activity generating the waste;(Reuse, Recycle, Recover, Dispose) including any treatment;
- The storage arrangements for each waste type; and
- Procedures for identification of the waste management actions proposed for each different waste type, including re-using, recycling, recovery and disposal.

3.3 Waste management principles

3.3.1 All waste generated from the project operations must be adequately controlled during storage and transportation without causing harm or pollution to the environment. Dublin Array and Contractors shall:

- Use containers suitable for the composition and constituent of waste contents-check that containers are not corroded or worn out to minimise the risk of accidental spillage or leaks; containers used for storing wastes will be compatible with their contents and appropriate in terms of volume and shape (for filling/emptying the material that is being stored). Only containers in good condition will be utilised;
- Bungs and lids will be securely fastened or other forms of covering will be provided. Waste storage containers will also be clearly labelled, indicating the characteristics of the contents, and data on toxicity and/or other potential hazards. Storage of hazardous waste will be carried out in accordance with the material safety data sheet (MSDS) and in a designated area, with a suitable surface and a method to contain any leakage or contaminated runoff water;
- Ensure waste undergoes basic pre-sorting and segregation on site before it is transferred to an authorised/licensed disposer;
- Ensure that the description of the waste is accurate and contains all the information for safe handling, transport, treatment, recovery or disposal by subsequent holders;

- Ensure that the transfer of waste is covered by a Controlled Waste Transfer Note (WTN) or Hazardous Waste Consignment Note (WCN) as appropriate, and ensure copies are available for spot audits (these should include relevant details such as the waste codes for each type of waste being transferred; the NACE code for the business; and Waste Licence for the Waste Contractor and signed as they are legal documents);
- Ensure only companies authorised to carry out collection, transport and final treatment are utilised;
- Ensure that waste is stored in a manner that one distinct waste stream does not contaminate another, e.g. oil contaminated rags or cardboard must not be placed in with the general waste, which is destined for landfill;
- Encourage the workforce to think about where they place their waste and discharge the waste hierarchy;
- Ensure liquid waste is held in suitable containers where the contents cannot escape and find a pathway to a sensitive receptor, such as controlled waters, surface water drains or un-made ground;
- Ensure that waste receptacles are lidded or covered to prevent contents becoming airborne in high winds. Likewise, consideration shall be given to the storage of waste liable to be affected by rainfall or scavenging animals' e.g. waste electrical and electronic equipment contain hazardous substances and as such shall be stored in dry conditions whilst awaiting collection or food waste shall be kept in a sealed receptacle to prevent vermin infestation;
- Where practical ensure waste receptacles are stored at least 10 metres from any watercourse/controlled water;
- Ensure waste is transported in accordance with legal and duty of care requirements;
- Ensure waste receptacles are clearly labelled in accordance to EPA (2018) where applicable;
- Ensure waste is transported from site at an appropriate frequency by a registered waste carrier to prevent overfilling of waste receptacles/containments facilities;
- Ensure that where possible packaging material is returned to the originator for reuse instead of recycling or disposal;
- Ensure that cleaning activities (e.g. for plant, vehicles, wheel washes, concrete truck wash out etc.) are carried out in an appropriate enclosed area and waste water captured for treatment and as per the licencing requirements or applicable legislation; and

- Ensure waste is assessed for its chemical composition and classified accordingly.

3.4 Waste identification and classification

3.4.1 All wastes generated by Dublin Array shall be classified in accordance with waste regulations. This requires wastes to be classified as either hazardous or non-hazardous based on specific characteristics. If any waste from an unidentified source is discovered, it will be treated as hazardous (taking a precautionary approach) until an analysis is carried out so as to enable the correct characterization and handling of the materials and a suitable management route identified.

Non-hazardous waste

3.4.2 Non-hazardous wastes are general wastes that do not pose any harm to human health and/or do not pose a significant risk of damage to the natural environment.

Hazardous waste

3.4.3 Hazardous wastes are wastes that can potentially be harmful to human health and/or could potentially damage the natural environment if not managed and disposed of appropriately. They include wastes which have any of the following characteristics:

- Explosive;
- Flammable;
- Toxic;
- Infectious;
- Carcinogenic;
- Radioactive;
- Release flammable or toxic gases on contact with water; and
- Organic peroxides etc.

3.4.4 Despite being hazardous, several types of hazardous wastes can and should be recycled, to the extent practical (e.g. waste oils, batteries etc).

Unidentified waste

3.4.5 Where materials of unknown type or composition are identified, they will be presumed to be hazardous waste until further investigation (which may include sampling) can be undertaken to provide sufficient information about the composition or origin of the material so as to enable a decision about its appropriate management. If the material is determined to be waste and the risks have been assessed, the integrity of the storage container, if any, will be evaluated and the waste will be transferred to an appropriate management area, where it can be properly managed and/or disposed of.

3.5 Vessel generated waste

3.5.1 All waste generated from the vessel operations must be adequately controlled during storage and transportation without causing harm or pollution to the environment.

3.5.2 Dublin Array and Contractors shall ensure that vessels employed to conduct construction activities comply with Annex V of MARPOL 73/78 and have an adequate ship waste/garbage management plan.

3.5.3 Any offshore discharge e(bilge, ballast water) shall be compliant with current MARPOL legislation. Monitoring records in relation with the disposal of greywater, bilge water or ballast water during the construction phase must be retained on the vessel.

3.5.4 Transport of waste to the onshore port or site shall comply with International Marine Dangerous Goods (IMDG) regulations were applicable. Waste transported to shore will be secured to avoid loss and damage and control measures implemented to contain any spillage on deck.

3.5.5 All vessels must provide notification 24 hours prior to shipment of waste onshore to the marine agent/port reception facilities.

3.6 Offshore infrastructure generated waste

3.6.1 The offshore infrastructure of Dublin Array in the context of this Waste Management Plan refers to the Offshore Substation Platform (OSP) and Wind Turbine Generators (WTGs).

3.6.2 As normally unmanned installations, the current arrangements for waste management is that all construction and operational waste generated on the OSP and WTGs is removed daily by the operatives/technicians via the Crew Transfer Vessels (CTVs).

3.7 Waste records and documentation

3.7.1 Records of all waste generated by Dublin Array and its Contractors will be kept and retained.

3.8 Training and awareness

3.8.1 Dublin Array Contractors shall ensure that training and awareness of waste management principles is provided to site personnel. This shall cover site rules regarding waste management. Awareness materials shall be displayed to remind staff of the site rules and their responsibility. In addition, waste management refresher training shall be delivered through toolbox talks - particularly if any issues are identified through the audit and monitoring protocols.

3.9 Accidental spills

3.9.1 All spillages of waste must be cleaned without delay. Waste spillages should not be left unattended or unsecured. It is the responsibility of the Contractor working in that area to clean up the spillage. All environmental incidents shall be handled in accordance to the Dublin Array Marine Pollution Contingency Plan (MPCP) as described in the PEMP.

3.10 Assurance

3.10.1 Periodic audits to ensure compliance with this plan and all relevant associated plans shall be undertaken, as a minimum these shall cover all aspects of works involving waste management.

3.10.2 Dublin Array will require Contractors to conduct audits on all waste contractors and waste disposal facilities prior to using them for the first time to ensure they meet Dublin Array's standards and expectations in terms of their environmental controls and health and safety standards.