

# Appendix 5-3: Marine Invasive Non-Indigenous Species Management Plan





# ORIEL WIND FARM PROJECT

## Environmental Impact Assessment Report Appendix 5-3: Marine Invasive Non-Indigenous Species Management Plan

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## ORIEL WIND FARM PROJECT – MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN

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# 1 INTRODUCTION

## 1.1 Background

This Marine Invasive Non-Native Species Management Plan (MINNSMP) has been prepared by RPS on behalf of Oriel Windfarm Limited (the Applicant) to support the Environmental Impact Assessment Report (EIAR) for the Oriel Wind Farm Project (hereinafter referred to as ‘the Project’). This MINNSMP considers the installation, operation and maintenance, and decommissioning of the offshore infrastructure within the waters to the east of Dundalk Bay, County Louth (Figure 2-1).

This document will be further developed in advance of the construction phase of the Project and will incorporate relevant consent conditions.

The purpose of the MINNSMP is to set out the approach to invasive species management and mitigation in respect of the Project, providing an outline of the measures proposed to be implemented to facilitate biosecurity control and to minimise potential impacts on the local and wider environment.

Several invasive non-native species (INNS), including the slipper limpet *Crepidula fornicata*, soft shelled clam *Mya arenaria*, oyster thief *Colpomenia peregrina*, Darwin’s barnacle *Austrominius modestus*, and orange-tipped sea squirt *Diadumene lineata* have been recorded in low to very low abundances within a highly conservative 20 km buffer surrounding the offshore wind farm area, although the majority of records were only single individuals sighted in and around Carlingford Lough to the north of the Project (National Biodiversity Network (NBN) Gateway, 2022).

This plan has been drawn up to assess the risk of introduction and spread of INNS associated with the Project and to present appropriate measures to minimise these risks as much as possible following best guidance (Cook *et al.*, 2014, Payne *et al.*, 2015). It should be noted that guidance documents from the UK (e.g. GB INNS, 2008, Cook *et al.*, 2014, Payne *et al.*, 2015) have been referred to, alongside Invasive Species Ireland (ISI, 2021) which were developed for aquaculture applications, in the absence of similar best practice guidance in Ireland for this project type.

## 1.2 Scope

The remit of the MINNSMP is for the Project activities taking place below the High Water Mark (HWM).

## 1.3 Purpose

The purpose of this outline MINNSMP is to ensure all procedures pertaining to marine works (including construction, operation and maintenance and decommissioning of subsea structures) and vessel operations follow best practice guidance, preventing and reducing the risk of possible spread or introduction of INNS into the waters of the Project.

The method employed follows the principles of the GB INNS Framework Strategy (GB NNSS, 2008), although consideration has also been given to guidelines from Invasive Species Ireland (ISI, 2021), noting that these were developed for the aquaculture industry. The INNS Framework Strategy involves a three-tier approach:

- Prevention: Prevent all INNS from entering the waterbody in question;
- Rapid response: Detection of INNS as early as possible, monitor and possible eradication of INNS present; and
- Control and containment: Should proliferation of INNS be too great for eradication, control and containment of populations will be required.

This MINNSMP focuses on “Prevention”, in line with the INNS Framework Strategy, with a view to avoiding “rapid response” and “control and containment” methods where possible.

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### **1.4 Document structure**

The MINNSMP is structured as follows:

- Section 2: Project Description;
- Section 3: Marine Invasive Non-Native Species Management Plan Methodology; and
- Section 4: Oriel Wind Farm Project Marine Invasive Non-Native Species Management Plan.

## **2 PROJECT DESCRIPTION**

### **2.1 Project characteristics**

The offshore wind farm area is located in the Irish Sea, off the coast of County Louth (approximately 22 km east of Dundalk town centre and 18 km east of Blackrock). The closest wind turbine will be approximately 6 km from the closest shore on the Cooley Peninsula. The offshore cable corridor extends approximately 16 km southwest from the wind farm area to the landfall south of Dunany Point (Figure 2-1).

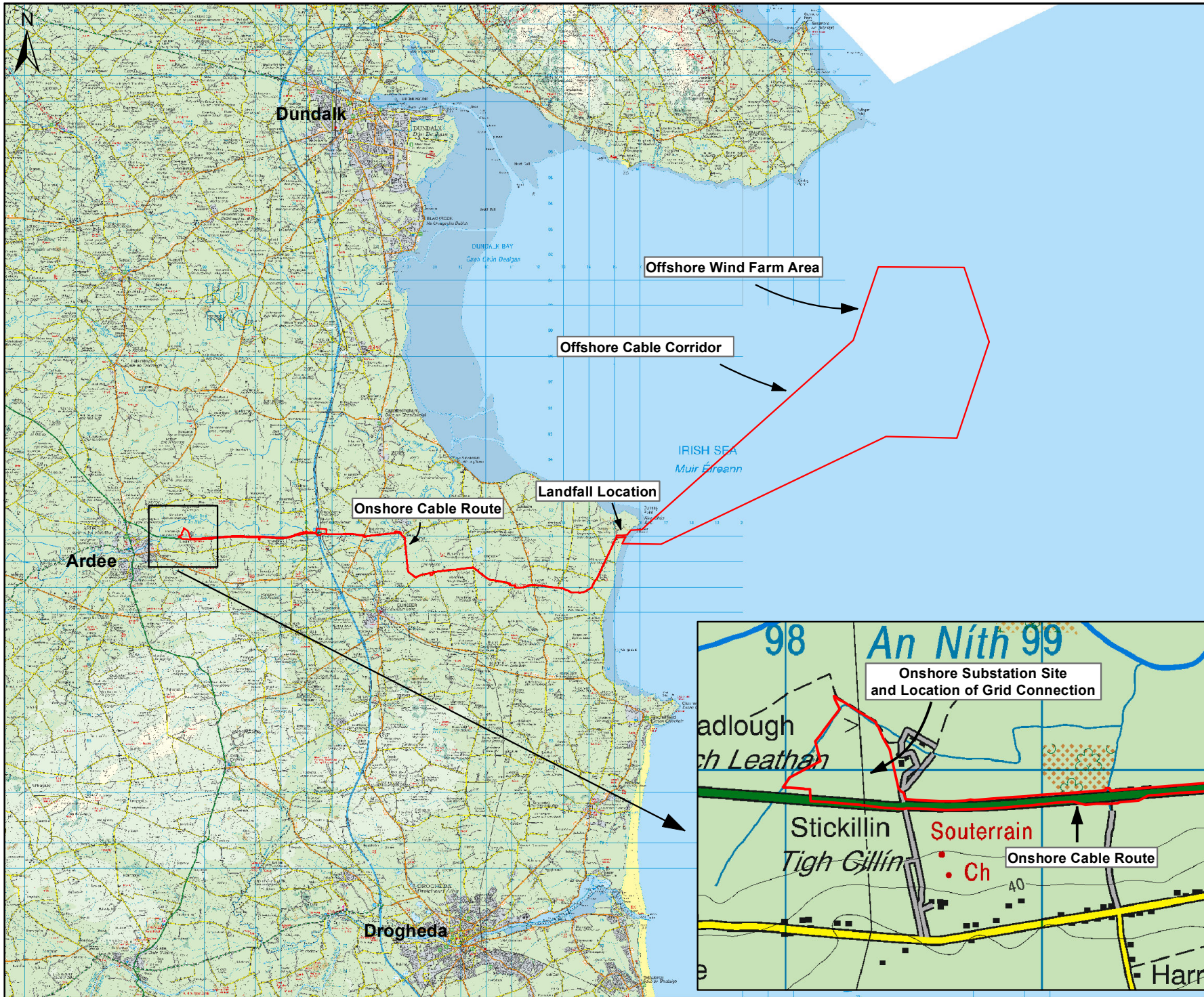
The Project will consist of the following key components:

- 25 wind turbine foundations (monopiles) attached to the seabed;
- 25 wind turbines (each comprising a tower section, nacelle and three rotor blades);
- One offshore substation (OSS) and associated foundations (monopiles) attached to the seabed;
- One OSS topside infrastructure (for the purposes of this report, the term OSS is used to refer collectively to the platform structure and the topside equipment);
- A network of 41 km of inter-array cabling;
- 16 km of offshore cable utilising the consented offshore cable corridor; and
- Scour protection and cable protection.

The offshore wind farm area (i.e. the area in which the turbines, inter-array cables and OSS will be located) covers 27.7 km<sup>2</sup>. The offshore cable corridor extends approximately 11 km southwest from the offshore wind farm area to the landfall south of Dunany Point (Figure 2-1).

The turbines will be connected to each other by a network of inter-array cables, which will also connect into the OSS. The offshore cable will transfer the electricity from the OSS to shore, where it will connect to the onshore infrastructure.

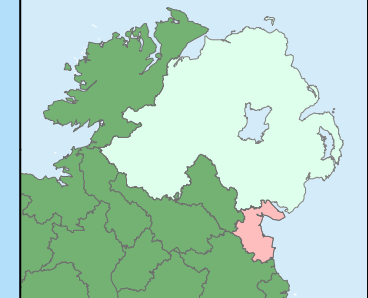




### Legend

- Planning Application Boundary

Data Sources: OWL, OSI.



Client



Project

**Oriel Wind Farm Project**

**Figure 2-1:  
Overview of Oriel Wind Farm Project**

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#### Issue Details

Drawn By: NR	Project No. MDR1520b
Checked By: CC	File Ref:
Approved By: CC	MDR1520bArc3072F02
Scale: 1:200,000 @ A4	Projection:
Date: 12/01/2024	ITM (IRENET 95) Geographic Co-ordinates: ETRS89

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### 2.2 Policy

The EU Regulation on invasive alien species (No. 1143/2014) came into force in January 2015, which requires action plans to control the introduction and spread of INNS. This regulation indirectly affects the Water Framework Directive (WFD)<sup>1</sup> and the Marine Strategy Framework<sup>2</sup>, ensuring compliance, follows best practice and aids in the protection of Irish waters. This regulation continues to be updated with invasive species of concern within the European Union regularly (No. 2022/1203).

In October 2017, Ireland's 3<sup>rd</sup> National Biodiversity Action Plan, for the period 2017-2021 was launched with seven objectives supported by 119 targeted actions. Target 4.4 relates to invasive non-native species and states *"Harmful invasive alien species are controlled and there is reduced risk of introduction and/or spread of new species."*

There are seven supporting actions for this target:

- Ratify the International Convention for the Control and Management of Ships' Ballast Water and Sediments;
- Develop national and whole island plans to implement the EU Invasive Alien Species (IAS) Regulation and relevant sections of Ireland's EU (Birds and Natural Habitats) Regulations 2011 including: development and adoption of biosecurity plans in relevant state bodies; a Rapid Response Protocol for the island of Ireland; coordination and collation of invasive species surveillance and monitoring data; and work with Northern Ireland and UK authorities on invasive species of mutual concern;
- Continue and enhance measures for eradication, where feasible, control and containment of invasive species;
- Encourage horticultural nurseries to produce native species, varieties and landraces from appropriate native sources for public and private sector plantings. Public bodies will endeavour to plant native species in order to reduce importation of non-native species, varieties and landraces;
- Continue to produce Risk Assessments for potentially invasive non-native species;
- Publish legislation to address required provisions under the EU Regulation on invasive alien species (No. 1143/2014) and on responsibilities and powers regarding invasive alien species, giving IFI responsibility for aquatic invasive species; and
- Work with horticultural and pet trades
- National Biodiversity Action Plan 2023-2030 sets out Ireland's vision, objectives and outcomes for biodiversity in Ireland. Outcome 2H of this plan focuses on the control, management, and elimination of invasive species where possible within Ireland by 2030. Specific proposed measures include the potential creation of an INNS enforcement unit, along with the implementation of a range of EU and Ireland specific legislation to reduce INNS introduction and proliferation, with stakeholder engagement maintained at every stage. These proposed actions will be further considered upon full publication of this plan.

The European Union (Invasive Alien Species) (Freshwater Crayfish) Regulations 2018 (No. 354/18) came into force in Ireland in 2018 and were designed to protect native crayfish in existing freshwater habitats from the introduction of crayfish plague by means of fishing equipment or vessel ballast water from other areas.

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1 The WFD requires all European member states to aim for good chemical and ecological status (ecological status takes into account INNS present, which can reduce a waterbodies status).

2 The Marine Strategy Framework Directive requires Member States to put in place measures to achieve good environmental status in their marine waters by 2020.

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Although this is largely a freshwater regulation, consideration should be given to the connectivity between marine and freshwater habitats in preventing the introduction of INNS by activities related to the Project.

In addition to this, The Invasive Alien Species (Enforcement and Permitting) Order (Northern Ireland) 2019 came into force in December 2019. This MINNSMP ensures compliance with relevant legislation and international commitments for the Project.

This MINNSMP will be finalised prior to construction and will remain a ‘live’ document throughout the lifetime of the Project, with periodic updates by the Applicant during the construction, and operational and maintenance phases of the Project, as outlined within Section 3.7 (Evaluation and Review).

### 2.3 Consents

The Project will be subject to the consents shown in Table 2-1. This document will be updated to incorporate conditions of these consents.

**Table 2-1: Consents applicable to the offshore infrastructure of the Project.**

Consent	Legislation	Consenting authority	Date
Dumping at Sea Permit	Dumping at Sea Act 1996 (as amended)	Environmental Protection Agency (EPA)	To be applied for
Maritime Area Consent	Maritime Area Planning Act 2021	Department of the Environment, Climate, and Communications	2022
Planning application	Maritime Area Planning Act 2021	Department of the Environment, Climate, and Communications	TBC

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

### 2.4 Linkages with other consents management plans

The MINNSMP is consistent as far as possible with other relevant consents management plans prepared to inform the implementation of the Project. These are set out in Table 2-2 below with details of the linkages presented.

**Table 2-2: Linkages with other consents management plans.**

Consents Management Plan	Linkage with the MINNSMP
Environmental Management Plan (EMP)	The EMP provides the overarching framework for environmental management during the construction and operational phases of the Project. This can include proposed monitoring, methodologies and timings, along with a range of management plans including stakeholder engagement, traffic, waste, emergency response, and decommissioning and restoration.

### 3 MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN METHODOLOGY

This section outlines the process of creating a MINNSMP using the best available evidence available and following best practice guidance (Cook *et al.*, 2014, Payne *et al.*, 2015) and information provided in the Invasive Species Ireland website (ISI, 2021). To make an accurate risk assessment of the Project and derive a suitable MINNSMP, a stepwise approach was taken as discussed in detail below.

#### 3.1 Step 1: Understanding your site

The first step in creating an MINNSMP is to provide a detailed description of the site. This information should include the salinity of the site, details of any man-made structures, and if INNS are present within the site.

Understanding the salinity of the site will determine if INNS are present. The majority of marine flora and fauna are unable to tolerate freshwater due to osmoregulatory effects leading to death (Evans, 1980). An increased volume of freshwater flowing into a site will likely result in less hospitable conditions, decreasing the risk of INNS on-site; conversely, a fully marine site tends to represent a greater risk of INNS introduction to communities of native species (Tang *et al.*, 2022).

The presence of artificial structures increases the risk of INNS establishment, even if the structure has only been present for just a few weeks as INNS are quick to establish populations (Bax *et al.*, 2003). Information related to any slow or stationary periods of works or climatic conditions that may increase biosecurity risk should be included.

If INNS have been found on-site, then the MINNSMP should focus on reducing the risk of introducing new INNS and consider how to prevent the spread of existing INNS to other sites. Throughout the whole process, the precautionary principle should be followed, even if no INNS are present on site.

Using this information, a site can be assessed as having a low or significant risk of introducing or spreading INNS. Table 3-1 provides an example of this.

**Table 3-1: Example of low and significant risk sites (Payne *et al.*, 2015).**

Low Risk Site	Significant Risk Site
<ul style="list-style-type: none"> <li>• Supply of freshwater from a local river;</li> <li>• Isolated from surrounding environments by walls or breakwaters (i.e. closed or semi-enclosed area with little to no flow of water); and</li> <li>• Anti-fouling used on artificial structures with periodic removal for air-drying.</li> </ul>	<ul style="list-style-type: none"> <li>• Full salinity with no freshwater inflow;</li> <li>• Artificial structure has no antifouling coating with no management in place for maintenance; and</li> <li>• Site has connectivity to similar environments.</li> </ul>

#### 3.2 Step 2: Understand how INNS may be introduced or spread to your site

In addition to understanding the site, consideration of pathways by which INNS may be introduced or spread are needed. The step should be iterative and revisited when the MINNSMP is due for review. The questions and associated risk included in Table 3-2 have been adapted from Payne *et al.* (2015) and provide the type of questions to consider when creating an MINNSMP.



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**Table 3-2: Example of questions and risks to consider whilst creating a MINNSMP (Payne *et al.*, 2015).**

Question	Yes = High	Yes = Medium	Yes = Low
1. Has the vessel/ equipment just arrived from the local area?			
2. Has the vessel/ equipment had an anti-fouling coating applied to submerged structures within the last 12 months (or time recommended by manufacturer)?			
3. Are all the visible submerged surfaces of vessels or equipment to be deployed free of bio-fouling (a green 'slime' is OK)?			
4. Do the visible submerged surfaces of vessels or equipment to be deployed have more than a green 'slime' coating?			
5. Does the vessel or equipment to be deployed have noticeable clumps of algae and/ or animals clinging to the visible parts?			
6. Has the vessel/ equipment just arrived from another country or region with similar environmental conditions (e.g. seawater temperature)?			
7. Has the vessel/ equipment just arrived from a water body known to have INNS present?			
8. Does the vessel/ equipment spend long periods of time stationary at sites in between anti-fouling treatments?			
9. Is the vessel 'slow moving', such as a construction barge or drilling rig?			

For example, a recreational vessel showing no signs of biofouling on the hull or below the waterline would be considered a low risk for introduction of INNS; conversely a work vessel/barge that moves from site to site and is present on site for long periods of time may have a medium – high, and therefore significant, risk of introducing INNS to site. For the purposes of this assessment, any activity that falls within the 'Low' category in Table 3-2 above is assessed as 'Low' Risk. Any activity that falls within the 'Medium' or 'High' categories is assessed as 'Significant' Risk. This is considered to present a conservative approach to assessing the risk of introducing INNS.

### 3.3 Step 3: Understand the site activities

Often this step involves a simple approach of listing all activities, using information obtained through the first two steps, which may carry a significant risk of introducing or spreading INNS. Once this list has been created, the next step is to develop relevant and proportionate control measures.

### 3.4 Step 4: Biosecurity control measures

It is important that measures to control the introduction or spread of INNS are effective, clear, realistic and easy to communicate to others. These measures must also consider how much control is enforceable over the site. A list of example control measures can be found within Cook *et al.* (2014), and Payne *et al.* (2015), many of which are included in the MINNSMP (see section 4.4). Where possible, biosecurity measures should be included in the in-design stage of a new development and aim to 'design out' any possible significant risk of introducing or spreading INNS.

### 3.5 Step 5: Biosecurity surveillance, monitoring and reporting procedures

This section will outline what procedures should be followed in the event of discovering and positively identifying an INNS on site. All staff and other site users should be encouraged to report any unusual sighting to the biosecurity officer.

### **3.6 Step 6: Contingency plan**

In case of the failure of the 'prevention' and 'rapid response' methods to effectively manage INNS introduction (section 4.6), a contingency plan will be created. This document should be short, provide a step-by-step approach of action and be accessible to all staff. This plan will review the identified listed activities and determine areas of biosecurity control measures failure and recommend actions for effective management at this stage. For example, if a vessel had been wrongly assessed as low risk and introduced an INNS to the site, the introduced species would be sampled and identified, with the relevant authorities notified, followed by further containment and management measures being sought.

### **3.7 Evaluation and review**

Following completion of the MINNSMP, a clear recording system and review cycle date will be put in place to refine and update the MINNSMP as required in line with relevant regulations and legislation.

## 4 MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN

### 4.1 Step 1: Understanding your site

#### 4.1.1 Environmental conditions affecting biosecurity

The Project is located outside of any currently designated environmental areas, but the offshore cable corridor traverses Dunany Point proposed Natural Heritage Area (pNHA) (approximately 870 m). This area is designated based on the presence of sandy sediments, mudflats, rocky outcrops, and shingle bank habitats and should be considered as a potential site of INNS introduction for species which can utilise these habitats during cable-laying and operational activities.

The Project is located on relatively flat seabed with depths varying from 16 m chart datum in the northwest to 32 m chart datum in the southeast. Tidal currents in the area are relatively weak, with 80% of tides over a 12-month period having a current flow speed of below 0.2 m/s, flooding to the northwest, and ebbing to the southeast, as determined through desktop study for volume 2B, chapter 7: Marine Processes.

The benthic subtidal ecology characterisation of the offshore wind farm area indicated that the Project is dominated by circalittoral coarse sediments in the north, with finer circalittoral sand in the south, and a patchy distribution of circalittoral rock and biogenic reef (although no biogenic reef was identified during site specific surveys). This area is known to support high abundance echinoderm, bivalve, and polychaete communities. The offshore cable corridor is characterised primarily by circalittoral mud and coarse sediment, with associated bivalve *Chamelea gallina* dominated communities. Further specific environmental baseline conditions are identified and assessed in volume 2B, chapter 8: Benthic Subtidal and Intertidal Ecology.

#### 4.1.2 Information related to any slow or stationary periods or climatic condition that may increase biosecurity risk

Detailed information relating specifically to the physical environmental conditions in the vicinity of the Project can be found in volume 2B, chapter 7: Marine Processes and volume 2B, appendix 7-1: Marine Processes Technical Report.

The offshore wind farm area experiences weak tidal currents with a range of muddy, fine sand, and coarse sedimentary benthic environments. Slow tidal current conditions may act to increase potential biosecurity risks, as fouling organisms may have more opportunity to colonise and establish communities (Bax *et al.*, 2001). However, the presence of natural hard substrates and biogenic reef formations indicate that introduced substrates will be unlikely to represent a significant change from baseline conditions, and thus the probability of INNS establishment related directly to the introduced substrates will be reduced.

#### 4.1.3 INNS in the offshore wind farm area

No INNS have been recorded within the offshore wind farm area. The Aquafact site specific surveys (2019) and NBN data (2022) indicated no INNS present within the offshore wind farm area at the sites sampled. Should any be recorded in the area prior to finalising the plan, these should be highlighted here, identifying the risk that each species represents to Ireland's native species.

### 4.2 Step 2: Understand how INNS may be introduced or spread to your site

#### 4.2.1 Vessels and equipment to be used in the Project

Table 4-1 provides an example of the vessels and equipment to be used at the Project with a 'risk' indicator for the potential to introduce or spread INNS to the Project in the Irish Sea. This risk assessment will be updated once the final project design has been confirmed and will be based on professional judgement, the final project design, INNS present within the area (see Section 4.1), and available guidance.



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The EIAR is based on the project design (Table 4-1). These will be refined post consent, such that the risk can be accurately assessed. As stated previously, this is a 'live' document and as such, if specific details of the Project undergo review or are changed, this document will be updated accordingly.

**Table 4-1: Vessel, foundation type, and substrates to be used in the Project and/or involved in the operation.**

Name	Type	Details and Risk factors assumptions	Risk: Low/Significant
Vessels (construction phase)	Various	<ul style="list-style-type: none"> <li>Vessel types and sizes to include 3 jack-up barges/dynamic positioning vessels, 2 commissioning vessels, 2 tug/anchor handlers, 2 cable installation vessels, 1 guard vessel, 4 survey vessels, 8 crew transfer vessels (CTVs), and 5 scour/cable protection installation vessels;</li> <li>Vessels for construction will be sourced from an Irish Sea port, with final decision still to be made;</li> <li>Vessels will be required to have an anti-fouling coating and inspection history complying with relevant regulations;</li> <li>Vessels are expected to move slowly when installing or removing structures; and</li> <li>Up to 465 vessel round trips are planned during this phase.</li> </ul>	Low
Turbine and OSS foundations	Monopile – 9.6 m diameter	<ul style="list-style-type: none"> <li>25 wind turbine foundations;</li> <li>1 OSS foundation;</li> <li>Total area of foundations: 332,060 m<sup>2</sup>;</li> <li>Foundations to occupy all of the water column; and</li> <li>Foundations to be transported to site from an Irish Sea port (pending final decision) using installation jack-up or dynamic positioning vessels, or feeder barges.</li> </ul>	Low
Scour and cable protection	Rock armour or concrete mattresses	<ul style="list-style-type: none"> <li>1,810 m<sup>2</sup> of scour protection on each foundation, accounting for 47,060 m<sup>2</sup> overall;</li> <li>Scour protection comprising rock armour layer on filter layer of smaller graded rocks;</li> <li>Cable protection on 50% of 41 km of inter-array cables, and 50% of 16 km of offshore cable accounting for 205,000 m<sup>2</sup> of cable protection; and</li> <li>Cable protection comprising 2 m of rock armour (rock size means ranging from 90-250 mm, 1-3 kg respectively), or concrete mattresses, depending on site conditions.</li> </ul>	Low

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### 4.3 Step 3: Understand the site activities

A list of the Project activities that may have a significant risk of introducing or spreading INNS is provided in Table 4-2. These are derived from information provided in the current project description and will be updated based on the final project design as explained in Step 2 (section 4.2), with these activities predicted to represent a significant risk of INNS introduction during the construction, operation and maintenance and decommissioning phases.

**Table 4-2: Site activities which have a significant risk of introducing or spreading INNS.**

Phase	Activity Description
Installation	<ul style="list-style-type: none"> <li>• Provision of temporary moorings;</li> <li>• Installation of man-made structures; and</li> <li>• Using vessels from outside of the offshore wind farm area.</li> </ul>
Operation and maintenance	<ul style="list-style-type: none"> <li>• Presence of man-made structures; and</li> <li>• Maintaining man-made structures and ancillary equipment.</li> </ul>
Decommissioning	<ul style="list-style-type: none"> <li>• Removal of man-made structures and ancillary equipment; and</li> <li>• Cleaning and disposal of biofouling from man-made structures and ancillary equipment.</li> </ul>

### 4.4 Step 4: Biosecurity control measures

This section provides information on site-specific risks and control measures associated with the Project.

#### 4.4.1 Installation/presence of man-made structures

##### Risk

This may pose one of the greatest risks of INNS introduction or spreading associated with the Project. New or clean surfaces in ports, marinas and waterways are typically the first colonisation sites for INNS due to their ability to settle and rapidly proliferate, replacing native populations (Huxel, 1999). Newly available hard surfaces (e.g. foundations or scour/cable protection) associated with the Project may be susceptible to colonisation by INNS in the first few weeks/months after installation (Bax *et al.*, 2003).

##### Control Measures

Any man-made structure to be used for the Project should be of terrestrial origin (i.e. not coming from another marine environment) or if it has come from another marine environment, it will be allowed to fully dry to kill off any organisms that have attached and inspected prior to placement in the marine environment.

#### 4.4.2 Using vessels from outside of the Project

##### Risk

Using vessels from outside the western Irish Sea area poses a significant risk of introducing INNS to the area (Minchin and Gollasch, 2010), especially vessels coming from areas of similar marine environment. Information on the origin of the vessels to be used in all phases of the Project will be included within the MINNSMP once the exact details and origins of vessels are specified following appointment of construction contractors, although it is currently expected they will operate from an Irish Sea port, and this will be finalised when confirmed.

##### Control Measures

All vessels to be used for construction, operation and maintenance and decommissioning activities must follow guidance as directed by the 'Guidelines for the Control and Management of Ships' biofouling to

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minimise the transfer of invasive aquatic species<sup>3</sup>, and where applicable, to comply with the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments'<sup>4</sup>.

### 4.4.3 Cleaning and disposal of biofouling from structures during operation and maintenance activities and decommissioning

#### Risk

During routine operations and maintenance activities (e.g. jet washing of marine growth from the splash zone, or component replacement where required), there is potential for any established INNS to be detached from subsea structures. Where there is an identified risk that these activities may lead to spread of INNS in the marine environment (e.g. where INNS have a high potential for colonisation of the area of the foundation undergoing maintenance, or where INNS have been directly identified colonising turbines), additional control measures may be required.

Following removal of marine structures (e.g. foundations) during the decommissioning phase, INNS, if present, may still be attached to the surface. Should the INNS be removed without due care and washed back into the marine environment surrounding the Project, these INNS may represent a risk of spreading to areas previously unaffected.

#### Control Measures

Where there is an identified risk that operation and maintenance activities (e.g. periodic cleaning of foundations) may lead to spread of INNS (e.g. if there is a high risk that INNS are present on foundations), control measures may be required to minimise the amount of material entering the marine environment.

Large volumes of material detached or removed from decommissioned subsea infrastructure should be prevented from re-entering the marine environment. Material should be taken away and properly disposed of onshore. Control measures taken in relation to disposal of biofouling will be aligned with the relevant Port Authority 'Waste Management Plan'.

#### Biosecurity action

Prior to the installation of subsea structures or operation of new vessels to the offshore wind farm area, the Applicant and their contractors must include the following biosecurity clauses in any contract agreement:

- The contractor must submit a Biosecurity Risk Assessment to the Project Environmental Manager at least six weeks prior to installation/operations; and
- The contractor must ensure that all equipment, materials, machinery, Personal Protection Equipment (PPE) and vessels used are in a clean condition prior to their arrival on site to minimise the risk of INNS introduction into the marine environment.

## 4.5 Step 5: Biosecurity surveillance, monitoring and reporting procedures

Table 4-3 outlines who is responsible for carrying out certain checks of INNS, where these checks are to be carried out and when.

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<sup>3</sup> For more information, see: <http://www.imo.org/en/OurWork/Environment/Biofouling/Pages/default.aspx>

<sup>4</sup> For more information, see: <http://www.imo.org/en/OurWork/Environment/BallastWaterManagement/Pages/Default.aspx>



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**Table 4-3: Roles, responsibilities, and instructions for staff, contractors, and site users.**

Who	What	Where	When
Project Operations and Environment Manager - developers and contractors	<ul style="list-style-type: none"> <li>Oversee removal of flora and fauna from Project offshore infrastructure, ensure material is properly disposed of and that no material is released into the water as per the relevant Port 'Waste Management Plan'; and</li> <li>Awareness of INNS, including identification guidance on the key risk species. If uncertainty arises, follow the contingency plan.</li> </ul>	At Port	Beginning of works
Project Operations and Environment Manager or appropriate contractor	<ul style="list-style-type: none"> <li>Oversee installation and removal of Project offshore infrastructure, checking for INNS or unknown organisms;</li> <li>For operations and maintenance, periodic checks should be carried out after two months to ensure no growth/settlement of INNS;</li> <li>Be aware of any slow moving or inactive craft and take steps to assess risk;</li> <li>Ensure a Check, Clean and Dry message is sent to any new developers or contractors; and</li> <li>Where possible, collaborate with the relevant Port Authority and other users of the offshore wind farm area to raise INNS awareness.</li> </ul>	At Port	Beginning of works
Developers and contractors	<ul style="list-style-type: none"> <li>Confirm origin of material used in constructing of marine energy devices and ancillary equipment (i.e. terrestrial origin, not previously submerged in marine water); and</li> <li>Encourage 'tool box' talks on INNS prevention and monitoring.</li> </ul>	N/A	Throughout works
Project Operations and Environment Manager - developers and contractors	<ul style="list-style-type: none"> <li>Through collaboration with the Regulators (including the Department of the Environment Climate and Communications, Invasive Species Ireland, and Port Authority) will develop measures appropriate to the Project deployment specific to the site, nature, and duration of Project activities on a case by case basis.</li> </ul>	N/A	Beginning of works

## 4.6 Step 6: Contingency plan

**Table 4-4: Contingency plan in event of failure of prevention of INNS introduction.**

Action	Responsibility
<b>Stage One – Suspected arrival of high alert species</b>	
Take photographs of sample and collect sample in a plastic bag.	Designated biosecurity officer, site manager, Contractor Environmental Manager or Project Environmental Manager (depending on the phase of the project), or any member of staff at the site of INNS discovery.
Check organism against identification sheet (see <a href="https://invasivespeciesireland.com/species-accounts/established/marine">https://invasivespeciesireland.com/species-accounts/established/marine</a> ) Report to: <a href="https://invasivespeciesireland.com/report-sighting">https://invasivespeciesireland.com/report-sighting</a>	Designated biosecurity officer, site manager, Contractor Environmental Manager or Project Environmental Manager (depending on the phase of the project), or any member of staff at the site of INNS discovery.
<b>Stage Two – Presence of high alert species confirmed</b>	
Initiate immediate containment measures, including restricted vessel movements.	Designated biosecurity officer, site manager, Contractor Environmental Manager or Project Environmental Manager (depending on the phase of the project).

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Action	Responsibility
Carry out wider survey of vessels and structures.	Designated biosecurity officer, qualified ecologist.
<b>Stage Three – Eradication/employ long-term control measures</b>	
Seek advice from Invasive Species Ireland and NPWS on appropriate measures and actions for long term control.	Designated biosecurity officer and Contractor Environmental Manager or Project Environmental Manager (depending on the phase of the project).

## 4.7 Evaluation and review

### Location of biosecurity logbook

A biosecurity logbook will be kept (electronic form) for the Project and will be made available for inspection and review as and when required.

### Plan review date

This plan will be updated prior to construction to include the final project design and to include an updated risk assessment based on that final design. This will include all measures to manage INNS during the construction, phase as agreed with the relevant regulatory authorities, (i.e. Invasive Species Ireland and NPWS).

The plan will be updated following completion of construction and at the beginning of the operational and maintenance phase to ensure the plan is appropriate for the next phase of the development and risks and activities associated with it. The plan will be updated at regular intervals during the operational and maintenance phase and prior to the decommissioning phase to ensure all measures are appropriate and any changes in the environment and risk of INNS (e.g. records of INNS being present on site) are reflected in the MINNSMP, as agreed with the relevant regulatory authorities.

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