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# **APPENDIX 5-8**

MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN



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Term	Definition
Circalittoral	The region of the seabed that is below the depth at which marine plants/algae are typically found and is dominated by animals (i.e. below the photic zone).
Colonial	A collective life form which comprise associations of individual organisms. Marine colonial animals are typically attached to the seabed and include corals and bryozoans.
Environmental Impact Assessment	EIA is a process used to evaluate the potential environmental effects of a proposed project ensures that environmental considerations are integrated into the planning and decision-making stages, helping to minimize negative impacts on the environment and promote sustainable development
Invasive	An introduced organism that can become overpopulated, outcompete and/or prey upon native species causing adverse ecological effects.
Landfall	The transition between the Offshore and Onshore Developments (referred to as the Landfall) is the location at which the offshore export cable and communication cables emerge from the trenchless landfall duct.
Phylum	A principal taxonomic category that ranks above class and below kingdom.
Polychaete	Taxonomic class of (mainly) marine segmented worms from the phylum Annelida.

#### GLOSSARY OF PROJECTS TERMS



Offshore Export Cable Corridor	The Offshore Export Cable Corridor (OECC) is approximately 62 km in length, approximately 1 km wide along the majority of its length and has a total area of approximately 73 km <sup>2</sup> .
Sceirde Rocks Offshore Wind Farm ('The Project')	Sceirde Rocks Offshore Wind Farm (The Project) is comprised of an Offshore Site and an Onshore Site. The transition between the Offshore and Onshore Sites (referred to as the Landfall) is the location at which the offshore export cable and communication cables emerge from the trenchless landfall duct and enter the transition joint bay (TJB). The Offshore Site refers to the Offshore Array Area (OAA) and Offshore Export Cable Corridor (OECC) and the infrastructure within the OAA and the OECC. The OAA infrastructure will include 30 wind turbine generators (WTG), an offshore substation (OSS), 31 Gravity Base Structure (GBS) foundations which support the WTGs and OSS, and Inter-array Cables (IACs) and cable protection. The OECC infrastructure will include Offshore Export Cable (OEC) and cable
	protection
Substratum	The layer of layer of rock or sediment beneath the sea surface of sea (i.e. the seabed surface).
Suspended sediment	Fine sediment transported by a fluid that allows for turbulent eddies within fluid to outweigh settling of the particles.
The Applicant	In reference to planning – Fuinneamh Sceirde Teoranta (FST).

#### ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AFS	Anti-fouling Systems on Ships
AMP	Archaeological management Plan
BWM	Ballast Water Management
CaP	Cable Plan
CBRA	Cable Burial Risk Assessment



Acronym	Definition
ССР	Critical Control Point
DOT	Department of Transport
EIAR	Environmental Impact Assessment Report
EPA	Environmental Protection Agency
ERCoP	Emergency Response Co-operation Plan
EU	European Union
EUNIS	European Nature Information System
FMMS	Fisheries Management and Mitigation Strategy
GB	Great Britain
GBS	Gravity Base Structure
HDD	Horizontal Directional Drilling
HWM	High Water Mark
IAC	Inter-Array Cable
IAS	Invasive Alien Species
IMO	International Maritime Organisation
INFOMAR	Integrated Mapping for the Sustainable Development of Ireland's Marine Resource Programme
INNS	Invasive Non-Native Species
ISI	Invasive Species Ireland
Km	Kilometre
LAT	Lowest Astronomical Tide
$m^2$	Square metres



Acronym	Definition
LMP	Lighting and Marking Plan
MARPOL	The International Convention for the Prevention of Pollution from Ships
MINISMO	
MINNSMP	Marine Invasive Non-Marive Species Management Plan
MMMP	Marine Mammal Mitigation Protocol
МРСР	Marine Pollution Contingency Plan
NBAP	National Biodiversity Action Plan
NBDC	National Biodiversity Data Centre
NMPF	National Marine Planning Framework
NNSS	Non-Native Species Strategy
NPWS	National Parks and Wildlife Service
OAA	Offshore Array Area
OEC	Offshore Export Cable
OECC	Offshore Export Cable Corridor
OEMP	Offshore Environmental Management Plan
OSS	Offshore Substation
PPE	Personal Protective Equipment
PSU	Practical Salinity Unit
SAC	Special Area of Conservation
SOLAS	International Regulations for the Safety of Life at Sea
UK	United Kingdom
UXO	Unexploded Ordnance



Acronym	Definition
VMP	Vessel Management Plan
WFD	Water Framework Directive
RWMP	Resource Waste Management Plan
WTG	Wind Turbine Generator



# 1. INTRODUCTION

#### **Background**

This Marine Invasive Non-Native Species Management Plan (MINNSMP) forms part of the Offshore Environmental Management Plan (OEMP) and has been prepared by Xodus on behalf of Fuinneamh Sceirde Teoranta (FST) (hereafter referred to as the Applicant), for the construction, operation and maintenance and decommissioning of the Sceirde Rocks Offshore Wind Farm, and all its offshore component parts within the Offshore Site. The Offshore Site refers to the Offshore Array Area (OAA) and Offshore Export Cable Corridor (OECC) and the infrastructure within the OAA and the OECC.

The MINNSMP has been prepared in conjunction with the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS) which will accompany the application for development permission of the Project to be submitted to An Bord Pleanàla.

Should the Sceirde Rocks Offshore Wind Farm secure planning permission, the MINNSMP will be updated, in line with all conditions and obligations which apply to any grant of permission. The MINNSMP should be read in conjunction with the EIAR and the planning drawings. The MINNSMP will also require updating by the appointed contractor in order to identify, assess and satisfy the contract performance criteria as set out by the various stakeholders. The MINNSMP due to its structure and nature, will require constant updating and revision throughout the various phases of the project from construction to operation and maintenance and decommissioning.

The appointed contractor will be required to implement all of the requirements set out in this MINNSMP. The MINNSMP may be updated and revised throughout the construction, operation and maintenance and decommissioning phases, but all future iterations must meet or exceed the standards and requirements set out in this document and the Applicant must be satisfied that all requirements set out in this document can and will be implemented in full by the appointed contractor.

## **1.2 Project Description**

Sceirde Rocks Offshore Wind Farm ('the Project') is comprised of an Offshore Site and an Onshore Site. The transition between the Offshore and Onshore Sites (referred to as the Landfall) is the location at which the offshore export cable and communication cables emerge from the trenchless landfall duct and enter the transition joint bay (TJB). This MINNSMP only considers the Offshore Site.

Sceirde Rocks Offshore Wind Farm Environmental Impact Assessment Report (EIAR), Chapter 5: Project Description describes the design details of the Offshore Site and all its component parts, situated off the South coast of Ireland, close to Connemara, Co. Galway.

The Offshore Site comprises the OAA and OECC infrastructure.

The OAA infrastructure includes 30 wind turbine generators (WTG), an offshore substation (OSS), 31 Gravity Base Structure (GBS) foundations which support the WTGs and OSS, and Inter-array Cables (IACs) and cable protection. The OECC infrastructure includes the Offshore Export Cable (OEC) and cable protection.





## **1.3 Purpose of document**

The purpose of the MINNSMP is to set out the approach to invasive and non-native species (INNS) management and mitigation in respect of the Offshore Site, providing an outline of the proposed measures to be implemented to facilitate biosecurity control and to minimise potential impacts on the local and wider offshore environment. The MINNSMP will be further updated to support the construction programme.

## 1.4 **Construction programme**

A summary of the phases of the Offshore Site construction programme is shown in

Table 1-1. The construction programme and durations of the campaigns are subject to change depending on factors such as contractor / vessel availability, ground and weather conditions and any supply chain or logistical issue that may arise. Furthermore, specific details on installation will vary depending on the technologies adopted and may change due to improvements in both the technology and supply chain.

Ports to be used during the construction phase are not yet confirmed. Shannon Foynes Port, Rossaveel, Cork and Belfast harbours, along with ports in the UK and continental Europe, are all being considered as ports which will support construction activities for the Project. This is subject to project-specific requirements and the availability of ports and other local facilities during construction, a multi-port approach may also be considered prior to commencement of construction. Ports to be used during the O&M phase, as the O&M base, are not yet determined. However, it is assumed that Rossaveel Harbour will be the primary O&M base. The O&M port will be confirmed post consent (further details can be seen in the Chapter 5 'Project Description' of the EIAR).

Activity	Description
Pre-construction surveys and site investigations	Additional pre-construction surveys may be undertaken, including geophysical, geotechnical, benthic, unexploded ordnance (UXO) and metocean investigations. Other surveys, e.g. for birds, may also be undertaken as required.
Site preparation	Seabed preparations will be required prior to the installation of GBS foundations and offshore cable infrastructure. This may include dredging, boulder clearance and UXO clearance. Site preparation works also include placement of rock to form a stonebed for GBS foundations and for WTIV operations.
GBS foundation and sub- substructure installation	Prior to installation at the OAA, the GBS foundations are proposed to be temporarily anchored, at a temporary anchor facility which is subject to a separate application and assessment process. Foundations will be towed to site and installed ahead of the WTG and OSS topside structure.
OSS installation/commissioning	OSS topside structure is installed after the installation of the GBS foundation. Following installation of the OSS and connection to the inter-array and export cabling, a process of testing and commissioning will be undertaken.

Table 1-1 Offshore Site activities from pre-installation to commissioning



Activity	Description
OEC – landfall and offshore installation	Following the completion of the necessary onshore works (including the necessary landfall preparations) and the offshore site preparations, the OEC will be laid from the landfall out to the OSS, with the potential for pre-trenching works to be undertaken ahead of cable installation.
	The export cable will be buried wherever possible and may be installed using a variety of techniques detailed further in Chapter 5: Project Description. Following cable lay and burial (which may occur simultaneously or sequentially) external cable protection will be installed, as necessary. Further details on cable protection are provided in the chapter 'Project Description' of the EIAR.
Inter-array cable installation	The inter-array cables will be installed between the WTGs and between WTGs and the OSS.
	The installation techniques for the inter-array cables will be similar to that of the OEC. For purposes of assessment within the EIAR, there will be rock placement over 100% of the IACs.
WTG installation/commissioning	The WTGs components will be fabricated onshore and transported to the OAA for installation. Following installation of the WTG and connection to the inter-array cabling, a process of testing and commissioning will be undertaken.

## **OEMP and Management Plans**

The MINNSMP is an appendix to the overarching Project Offshore Environmental Management Plan (OEMP).

Table 1-2 below sets out the other appendices that feed into the OEMP.

Table 1-2 Consent Management Plan, O	EMP appendices
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Consents Management Plan	Description
Marine Pollution Contingency Plan (MPCP)	The MPCP sets out pollution prevention measures such as: a) storage of chemicals in secure designated areas in line with appropriate regulations and guidelines, b) adherence to vessel regulations such as MARPOL to reduce potential for vessel pollution, c) disposal of waste e.g. sewage, oil or litter at an authorised disposal facility.
	The MPCP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Resource Waste Management Plan (RWMP)	The RWMP sets out the provisions for waste management for Offshore Site components in line with the waste management hierarchy.
	The RWMP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).

1.5



Consents Management Plan	Description
Vessel Management Plan (VMP)	The VMP sets out how all vessels associated with the Offshore Site will comply with the provisions of the International Regulations for the Prevention of Collision at Sea (COLREGs) and the International Regulations for the Safety of Life at Sea (SOLAS).
	The VMP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Fisheries Management and Mitigation Strategy (FMMS)	FMMS sets out the activities designed to manage and mitigate the impacts of various projects on local fisheries.
	The FMMS will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Marine Mammal Mitigation Protocol (MMMP)	The MMMP sets out the mitigation measures to avoid injury and disturbance to marine mammals will be developed. This will be developed with full regard to the NPWS (2014) Guidelines and industry good practice from other jurisdictions and could include the use of acoustic deterrent devices to temporarily displace animals away from the highest risk (injury) zones, and marine mammal visual and acoustic observers to ensure that there are no marine mammals in close proximity (1,000 metres) of the UXO being cleared.
	The MMMP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Emergency Response Co- operation Plan (ERCoP)	The ERCoP sets out the actions to be taken during an emergency, the resources available to support those actions, and emergency contact details.
	The ERCoP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Lighting and Marking Plan (LMP)	The LMP sets out the marine lighting and marking requirements and procedures for the Offshore Site during the construction and operation and maintenance stages.
	The LMP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).
Archaeological Management Plan (AMP)	The AMP sets out the procedures to be followed on discovering any marine archaeological assets during the construction and operation and maintenance stages of the Project.
	The AMP will be included as an appendix to the Offshore Environmental Management Plan (OEMP).



1.6

# Summary of measures, mitigation and monitoring included in the EIAR

The embedded mitigation and monitoring measures detailed within the Environmental Impact Assessment Report (EIAR) and relevant to this MINNSMP are presented in Table 1-3.

Measures	Justification
Pollution planning	An MPCP will be developed outlining procedures to protect personnel working and safeguard the environment should a pollution event occur.
Marine Pollution Contingency Plan (MPCP)	An MPCP will be created for the Offshore Site with consideration of the National Maritime Oil/ Hazardous Noxious Substance (HNS) Spill Contingency Plan.
Adherence to conventions for pollution prevention and ballast water management	Adherence to the International Convention for the Prevention of Pollution from Ships (MARPOL) and Ballast Water Management (BWM) Conventions, including shipboard oil pollution emergency plans (SOPEP).

Table 1-3 Relevant embedded mitigation and monitoring measures detailed in the EIAR

# **LEGISLATION AND GUIDELINES**

There are a several of pieces of legislation and guidance relating to the Invasive Non-Indigenous Species at a European Union (EU) level and at the National Irish level, these are detailed below.

The Invasive Alien Species (IAS) Regulation (EU 1143/2014) which came into force in January 2015, requires action plans to control the introduction and spread of Invasive Alien Species (IAS) (European Parliament, 2014). The IAS Regulation is regularly updated with invasive species of concern within the European Union (No. 2022/1203). The IAS Regulation feeds into the Water Framework Directive (WFD) that requires all European member states to aim for good chemical and ecological status (ecological status takes into account INNS present) and into the Marine Strategy Framework Directive, ensuring compliance and following best practice to protect Irish waters.

This document refers throughout to Invasive Non-Native Species (INNS); this term includes species identified as Invasive Alien Species (IAS) under EU Regulations.

The National Marine Planning Framework (NMPF) from the Department of Housing, Local Government and Heritage includes 'Non-indigenous Species Policy 1' which has an objective to reduce the risk of the introduction and/or spread of IAS (NMPF, 2021). To accord with the NMPF Policy, development proposals must demonstrate a risk management approach to prevent the introduction of and/or spread of IAS, particularly when: moving equipment and boats from one water body to another, and/or introducing structures suitable for settlement of non-indigenous species, or the spread of non-indigenous species known to exist within the area of the proposal (NMPF, 2021).

In July 2023 the International Maritime Organisation (IMO) adopted Resolution MEPC 378(80) "2023 Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive



Aquatic Species (IMO, 2023) which provides practical guidance on measures to minimise the risk of transferring IAS which may arise from shipping activities.

In January 2024, Ireland's 4<sup>th</sup> National Biodiversity Action Plan (NBAP) (NPWS, 2023), for the period 2023-2030 was launched which aims to build upon the achievements of the previous plan and will continue to implement actions within the framework of five strategic objectives. Of relevance, Objective 2 'Meet Urgent Conservation and Restoration Needs' includes a focus on invasive species, with the aim of Outcome 2H being that 'Invasive alien species (IAS) are controlled and managed on an all-island basis to reduce the harmful impact they have on biodiversity and measures are undertaken to tackle the introduction and spread of new IAS to the environment'.

There are 8 actions for outcome 2H:

- > The National Parks and Wildlife Service (NPWS) will establish an IAS unit to expedite implementation of the legislative and policy framework, including specific resources for enforcement;
- NPWS, together with other relevant Departments and public bodies, will develop national plans to implement aspects of the EU IAS Regulation and relevant national legislation, as well as work on cooperative plans where there is an all-island or North-South aspect for IAS impacts;
- NPWS will introduce new national legislation to update existing legislation and give effect to aspects of the EU IAS Regulation 1143/2014, as well as assigning responsibilities for aquatic IAS;
- NPWS in collaboration with all relevant stakeholders will resource and implement on-the-ground actions to control, manage and where possible and feasible, eradicate occurrences of invasive alien species, including the removal of stands of invasive species from Protected Areas and National Parks;
- NPWS, National Biodiversity Data Centre (NBDC) and relevant partners will develop dedicated biosecurity protocols, standard operating procedures and guidelines for Government Departments;
- NPWS, NBDC and relevant partners will implement recommended measures arising from the 2021 EPA Report No. 368 Prevention, Control and Eradication of Invasive Alien Species;
- > NBDC will continue to produce Risk Assessments for potential invasive alien species; and
- Ireland will accede to the International Convention for the Control and Management of Ships Ballast Water and Sediments, with the Department of Transport (DOT) enforcing the requirements aboard Irish flagged ships, in its role as a flag state and aboard foreign flagged ships in Irish ports under port state control. DOT will also participate in the Paris Memorandum of Understanding (MOU's) Concentrated Inspection Campaign on implementation of the Ballast Water Convention in 2025.

This approach should allow alignment with Global Biodiversity Framework target 6: "Reduce the Introduction of Invasive Alien Species by 50% and Minimize their Impact". This is further defined as "Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent, by 2030, eradicating or controlling invasive alien species especially in priority sites, such as islands."

This MINNSMP ensures compliance with relevant legislation and international commitments for the Project as outlined above.

The purpose of this MINNSMP is to ensure all procedures pertaining to marine works (including construction Offshore Development) and vessel operations follow best guidance, preventing and



reducing the risk of possible spread or introduction of INNS. The method employed follows the Great Britain INNS Strategy (2023 to 2030) (GB INNSS, 2023). Consideration has also been given to guidelines from Invasive Species Ireland (ISI, 2021), which have been developed for the aquaculture industry. The INNS Framework Strategy involves a three-tier approach:

- 1. Prevention: Prevent all INNS from entering the waterbody in question;
- 2. Rapid response: Detection of INNS as early as possible, monitor and possible eradication of INNS present; and
- 3. 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.

This MINNSMP will be updated prior to construction and will remain a 'live' document throughout the lifetime of the project, with periodic updates by the Biosecurity Manager / Environmental Manager during the construction phase as outlined within section 5.6 (Contingency plan).



З.

# **ROLES AND RESPONSIBILITIES**

A list of the roles and responsibilities in relation to this MINNSMP is provided in

Table 3-1.

Table 3-1 Roles	and Responsibilit	ies in Relation	to the MINNSMP
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Role	Responsibility
Applicant	Requiring the implementation of the MINNSMP and monitoring and/or clearance/disposal of INNS at the Offshore Site (via its contractors and subcontractors). Report any potential incidents of INNS.
Environmental Clerk of Works (ECoW)	Quality assurance of the MINNSMP. Monitoring Contractor/Subcontractor compliance with the MINNSMP during all phases of the project.
	Report any potential incidents of INNS.
Contractors	Adopt working practices in line with MINNSMP. Report any potential incidents of INNS.
Sub Contractors	Adopt working practices in line with MINNSMP. Report any potential incidents of INNS.
Biosecurity Manager <sup>1</sup>	Delegated responsibility for the practical implementation of the MINNSMP.
	Report any potential incidents of INNS.

<sup>&</sup>lt;sup>1</sup> This role may be delegated to the Applicant's Environmental Manager



MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN -METHODOLOGY

This section outlines the process of creating the MINNSMP following best practice guidance (Cook *et al.*, 2014) and information provided in the Invasive Species Ireland Website (ISI, 2023). In order to make an accurate risk assessment of the Offshore Development and derive a suitable MINNSMP, a stepwise approach was taken as discussed below.

## 4.1 **Step 1 – Understand the site**

As part of the development of the MINNSMP the following characteristics of the Offshore Site were considered:

- > Salinity of the site;
- > The presence of man-made structures in the water;
- > Whether INNS are already present in the site.

Detailed descriptions of the environmental conditions affecting biosecurity are given in Section 5.

Knowledge on the salinity of the site informs the understanding of the likelihood of the presence of INNS. Most marine animals and algae cannot tolerate freshwater for any length of time so the higher the contribution of freshwater in the offshore site the less hospitable it will be for a marine INNS. The risk increases as salinity increases with the greatest risk of marine INNS establishment occurring when the water is fully saline (i.e. without any freshwater input from any river or drainage channels within 1 km of the site) or if it only has occasional freshwater input (Cook *et al.*, 2014).

A vector for the transportation of INNS to the Offshore Site is from the Gravity base Structures (GBS) which will have been temporarily anchored in a floating configuration in the harbour prior to being wet-towed to the Offshore Site. As harbours are known to potentially be prone to INNS there is a risk that such species may attach to the GBS and thus be relocated to the Offshore Site.

The presence of man-made structures in the water increases the risk of successful establishment of INNS as these species typically prefer to settle on man-made structures rather than natural surfaces (Cook *et al.*, 2014). As INNS can establish rapidly, their spread can take place even in those cases where man-made structures have been in the water for just a few weeks.

If INNS have been found in the Offshore Site, then the MINNSMP will focus on reducing the risk of introducing new INNS and consider how to prevent the spread of existing INNS to other sites.

Using this information, an offshore site can be assessed as posing a low risk or a significant risk in terms of introducing or spreading INNS (

Table 4-1) (Cook et al., 2014).

Table 4-1 Example of low and significant risk sites (following Cook et al., 2014)

Low Risk Site	Significant Risk Site
Freshwater supply from a local river	Fully saline water (i.e. minimal freshwater inflow)

4.



Low Risk Site	Significant Risk Site
Breakwater or walls around most of the site	Structures without anti-fouling coating and / or submerged for longer than 6 months at a time
Structures that have an anti-fouling coating or removed from the water and air dried on a regular basis (~every 6-12 months)	Fixed structures that can only be cleaned <i>in situ</i>

Based on the available information and

Table 4-1, the Offshore Site is more closely to be characterised as a 'Significant Risk Site'.

#### 4.2

# Step 2 – Understand how INNS may be introduced to the site

Consideration of pathways through which INNS may be introduced to the Offshore Site should also be considered; for example, what are the movements of vessels and equipment in the site (Cook *et al.*, 2014). The assessment of the potential introduction of INNS will be an ongoing and iterative process and will be revisited as the when the MINNSMP is revised as the Project develops. To assess which activities are likely to present a greater risk of introducing INNS, Cook *et al.* (2014) guidelines suggest considering the following questions and risks (

Table 4-2) when drafting a MINNSMP.

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

Table 4-2 Examples of questions and risks to consider whilst creating a MINNSMP (Cook et al., 2014)



The greatest risk of introducing INNS is when a vessel (particularly slow-moving barges for example), equipment or stock arrives at the Offshore Site from another country, region, or water body, with similar environmental conditions (e.g., temperature, salinity). The risk is also increased if the vessel, equipment or stock is covered in biofouling (i.e., anything more than a thin, green 'slime' coating for vessel hulls) or contains additional algae and animals (otherwise known as 'hitch-hikers') within other parts of its structure or amongst the stock (Cook *et al.*, 2014).

There is also a greater risk of introducing INNS when a vessel with fouling on the hull has just arrived from a site that is known to contain INNS (Cook *et al.*, 2014).

For the purposes of this assessment any activity that falls within the 'Low' category in

Table 4-2 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 risk of introducing INNS.

## 4.3 **Step 3 – Identify activities which risk introducing INNS**

The next step in the preparation of the MINNSMP is to consider the Offshore Site activities which take place as part of the construction phase, particularly those that could lead to the introduction or release of INNS to the Offshore Site.

Cook *et al.* (2014) provide a list of potential activities representing risk of introduction and / or releasing INNS. Of the potential activities relevant to offshore renewables, the following activities are applicable:

- > use of construction barge and slow moving vessels;
- > using vessels from locations outside local water body;
- > removal of old structures / equipment;
- > cleaning of hull and associated structures; and
- > maintenance of equipment and vessels.

In Cook *et al.* (2014) there are two options for the identification of Offshore Site activities which risk the introduction of INNS:

- > a **simple approach**, where all the Offshore Site activities which may carry a significant risk of introducing or releasing INNS, are listed. This list is then taken to the next step to the development of control measures; and
- an in-depth approach, which supports a better understanding of the risk of introducing or spreading INNS associated with each Offshore Site activity. The indepth approach also provides guidance in the development of biosecurity control measures as well as where and when to apply them. This approach enables a more rigorous assessment where preventive actions can be incorporated into the MINNSMP.

Table 4-3 below presents the parameters to be taken into account in the selection of approach for the identification of activities which risk introducing INNS.

Table 4-3 Parameters for the selection of approach in the identification of activities which risk introducing INNS





Simple Approach	In-depth Approach
Sites/ operations where there is a limited level control of over activities e.g. 'self- service visitor moorings', small harbour or marina without full time attendant.	Important for understanding the risks of introducing or spreading INNS in operations/ events.
	Suited to sites and operations where there is a high level of control over all the activities.

Considering the size, number and complexity of the operations in the Offshore Site the in-depth approach will be followed.

The in-depth approach involves five steps which are shown below. Detailed presentation of the in-depth approach is given in Annex B of Cook *et al.* (2014).

- Step 1 List Site activities. Any activity which has a reasonable risk of leading to the introduction of INNS;
- Step 2 Describe Activities. Brief description of activity based on "who, what, when, where, why and how";
- Step 3 Split Activities into Tasks. Each task then needs to be briefly described in the sequence that it takes place;
- Step 4 Establish Critical Control Points and Control Measures. For each task the following should be considered: a) risk, b) justify, c) critical control point (CCP), d) control measure, e) who will carry out the control measure.
- Step 5 Develop an action Plan. The control measures that were developed in Step 4 should be built into a simple action plan which sets out who will carry out the control measure, what they will do and when.

## 4.4 **Step 4 - Biosecurity Control Measures**

The listing of Offshore Site activities which carry a risk of introducing INNS, is followed from the development of measures to control that risk. It is important that these measures are (Cook *et al.*, 2014):

- > Effective;
- > Simple;
- Realistic and can be applied in the real world given the staff resource, amount of planning time, etc; and
- Can be easily translated into instructions for staff or recommendations for private vessels.

The level of control the Applicant has over the Offshore Site and its activities must be considered when developing measures and these will facilitate the Applicant in meeting legal requirement to take appropriate steps to prevent the introduction of INNS.

The following parameters will be considered to ensure that control measures are appropriate (Cook *et al.,* 2014):

- > Who will carry out the action;
- > What they will be doing to reduce the risk of introducing INNS;
- > Where will the control measure be applied; and
- > When will the control measure be applied, at what stage in a process.



Cook *et al.* (2014) provide a list of example control measures many of which are included in the MINNSMP (see section 5.4). Biosecurity measures will be included in the design stage of a project so that potential risks of introducing and/or releasing INNS will be addressed at an early stage in the design process.

#### 4.5

## Step 5 - Biosecurity Surveillance, Monitoring and Reporting Procedures

The early detection of an INNS at a site is crucial as this increases the likelihood of successful containment and the potential for full eradication. Anyone who works on the Offshore Site or visits regularly will be encouraged to report any unusual sightings. For example, monitoring the visible signs of biofouling on vessels or equipment that enter a site will be encouraged.

As part of the Biosecurity Surveillance process the following will be implemented:

- > Identifying individual(s) responsible for biosurveillance and monitoring of the site; and
- Adding actions to encourage vessel owners and workers engaged in projects activities to be vigilant and report any sightings of concern.

## 4.6 **Step 6 - Contingency Plan**

In the event that the 'prevention' and 'rapid response' methods fail (see section 2) a contingency plan will be created by the Applicant that will be delivered to all relevant personnel, by an appropriately qualified personnel, e.g. ECoW(s). This contingency plan will be short and concise document, accessible to all staff that provides a step-by-step approach in dealing with the INNS.

The contingency plan will review the identified activities listed in the MINNSMP and derive actions based on the failure of the biosecurity control measures attributed to the listed activities e.g. a vessel has been wrongly assessed as low risk and has introduced an INNS to the site.

In this case, the species will be sampled, identified, and the relevant authorities, National Biodiversity Data Centre (NBDC) notified by the Applicant. Further containment measures for INNS will be employed. The 'Invasive Alien Species in Ireland website (<u>https://invasives.ie/</u>) has a facility to report sightings (see also section 1).

## 4.7 Monitoring and Review

Once the MINNSMP has been agreed, a clear recording system (e.g., a logbook) will be put in place for the results of any checks or actions taken and formal steps put in place to ensure the biosecurity manager is quickly informed of any potential introduction of INNS (Cook *et al.*, 2014).

A programme for the review of Project activities and operation plans will be drawn up to refine and update the MINNSMP as required.



# 5. SCEIRDE ROCKS MARINE INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN

## 5.1 Step 1 - Understanding the site

The 'Benthic Ecology' Chapter 09 of the EIAR was informed by Geophysical Surveys and Benthic Characterisation Survey. The benthic ecology study area overlaps a number of designated sites with relevance to benthic ecology as detailed in the 'Benthic Ecology' Chapter 09 of the EIAR; however, the Offshore Site does not directly overlap with any designated sites (the OECC is designed to avoid the bordering Inishmore Island SAC).

Within the Sceirde Rocks Offshore Array Area (OAA) seabed depths are generally between 25 m LAT and 40 m LAT, reaching maximum depths of up to 60 m LAT. Depths along the Offshore Export Cable Corridor (OECC) start at around 25 m LAT at the boundary with the OAA, increasing to about 90 m LAT west and offshore of Inishmore island, before shallowing towards landfall, reaching a depth of around 30 m LAT, approximately 1 km offshore from the coast.

Tides are the dominant influence on current speeds across the Offshore Site, comprised of Offshore Array Area (OAA) and Offshore Export Cable Corridor (OECC) which transitions to land using trenchless technology (e.g. Horizontal Directional Drilling (HDD)) landfall. The location of the Offshore site is exposed to the Atlantic Ocean and non-tidal influences also occur (i.e. wave-generated currents, surges and high winds) as well as topographical influences on flows between the rock outcrops within the OAA. Depth averaged flow speeds across the OAA are typically between 0.4 m/s and 0.7 m/s. The flow direction across the OAA varies depending on the location, due to the influence of the morphology in the area. Based on the Copernicus model (Tonani *et al.*, 2023), flow speeds along the OECC are generally less than 0.4 m/s exhibiting a reduction in flow speeds towards the coast and landfall.

With respect to the salinity across the Offshore Site salinity ranges between 34.40 PSU and 34.85 PSU at the sea surface, to between 35.10 PSU and 35.20 PSU at the deepest depth of around 75 m within the OAA and surrounding area. Along the OECC, surface water is less saline, ranging approximately between 34.30 PSU and 34.80 PSU, while water at depth similar to that within the OAA at around 35.2 PSU. There is a bigger range in salinity through the water column along the OECC. The larger range in salinity along the OECC and the less saline surface water is also likely to be as a result of freshwater influence that has been described to exist across the region.

The seabed across the Offshore Site comprises of a variety of rocky and sediment substrates with the OAA being predominantly rocky and the OECC being largely sediment dominated with sands and mud substrates. The site-specific survey data was generally in agreement with the predicted habitat data from INFOMAR and EUNIS broadscale habitat map, where comparisons could be made.

Two non-native taxa were identified during the benthic survey: the polychaete *Goniadella gracilis* and the amphipod *Monocorophium sextonae*. The polychaete *G. gracilis* was observed 42 times in low abundance ( $\leq 3$  individuals) in approximately 45% of the grab samples across 17 stations in the OAA (Ocean Ecology Limited, 2024). Both *G. gracilis* (one station, nine individuals) and *M. sextonae* (three stations, six individuals) were observed along the OECC. No assessment on the risk these species present is available although it is considered that these are of low risk (Welsh Government, 2017). The polychaete *G. gracilis* is believed to have originated in South Africa and eastern North America. This species was first reported in Liverpool Bay in the 1970s (Walker, 1972). The amphipod *M. sextonae* is native to New Zealand and arrived in Irish waters in 1982 by natural means from southwest Britain



(Costello, 1993). Additional taxa recorded within the sediment eDNA samples include two INNS Japanese seaweeds: *Fibrocapsa japonica*, and *Dasysiphonia japonica* (Ocean Ecology Limited, 2024).

Kelly *et al.* (2013) provided a risk analysis for INNS in Ireland and Northern Ireland, in which the authors identified high risk species based on recorded species and potential species. The high-risk marine INNS which have been recorded in Ireland include the carpet sea squirt (*Didemnum vexillum*), the slipper limpet (*Crepidula fornicata*), the leathery sea squirt (*Styela clava*). As per the benthic survey results, these species have not been identified as present within the survey area. A study published by O'Shaughnessy et al. (2023) provides information about the presence, distribution and abundance of marine non-native species in Irish marinas. It should be mentioned that the kelp *Undaria pinnatifida* recorded from Tralee Bay (west coast) is a 'high alert' species O'Shaughnessy et al. (2023).

Further information about the environmental conditions related to the Offshore Site can be found in Chapter 10 'Marine Physical Processes' and Chapter 09 'Benthic Ecology' of the EIAR.

## 5.2 **Step 2 - Understand how Invasive Species may be introduced or spread to the site**

Vessel/Equipment to be used at the Offshore Site

Table 5-1 provides an example of the vessels and equipment to be used at the Offshore Site with a 'risk' indicator for the potential to introduce INNS. This risk assessment will be updated prior to commencement of construction. The vessel requirements will be determined by the installation contractor post-consent, and this will depend on vessel availability. The maximum anticipated number of vessels is 19.

Name	Туре	Details and Risk factors assumptions	Risk:
			Low / Medium / High
Vessels (construction phase)	Various	The vessel requirements will be determined by the installation contractor post-consent, and this will depend on vessel availability. The vessels likely, but not limited to, to be used include construction support vessels, rock dump vessels, installation jack- up rigs, heavy lift vessels, cable lying vessels, and supply vessels. All vessels will be required to adhere to international guidelines (e.g., International Maritime Organization (IMO) International Convention for the Control and Management of Ships' Ballast Water and Sediments ('BWM Convention').	Low
Towing of infrastructure	GBS	Another vector for the transportation of INNS to the offshore site is from the GBS which will have been temporarily anchored in a floating configuration in the harbour prior to being wet- towed to site.	Low

Table 5-1 Vessels and operations associated with the Project with a risk of introducing or spreading INNS



Name	Туре	Details and Risk factors assumptions	Risk:
			Low / Medium / High
		GBS will be treated with anti-fouling paint. All anti- fouling paint will be compliant with The International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention), and the Sea Pollution (Control of Anti-Fouling Systems on Ships) Regulations 2008 (S.I. No. 82/2008).	

## 5.3 **Step 3 - Understand site activities which risk the introduction of Invasive Species**

A list of the Offshore Development activities that may have a significant risk of introducing or spreading INNS is provided in

Table 5-2. The list of activities given in

Table 5-2 will be reviewed and updated prior to commencing the construction.

Table 5-2 Site activities which have a significant risk of introducing or spreading INNS

Phase	Activity Description
Construction	> Installation of GBS foundation and sub-substructure;
	> Installation of OSS;
	> Installation of landfall and OEC;
	> Installation of inter-array cables;
	> Installation of WTGs;
	> Transportation of components from locations that maybe already occupied by
	INNS- for example towing of GBS which will have been temporarily anchored in a
	floating configuration in the harbour prior to being wet-towed to site.

### 5.4 **Step 4- Biosecurity Control Measures**

This section provides information on site-specific risks and control measures associated with Offshore Site activities. It should be mentioned that the MINNSMP is a dynamic, iterative working document and will be further updated to consider the operation and maintenance phase once construction is concluded.

# 5.4.1 Using vessels transiting from outside the Offshore site

#### **RISK**

Using vessels transiting from outside the waters of the Irish west coast poses a significant risk of introducing INNS to the area, especially vessels transiting from areas of similar marine environment conditions. Information on the origin of the vessels to be used in the Offshore Site will be included here once further details are available following the appointment of the installation contractors post consent



and prior to the commencement of construction (see section 5.2). The installation contractor will provide that exact specifications and origin of vessels that are to be utilised in the construction phase.

#### **CONTROL MEASURES**

All vessels to be used for construction, operation and maintenance and decommissioning activities will be required to follow guidance as directed by the 'Guidelines for the control and management of ships biofouling to minimize the transfer of invasive aquatic species' (IMO, 2023), and where applicable, to comply with the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments' (IMO, 2021). The MINNSMP is a dynamic, iterative working document and will be further updated to consider the operation and maintenance phase once construction is concluded.

Implementation of these control measures will be an integral requirement for all contractors in order to comply with this MINNSMP.

#### 5.4.2 Wet-towing of GBS

#### **RISK**

This may pose a risk of INNS introduction or spreading associated with the activities. New or clean surfaces located in ports, marinas and waterways are typically the first colonisation sites for INNS due to their ability to settle and rapidly proliferate, quickly out competing native populations (Huxel, 1999).

#### **CONTROL MEASURES**

Each GBS will be treated with anti-fouling paint. All anti-fouling paint will be compliant with The International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention), and the Sea Pollution (Control of Anti-Fouling Systems on Ships) Regulations 2008 (S.I. No. 82/2008).

#### **Biosecurity action**

Prior to any operation of new vessels to site, the Applicant and their contractors must include the following biosecurity clauses:

- > The contractor must submit a Biosecurity Risk Assessment to the Environmental Manager at least six weeks prior to operations; and
- > The contractor must ensure that all equipment, materials, machinery, 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.

## 5.5 **Step 5 - Biosecurity surveillance, monitoring and reporting procedures**

This section will contain information outlining who is responsible for carrying out certain checks of INNS as well as when and where these checks are to be completed by the Biosecurity Manager (

Table 5-3).

The potential vectors responsible for the introduction and / or spread of INNS considered in this MINNSMP are vessels and the towing of GBS, which will have been temporarily anchored in a floating



configuration in the harbour prior to being wet-towed to the Offshore Site. In this MINNSMP the role of infrastructures themselves in the introduction / spread of INNS has not been considered since the Offshore Site is mainly composed from hard (rocky) substrates and thus installed infrastructure is not anticipated to induce a material change in the availability of hard surfaces.

Who	What	147h are	W/hon
Biosocurity	Awareness of INNS including identification guidance on	At port	Boginning
Managan	Awareness of hyros, including identification guidance on	At port	Deginning
Manager	the key fisk species. If uncertainty arises, follow the		WOIKS
	contingency plan.		
	Collaborate with the relevant Port Authority and other		
	users of the offshore wind farm area to raise INNS		
Applicant	awareness.		
	Assess INNS risk of any slow moving or inactive craft and		
	take steps.		
Contractors			
Sub-	Ensure a Check, Clean and Dry <sup>2</sup> message is sent to new		
contractors	(sub) contractors.		
Biosecurity	Confirm origin of material used in constructing of	n/a	Throughout
Manager	infrastructure.		works
Applicant	Ensure 'tool box' talks on INNS prevention and monitoring.		
Contractors	Collaborate with the relevant Port Authority and other users		
	of the offshore wind farm area to raise INNS awareness.		
Biosecurity	Liaise with EPA and NPWS to identify any new INNS risks	n/a	As required
Manager	and thus potential mitigation requirements are well		
	understood and enacted as soon as possible.		

#### Table 5-3 Instructions for checks of INNS

## 5.6 **Step 6 - Contingency plan**

Table 5-4 details the stages of the contingency plan, the actions associated with each stages and who is responsible for each of these actions. All actions should be undertaken as soon as practicable.

Table 5-4 Contingency Plan

Action	Responsibility		
Stage One – Suspected arrival of high alert species			
Take photographs of sample and collect sample in a plastic bag. Contact EPA / NPWS/ NBDC for advice on where to send the sample.	Environmental Manager / Biosecurity Manager / Environmental Clerk of Works (ECoW), or any member of staff.		
Check organism against identification sheet (see https://invasivespeciesireland.com/speciesaccounts/ established/marine) Report any sightings to Invasive Species Ireland: https://invasivespeciesireland.com/report-sighting	Environmental Manager / Biosecurity Manager / ECoW.		

<sup>&</sup>lt;sup>2</sup> "Check, Clean, Dry" message is aimed at preventing the spread of invasive species in water bodies.



Action	Responsibility			
Inform harbour users and place appropriate	Harbour Master / staff			
markers around the identified area.				
Stage Two – Presence of high alert species confirmed				
Initiate immediate containment measures,	Environmental Manager /			
including restricted vessel movements.	Biosecurity Manager, EPA /			
	NPWS, Harbour Master.			
Carry out wider survey of vessels and structures	Qualified ecologist, EPA/NPWS,			
	harbour staff.			
Stage Three – Eradication/employ long-term control measures				
Seek advice from Invasive Species Ireland and	Environmental Manager /			
NPWS on appropriate measures and actions for	Biosecurity Manager.			
long term control.				

## 5.7 **Evaluation and review**

#### Location of biosecurity logbook

An electronic biosecurity logbook will be kept to document and record all check and actions in addition to formal steps taken to inform the biosecurity manager of any potential issues relating to INNS.

Examples of information to be recorded in the electronic biosecurity logbook are provided in Cook *et al.* (2014). All records will be dated and signed by the biosecurity manager.

The electronic biosecurity logbook will be made available for inspection and reviewed as and when required.



6.

# **USEFUL SOURCES OF INFORMATION**

The following is a list of useful information sources which have been relied upon in the preparation of this MINNSMP:

- IMO Guidelines for the control and management of ships biofouling to minimize the transfer of invasive aquatic species
- (https://www.imo.org/en/OurWork/Environment/Pages/Biofouling.aspx);
- Invasive Alien Species in Ireland (<u>https://invasives.ie/</u>)
- Invasive Species Ireland Species Accounts (https://invasivespeciesireland.com/species
   - accounts/established/marine);
- Marine Biosecurity Planning Guidance (Cook et al., 2014) https://www.nature.scot/sites/default/files/2017-07/Publication%202014%20-%20SNH%20Commissioned%20Report%20748%20-%20Marine%20biosecurity%20planning%20-%20Identification%20of%20best%20practice%20-%20A%20review.pdf);
- > GB non-natives species secretariat (www.nonnativespecies.org/); and
- GB non-natives species identification sheets (<u>https://www.nonnativespecies.org/nonnative-species/information-portal/</u>).



7.

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