Buchan Offshore Wind

PMP 6: Proposed Invasive Non Native Species Management Plan

BUC-C-R-NP-015

Buchan Offshore Wind

PMP6 Proposed Invasive Non-Native Species Management Plan

QMS Review

Name	Company	Date	Reviewed	Approved
LJN	Natural Power	23/04/2025	LJN	SMM
CMO	BOW	11/06/2025	CMO	ISS

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1 INTRODUCTION

1.1 BACKGROUND

1. Natural Power Consultants (Natural Power) have been appointed by Buchan Offshore Wind Limited (the Applicant) to produce this proposed Invasive Non-Native Species Management Plan (pINNSMP).

2. A wide range of activities are known to have directly caused or facilitated the global or regional spread of marine non-native species. Such activities include accidental releases from aquaculture ponds or aquariums, escapes of species from laboratory and domestic origins, and biological control introductions. International shipping related activities are, however, considered to be the largest facilitator in the spread of marine non-native species (Barry, *et al*, 2008), and ballast water and associated sediments within vessel ballast tanks are widely recognised as key pathways. Non-native species may also be transported across large distances as fouling on vessel hulls, in seawater pipework, and attached or entangled on equipment such as anchors and anchor chains (Scotland's Marine Atlas, Baxter *et al*., 2011).

3. This pINNSMP is currently applicable for both generation and transmission elements of the Proposed Offshore Development. Upon receipt of consent and associated marine licence conditions, one INNSMP for generation and one for transmission can be prepared as required.

1.2 AIMS AND OBJECTIVES

4. The objective of this pINNSMP is to set out the basis to identify potential routes of introduction of INNS and to subsequently assess the risk of such introduction occurring as a direct result of works associated with the Proposed Offshore Development.

5. The specific aims of the pINNSMP will be as follows:

- to identify the key pathways for the introduction of non-native species involved with works associated with the Proposed Offshore Development;
- to assess the risk of release of INNS as a result of the works associated with the Proposed Offshore Development; and
- to present details of mitigation and management measures.

1.3 LEGISLATION AND GUIDANCE

6. The management of biofouling and the associated risk of introducing INNS is underpinned by a range of international conventions, regional agreements, and domestic legislation. These frameworks provide the legal and policy basis for effective marine biosecurity and are supported by relevant guidance. The following instruments are applicable to the Proposed Offshore Development:

1.3.1 International Conventions and Agreements

- International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention), 2001
  Adopted by the International Maritime Organization (IMO). This Convention prohibits

the use of harmful organotin compounds in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances. The UK is a signatory and has implemented the Convention through domestic legislation, most recently via The Merchant Shipping (Anti-Fouling Systems) Regulations 2024;

- IMO Guidelines for the Control and Management of Ships' Biofouling to Minimise the Transfer of Invasive Aquatic Species (MEPC.207(62)), 2023
  Issued by the International Maritime Organization. These guidelines provide best practice approaches for managing biofouling on vessels to reduce the spread of aquatic invasive species. While not legally binding, these guidelines are endorsed and referenced in UK marine environmental management practices;

- Convention on Biological Diversity (CBD), 1992
  Adopted under the United Nations. Article 8(h) of the Convention specifically requires parties to prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats, or species. The UK is a signatory and has transposed CBD obligations into UK conservation policy, including through biosecurity strategies; and

- Convention on the Conservation of European Wildlife and Natural Habitats (Berne Convention), 1979
  Adopted by the Council of Europe. It promotes conservation of wild flora and fauna and natural habitats, with emphasis on endangered and vulnerable species, including a requirement to control invasive alien species. The UK is a signatory. The Convention is implemented through national nature conservation legislation including the Wildlife and Countryside Act 1981.

1.3.2 EU and UK/Scottish Legislation

- Directive 2008/56/EC (Marine Strategy Framework Directive – MSFD)
  Adopted by the European Union. Requires EU Member States to achieve Good Environmental Status of marine waters, including controlling non-indigenous species. Although the UK has left the EU, the principles of the MSFD have been retained in UK law under the UK Marine Strategy Regulations 2010 (as amended);

- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
  Applies in Scotland. These regulations transpose the EU Habitats Directive into Scottish law and include measures to prevent ecological damage from invasive species;

- The Wildlife and Countryside Act 1981 *(as amended)*
  UK domestic legislation. It includes provisions prohibiting the release of invasive non-native species and provides the legal foundation for INNS control measures in Scotland; and

- The Invasive Non-Native Species (Amendment etc.) (EU Exit) Regulations 2019 (as amended)
  UK domestic regulation post-Brexit. Retains elements of the EU Regulation on invasive non-native species, establishing lists of species of special concern and powers for their control.

- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended)
  UK domestic regulation post-Brexit. Designed to protect and conserve marine habitats and species in offshore waters. These regulations aim to safeguard important marine ecosystems, such as coral reefs, seagrass beds, and deep-sea habitats, and protect vulnerable or threatened species from harm or disturbance caused by human activities

1.3.3 Relevant Guidance

- Marine Biosecurity Planning: Guidance for Producing Site and Operation-Based Plans for Preventing the Introduction of Non-Native Species (Payne et al., 2014)
  Published by Marine Scotland Science. This guidance supports the preparation of site-specific biosecurity plans and informs the development of project-specific INNS Management Plans; and
- The Merchant Shipping (Anti-Fouling Systems) Regulations 2024
  UK domestic regulation. Transposes elements of the AFS Convention into UK law, establishing controls on harmful anti-fouling systems on vessels operating in UK waters.

1.4 DOCUMENT STRUCTURE

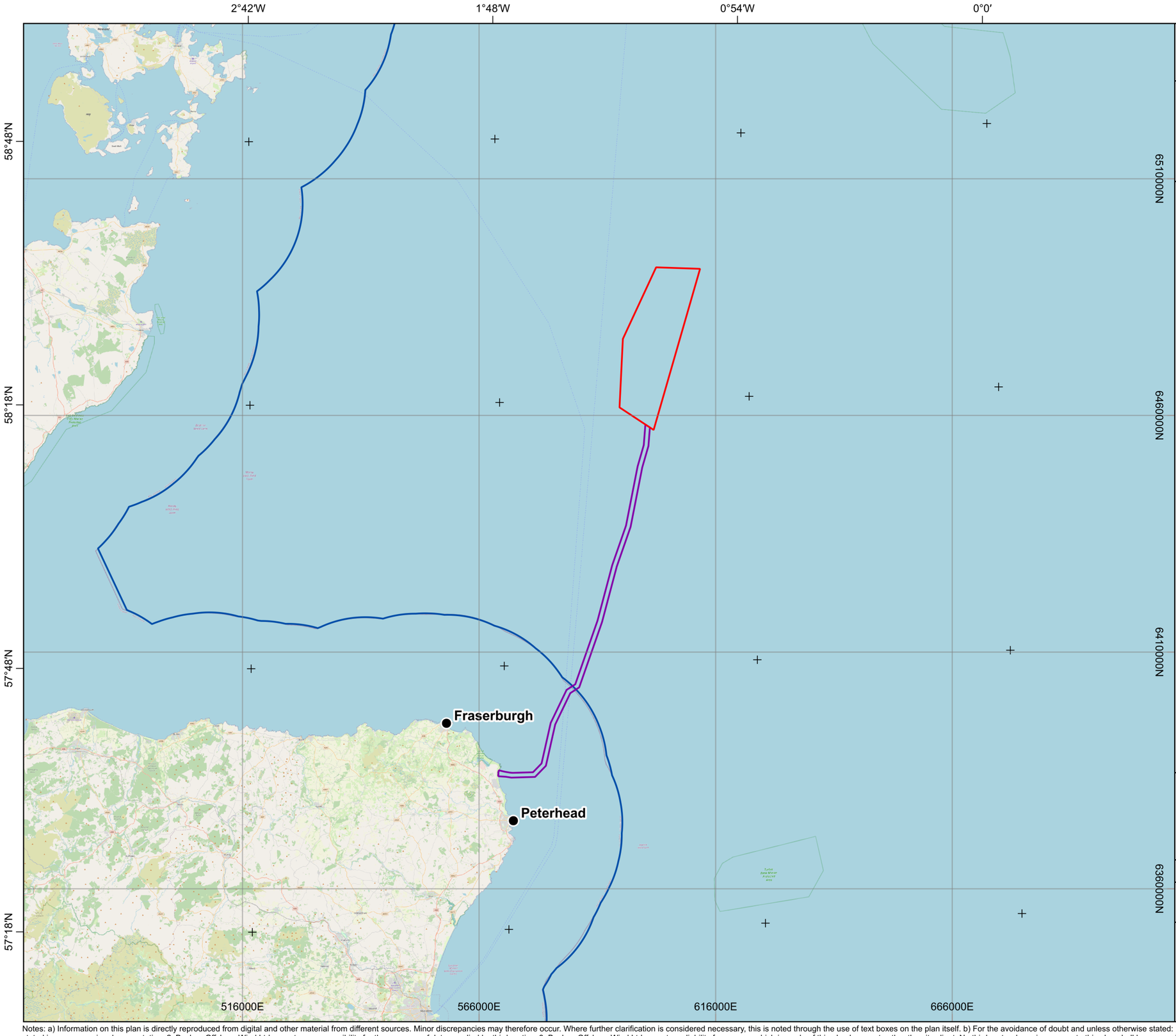
7. This pINNSMP is divided into five parts as follows.

- Section 1 – Background and legislative context;
- Section 2 – Project background and consents;
- Section 3 – Roles and responsibilities;
- Section 4 – INNS and potential paths for introduction; and
- Section 5 – INNS Control Measures

2 Project Background and Consents

2.1 PROJECT OVERVIEW

8. The Proposed Offshore Development Array Area is located approximately 75 km off the Aberdeenshire coast at its closest point, north-east of Fraserburgh in the outer Moray Firth. The Proposed Offshore Development encompasses the Array Area with an indicative export capacity of up to 1 GW (located within the NE8 Plan Option (PO)) and the Export Cable Corridor (ECC) up to MHWS (Figure 2-1).



Project:

Buchan Offshore Wind EIA

Title:

Figure 1-1: Location of the Proposed Offshore Development

Key

- Array Area
- Export Cable Corridor (ECC)
- 12 nautical mile (NM) UK limit

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Not to be used for Navigation.

Scale @ A3: 1:800,000

Coordinate System: WGS 84 UTM Zone 30N
Graticules: WGS84

N

0 10 20 30 40 km

Date: 14-04-25	Prepared by: AC	Checked by: EL

EIA Ref No: BUC-C-MP-NP-0024
Map Ref: GB204095_M_213_A

BUCHAN OFFSHORE WIND

Notes: a) Information on this plan is directly reproduced from digital and other material from different sources. Minor discrepancies may therefore occur. Where further clarification is considered necessary, this is noted through the use of text boxes on the plan itself. b) For the avoidance of doubt and unless otherwise stated: 1. this plan should be used for identification purposes only, unless otherwise stated in accompanying documentation. 2. Buchan Offshore Wind Ltd accepts no responsibility for the accuracy of data supplied by third parties. 3. Buchan Offshore Wind Ltd accepts no liability for any use which is made of this plan by a party other than its client. No third party who gains access to this plan shall have any claim against Buchan Offshore Wind Ltd in respect of its contents.

9. Components contained within the Array Area consist of:

- up to 70 Wind Turbine Generators (WTGs) and associated supporting structures, including floating foundations, mooring systems and anchors;
- a network of dynamic inter-array cables (IAC) linking the individual WTGs together and connecting WTGs to Offshore Substation Platforms (OSPs);
- up to three OSPs with cabling linking these (forming part of the Offshore Transmission Infrastructure (OTI); and
- ancillary works including scour and cable protection.

10. The OTI within the ECC comprises the following infrastructure:

- up to three export cables;
- one Intermediate Reactive Compensation (IRC) platform; and
- ancillary works including scour and cable protection.

11. The expected design lifespan of the Proposed Offshore Development is 35 years.

2.2 LINKS WITH THE EIA

12. In accordance with the guidance for managing invasive non-native species (INNS) within offshore development projects, Table 2-1 outlines the relationship between the commitments made in the Environmental Impact Assessment (EIA) Report and the pNNSMP. This table serves to demonstrate how each commitment is linked to the management, mitigation, and monitoring of INNS across various project phases. It also highlights the relevant mitigation measures that will be implemented to prevent the introduction or spread of invasive species, as well as how these measures are secured through project consents.

Table 2-1: Summary of How the pINNSMP Relates to EIA Report Commitments

Commitment Reference	Project Phase	EIA Commitment	pINNSMP Relevance	How It's Secured
EM4	C, O, D	Micro-siting to avoid sensitive seabed habitats	INNSMP will ensure that micro-siting avoids areas that could promote the spread of invasive species	Secured through S36 and Marine Licence conditions
EM5	C, O, D	Development of an Environmental Management Plan (EMP)	EMP will include provisions to control invasive species and their spread	Secured through S36 and Marine Licence conditions
EM6	C, O, D	Marine Pollution Contingency Plan (MPCP)	INNSMP will include protocols for responding to pollution incidents that may involve invasive species	Secured through S36 and Marine Licence conditions

Commitment Reference	Project Phase	EIA Commitment	pINNSMP Relevance	How It's Secured
EM7	C, O, D	Invasive Non-Native Species (INNS) Biosecurity Plan	INNSMP will contain detailed measures for managing invasive species, reducing risks of their introduction and spread	Secured through S36 and Marine Licence conditions
EM8	D	Decommissioning Programme	INNSMP will include mitigation measures to address invasive species during decommissioning	Secured via Section 105 (2) notice and consents
EM9	O	Cable Plan (CaP)	INNSMP will ensure cable installation does not contribute to the spread of invasive species	Secured through Cable Plan conditions in the Marine Licence

2.3 LINKS WITH OTHER CONSENT PLANS AND DOCUMENTS

13. This pINNSMP, along with all other relevant consent plans, will be developed in consultation with key stakeholders and will be implemented in accordance with the requirements set out in the marine licences and section 36 consents. The plans will be reviewed and updated at regular intervals throughout the project lifecycle to ensure they remain relevant and compliant with applicable regulations.

14. Table 2-2 sets out those plans submitted alongside the EIA Report (EIAR) and will be updated post-consent.

Table 2-2 INNSMP Links with Other Consent Plans and Documents

Consent Plan / Document	Description and Relevance to the pINNSMP	Cross Referenced in the pINNSMP
[To be updated post-consent]		
Proposed Environmental Management Plan (pEMP) (Buchan Offshore Wind Ltd, 2025a)	The aim of the EMP is to provide a mechanism to efficiently manage and implement the environmental commitments throughout all phases of the Proposed Offshore Development. It achieves this by detailing the relevant guidance, mitigation and management measures put in place to offset any adverse environmental impacts	Section **3**
Proposed Marine Pollution Contingency Plan (pMPCP) (Buchan Offshore Wind Ltd, 2025d)	Outlines measures to be put in place in order to reduce any impacts due to the release of pollution from the construction, and operation and maintenance phases	Section 5.**3**

Consent Plan / Document	Description and Relevance to the pINNSMP	Cross Referenced in the pINNSMP
Proposed Marine Mammal Mitigation Protocol (pMMMP) (Buchan Offshore Wind Ltd, 2025c)	Outlines measures to manage the risk to marine mammals and other marine species from project activity	Section 5.**3**
Proposed Fisheries Mitigation, Monitoring and Communication Plan (pFMMCP) (Buchan Offshore Wind Ltd, 2025b)	Outlines the mitigation strategy relating to the commercial fishing industry in order to reduce or avoid effects on fishing vessels and activities	Section 5.**3**
Proposed Navigational Safety and Vessel Management Plan (pNSVMP) (Buchan Offshore Wind Ltd, 2025e)	Outlines measures for the management and coordination of vessels to mitigate the impacts on other sea users.	Section 5.**3**

2.4 CONSENT COMPLIANCE

15. . Table 2-3 will present an outline of information to be fully populated for the Proposed Offshore Development from consent conditions received and updated in the INNSMP post-consent. The pINNSMP will be prepared to satisfy the criteria set out within consents and licences received

Table 2-3 Consents and Conditions to be Discharged by the INNSMP

Consent/Licence Document	Condition Reference	Condition Text	Relevant Section of this INNSMP
[To be populated post-consent]			

3 Roles and Responsibilities

16. The full list of roles and responsibilities pertaining to environmental management matters is detailed in the proposed Environmental Management Plan (pEMP) (Buchan Offshore Wind Ltd, 2025a). Those roles and responsibilities most likely to be relevant to the implementation of the INNSMP are listed in Table 3-1 and will be refined post-consent.

Table 3-1 Anticipated Roles and Responsibilities for the INNSMP

Role	Contact Information	Reports to	Responsibilities
Applicant			
Project Director (PD)	*[To be populated post-consent]*	Buchan Offshore Wind Ltd	Responsible for ensuring compliance with and delivery of the INNSMP. The Project Director is accountable to Buchan Offshore Wind Ltd. Has overall responsibility for ensuring the Proposed Offshore Development is constructed and operated with a view to protecting the environment, preventing pollution and reducing adverse environmental impacts.
Head of Consents		Project Director	Manages a team responsible for monitoring and reviewing compliance with the project consents and environmental legislation. Will work across all stages and elements of the project to ensure a consistent approach to compliance and environmental management is applied. Will serve as primary contact for key stakeholders such as MD-LOT and other statutory bodies.
Environmental Manager		HSE Director and Head of Consents	Will lead a team responsible for monitoring compliance with the INNSMP, project consents and environmental legislation. They will review contractor and subcontractor INNSMP documentation to ensure relevant requirements are adequately captured by the documentation. They will appoint an Environmental Clerk of Works (EcoW) and any other supplementary environmental resource (where required). They will provide environmental and compliance input to internal and external personnel. They will produce environmental documentation and periodically review and update environmental documentation inclusive of the INNSMP.

Role	Contact Information	Reports to	Responsibilities
Principal Contractor, Contractor, Subcontractor and Supporting Roles			
Principal Contractor Environmental Manager		Principal Contractor/Applicant Environmental Manager	Appointed by the Principal Contractor to deliver the requirements of the Proposed Offshore Developments consent conditions and monitor wider environmental matters. They will lead on all environmental matters associated with consents and environmental legislation and lead compliance monitoring for the Principal Contractor. They will act as a key interface between the Principal Contractor and the Applicants Environmental Manager
Independent Environmental Clerk of Works (ECoW)		Offshore Consents Manager	Responsibilities include review and quality check of the INNSMP and thereafter monitor compliance with these under the Section 36 and Marine Licences. Responsible for reporting of compliance to the Applicant and to MD-LOT or other stakeholders as stipulated in consent conditions. To provide ongoing advice, monitoring and reporting of compliance with consent and INNSMP conditions. To ensure that all environmental mitigation and monitoring measures stipulated within the EIAR are implemented. Will also be required to complete training with relevant personnel, carrying out of tool box talks and undertaking regular reporting. Responsible for notifying statutory bodies of a incidents relating to INNS and subsequent response and effect.

4 INNS and Potential Pathways for Introduction

4.1 INNS IN THE SCOTTISH MARINE ENVIRONMENT

17. A key part of the process for the management of INNS as part of activities associated with the Proposed Offshore Development is to understand the ecological baseline of the site in terms of known or suspected presence of INNS.

18. There is both local and international concern regarding the introduction and establishment of non-native organisms in the marine environment. When environmental factors are favourable, an introduced species may survive and establish a reproductive population in the host environment. It may then have potential to become invasive by out-competing native species, altering native ecosystems and multiplying into pest proportions. Marine invasive species can have both significant economic and environmental implications, through for example, impacts upon commercial fisheries due to pest/disease introduction, alteration of native ecosystem processes and localised/regional native species extinctions (Pimental *et al*., 2004 and Natural England, 2016). They can also impact upon marine industries as invasive seaweeds can grow on structures such as piers, slipways, fish-farm cages, boat hulls and can become entangled in boat propellers (SNH, 2014).

19. There are a number of non-native species known to already be present in Scottish waters, but a comprehensive list remains lacking (Baxter *et al*., 2011 and updated by Scottish Government, 2020a). Only a few of the non-native species are currently considered invasive, but there are a number that have become widespread and well established (Baxter *et al*., 2011 and updated by Scottish Government, 2020a). Known established INNS present in the Scottish marine environment include the following:

- common cordgrass (*Spartina anglica*) - Originated from North America and, after hybridising with the native UK species, is now the most common saltmarsh grass in the UK;
- wireweed (*Sargassum muticum*) - Originating from Japan, arrived in Scotland in 2004 when it was found in Loch Ryan. It has subsequently spread up the west coast;
- acorn barnacle (*Elminius modestus*) - A native of Australia and New Zealand it is well established in Scottish waters, where they can outcompete the native barnacle species;
- leathery sea squirt (*Styela clava*) - Originating in the Far East it is a fouling organism that smothers native species and may affect aquaculture equipment if present in high density; and
- carpet sea squirt (*Didemnum vexillum*) - Found in the Clyde in late 2009.

20. A number of these species are regarded as having links to hull fouling and vessel movements. In addition to those outlined above, there is the potential for the spread of Chinese mitten crab (*Eriocheir sinensis*) and slipper limpet (*Crepidula fornicata*) which, while not yet present in Scottish waters, are well-established in other areas around the UK coast (Baxter *et al*., 2011 and updated by Scottish Government, 2020a).

4.2 POTENTIAL PATHS FOR INTRODUCTION

4.2.1 Ballast Water Release

21. Ballast water associated with maritime activity is responsible for the majority of accidental marine translocations globally (Barry *et al*., 2008). It is estimated that at least 7,000 different species are being carried in ships' ballast tanks around the world (Elçiçek, H.; Parlak, A.; Cakmakci, M. (2013)). Studies carried out in several countries indicate that many species of bacteria, plants, and animals can survive in a viable form in the ballast water and sediment carried in ships, even after journeys of several months duration. Over a quarter of non-native marine species in British waters may have been introduced through exchange of ballast water, either in ballast water itself or in sediments transported in ballast tanks (JNCC, 1997).

22. Discharging of untreated ballast water or sediment into geographically different regions may result in the establishment of harmful aquatic organisms and pathogens, with potential to threaten animal and plant life. Although other media have been identified as being responsible for transferring organisms between geographically separated water bodies, ballast water discharge from ships appears to be among the most prominent.

4.2.2 Biofouling

23. Alongside ballast water, hull fouling is considered to be one of the key vectors of accidental translocation of marine organisms around the world. This is particularly a risk with slow moving or stationary construction vessels. Once submerged in the marine environment, any exposed surface can become colonised, initially by a film of microorganisms such as bacteria, which subsequently facilitates the settlement of macro-organisms such as barnacles, seaweeds, encrusting bryozoans, molluscs, etc. Fouling can have detrimental effects both economically and environmentally as fouling of ships' hulls can lead to increased drag, therefore increased vessel fuel costs, and improper or accidental removal of the bio foul layer can lead to release of non-native flora and fauna (IMO, 2022).

24. In addition to ships' hulls, associated machinery and equipment, such as anchors or remotely operated vehicles (ROV's) can become fouled and, if not properly treated or cleaned between re-deployments, can also result in the translocation of marine organisms (IMO, 2023).

5 INNS Control Measures

5.1 BIOSECURITY CONTROL MEASURES

25. Measures to control risk of INNS introduction or spread should be:

- effective;
- simple;
- realistic; and
- easily translated into instructions for personnel.

26. The Proposed Offshore Development will adhere to IMO 2021 and 2023 guidance (or equivalent successors) in relation to management of ballast water and biofouling to reduce the risk of transfer of INNS from any associated activities.

27. Examples of biosecurity measures which can be adopted as necessary by the Proposed Offshore Development are listed below in Table 5-1.

Table 5-1 Example Biosecurity Measures (Payne *et al*, 2014)

Activity Type	Example Biosecurity Measure
Preventing biofouling	• use the right type of anti-fouling for the site and vessel usage – take advice from manufacturer or chandlery where possible; • replace anti-fouling coating at regular intervals as specified by the manufacturer's instructions or if damage occurs to any surface in the meantime; and • consider applying anti-fouling to surfaces not typically coated (e.g., mooring buoys, pontoon floats), if fouling is particularly intense.
Remove biofouling	• avoid biofouling scrapings entering the water by securely collecting in suitable material or container (e.g. tarpaulin); and • provide wash down facilities which collect biofouling material during the wash down.
Monitoring and surveillance	• all relevant staff to receive a copy of the site/ operation biosecurity plan summary and instructions sheet; • all relevant staff to received training in INNS identification; and • all staff encouraged to report any 'suspect' marine plant or animal to the Environmental Manager.

5.2 SURVEILLANCE, MONITORING AND REPORTING

28. Early detection of INNS on site will increase the likelihood of successful containment and subsequently reduce the risk of introduction or spread of INNS.

29. All personnel on site should remain vigilant and report any unusual findings to the Environmental Manager who will be able to advise on next steps.

5.3 CONTINGENCY PLAN

30. Contingency planning should be put in place in the event of potential failure of prevention of risk or mis-diagnosis of risk. Actions will also be proposed to deal with potential failure of proposed control measures.

31. Examples of situations that may require implementation of a contingency plan include unexpected and heavily biofouled vessel presence in shared ports, discovery of unknown species on the site suspected not to be native, incorrect assessment of risk of vessels due to poor visibility of biofouling.

32. Contingency planning aims to review those activities identified with the potential to introduce and/or spread INNS and could include measures such as:

- marking of areas to be avoided;
- implementation of monitoring;

- precautionary restrictions on vessel movements;
- consultation with relevant authorities, other water users and vessel operators; and
- containment measures such as sealing off part of a construction site to prevent spread.

5.4 MONITORING AND REVIEW

33. A clear recording system such as a log book or checklist will be created to accurately record the results of any checks or actions taken. This will allow formal steps to be put in place quickly to inform the Environmental Manager of potential INNS introduction.

34. The recording systems will be made available at all relevant vessels or ports as necessary to ensure personnel access.

35. The pINNSMP should also be reviewed in accordance with other relevant management plans with linkages demonstrated, as appropriate, in the proposed procedures and guidance. The full list of consent plans required is still to be determined however, as part of the consent application, a number of proposed plans have been submitted alongside the EIAR. These proposed consent plans relevant to the pINNSMP include:

- Proposed Environmental Management Plan (pEMP) (Buchan Offshore Wind Ltd, 2025a);
- Proposed Marine Mammal Mitigation Protocol (pMMMP) (Buchan Offshore Wind Ltd, 2025c);
- Proposed Navigation and Safety Vessel Management Plan (pNSVMP) (Buchan Offshore Wind Ltd, 2025e);
- Proposed Fisheries Mitigation, Monitoring and Communication Plan (pFMMCP) (Buchan Offshore Wind Ltd, 2025b); and
- Proposed Marine Pollution Contingency Plan (pMPCP) (Buchan Offshore Wind Ltd, 2025d).

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