Bowdun Offshore Wind Farm, Offshore EIA Report

Volume 4, Appendix 29: Outline Navigation Safety and Vessel Management Plan

TWP-BOW-ERM-CON-RPT-00002 | April 2026

Contents

List of Tables

List of Figures

Glossary

Defined term	Definition
Array Area	The Array Area is the area in which the Offshore Generation Assets will be located.
Bowdun Offshore Wind Farm Limited (BOWFL)	A Special Purpose Vehicle (SPV) (legal entity) for the purpose of developing the Project. BOWFL are the Applicant for the Offshore Application.
Commercial Fishing	Any form of fishing activity legally undertaken where the catch is sold for taxable profit.
The Convention on the International Regulations for Preventing Collisions at Sea (COLREGs)	A composite of 'Collision Regulations', referring to The Convention on the International Regulations for Preventing Collisions at Sea.
Developer (the)	Bowdun Offshore Wind Farm Limited (BOWFL) (also known as 'the Applicant' in pre-application and application documentation)
Environmental Impact Assessment (EIA)	Assessment of the potential likely significant effects of the Proposed Development on the physical, biological, and human environment during construction, Operations and Maintenance (O&M) and decommissioning.
Export Cable Corridor	The area seaward of Mean High Water Springs (MHWS) shaded in blue on Figure 1.1, which connects the Array Area with the Landfall Area within which the Offshore Export Cables will be installed.
Flag State	A Flag State is the state chosen by merchant ships to be registered in, so that the vessel is bound to carry the flag of that state and comply with that state's rules and regulations.
Impact	A change caused by an action that occurs during a project's lifetime.
Inter-Array Cables (IACs)	Cables which link the Wind Turbines to each other and with the Offshore Substation Platforms (OSPs).
Interconnector Cables	Cables which will connect individual OSPs to each other to provide redundancy against cable failure elsewhere.
Marine Directorate (MD)	The Marine Directorate of the Scottish Government, formerly known as Marine Scotland. The planning and licensing authority for Scotland's seas and custodian of Scotland's National Marine Plan (NMP). The Marine Directorate - Licensing and Operations Team (MD-LOT) are specifically responsible for managing Section 36 Consent and Marine Licence Applications seaward of MHWS.
Mitigation	Measures to avoid, prevent, reduce or control effects on the environment. See also definitions for Embedded Mitigation and Additional Mitigation.
Offshore Environmental Impact Assessment (EIA) Report (hereafter, 'Offshore EIA Report')	Document prepared to report the findings of the EIA for the Proposed Development and produced in accordance with the EIA Regulations. Submitted to support the Offshore Application for the Proposed Development.
Offshore Export Cables	Subsea cables used to transmit electricity generated offshore by the Wind Turbines from the OSPs to shore. The Transition Joint Bay (TJB) is the location where the Offshore Export Cables terminate, and the onshore cabling begins.

Defined term	Definition
Offshore Infrastructure	All of the Offshore Infrastructure associated with the Proposed Development that is located seaward of MHWS, comprising the Offshore Generation Assets and the Offshore Transmission Assets.
Offshore Substation Platform(s) (OSPs)	OSPs comprise the support structure, topside and electrical components used for collecting and/or converting electricity generated by the Wind Turbines for transmission by the Offshore Export Cables.
Operation and Maintenance (O&M)	The phase of the Proposed Development following completion of construction. This phase of development includes routine inspections, repairs and replacement of infrastructure and equipment (including interconnector and IACs), scour protection replenishment or replacement, major component replacement, painting and/or other coating works, removal of marine growth, replacement of access ladders and geophysical surveys.
Plan Option Area (POA)	A location identified in the SMP as a preferred area for commercial scale offshore wind development.
Project (the)	An overarching term for the Bowdun Offshore Wind Farm (Bowdun OWF) comprising the offshore and onshore infrastructure required to generate and transmit electricity from the Array Area to the onshore Grid Connection Point (GCP). The Project includes the Offshore Generation Assets, the Offshore Transmission Assets and the Onshore Infrastructure.
Proposed Development	Term used to define the Offshore Infrastructure associated with the Project seaward of MHWS for which consent is being sought. Further details of the parameters are included in Volume 1, Chapter 3: Project Description.
Risk	The likelihood of an adverse event occurring.
Safety Zones	An area extending a maximum of 500 m from the central point of a subsea installation in which other vessels are prohibited from entering, except in circumstances outlined within Section 96 of the Energy Act, 2004.
Sectoral Marine Plan (SMP)	A plan developed by the Scottish Government which provide the strategically planned spatial footprint for offshore wind development in Scotland.
Site Boundary	The boundary within which all elements of the Proposed Development will be located. The Site Boundary comprises the Array Area and Export Cable Corridor which ends at MHWS.
Thistle Wind Partners (TWP)	The Joint Venture (JV) of DEME Concessions, Qair Marine, and Aspiravi International.
Wind Turbines	Structures comprising of a tubular tower, rotor blades, and a nacelle which houses the Wind Turbine generator.

Acronyms

Acronym	Definition
AIS	Automatic Identification System
AtoN	Aids to Navigation
BOWFL	Bowdun Offshore Wind Farm Limited
CAA	Civil Aviation Authority
CaP	Cable Plan
CBA	Cable Burial Assessment
CBRA	Cable Burial Risk Assessment
CMS	Construction Method Statement
COLREGs	Convention on International Regulations for Preventing Collisions at Sea
CoCP	Code of Construction Practice
CTV	Crew Transfer Vessels
CSIP	Cable Specification and Installation Plan
DSLP	Development Specification and Layout Plan
DSV	Dive Support Vessels
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERCoP	Emergency Response Cooperation Plan
ERM	Environmental Resources Management
FLO	Fisheries Liaison Officer
HDD	Horizontal Directional Drilling
HMCG	His Majesty's Coastguard
HSE	Health and Safety Executive
HTV	Heavy Transport Vessel
IAC	Inter-Array Cable
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IHO	International Hydrographic Organisation
IMO	International Maritime Organisation
INNS	Invasive Non-Native Species
KIS-ORCA	Kingfisher Information Service – Offshore Renewables & Cable Awareness
LMP	Lighting and Marking Plan
LNtM	Local Notices to Mariners
MAIB	Marine Accident Investigation Branch
MC	Maritime Coordinator

Acronym	Definition
MCA	Maritime Coastguard Agency
MD-LOT	Marine Directorate – Licensing Operations Team
MF	Medium Frequency
MGN	Marine Guidance Note
MMMP	Marine Mammal Mitigation Plan
MoD	Ministry of Defence
MPCP	Marine Pollution and Contingency Plan
MRCC	Maritime Rescue Coordination Centres
NAVAREA	Navigational Area
Navtex	Navigational Telex
NLB	Northern Lighthouse Board
NOTAM	Notice To Aviation Missions
NP52	North Coast of Scotland Pilot
NSVMP	Navigation Safety and Vessel Management Plan
NtM	Notices to Mariners
O&M	Operation and Maintenance
OMP	Operation and Maintenance Programme
OREI	Offshore Renewable Energy Installation
OSP	Offshore Substation Platform
PLGR	Pre-Lay Grapnel Run
POA	Plan Option Area
RAM	Restricted in Ability to Manoeuvre
SC	Subsea Collectors
SMP	Sectoral Marine Plan
SOLAS	International Convention for the Safety of Life at Sea
SOV	Service Operation Vessels
UKHO	United Kingdom Hydrographic Office
UXO	Unexploded Ordnance
VHF	Very High Frequency

Table of Units

Units	Definition
cm	Centimetre
$CO2_e$	Carbon Dioxide Equivalent
dB	Decibel
ft	Feet
gCO2/kWh	Grams of Carbon Dioxide per Kilowatt-Hour
GW	GigaWatt

Units	Definition
J	Joule
kg	Kilogram
kHz	Kilohertz
kJ	Kilojoule
km	Kilometre
km²	Square kilometre
kts	knots
kV	Kilovolt
m	Metre
m²	Square Metre
mLAT	Metres above/below Lowest Astronomical Tide
mm	Millimetre
m/s	Metre per second
MW	MegaWatt
nm	Nautical mile
$tCO2_e$	Tonnes of Carbon Dioxide Equivalent
°	Degree
°C	Degree Celsius
£	GBP
‘	Minute
%	Percent

1 Introduction

1.1 Purpose of this Document

1.1.1 This Outline Navigation Safety and Vessel Management Plan (NSVMP) has been prepared by ERM on behalf of Bowdun Offshore Wind Farm Limited (BOWFL) (the Developer) for the offshore elements of the Bowdun Offshore Wind Farm (OWF) Project (hereafter referred to as the Proposed Development). The Proposed Development covers the Option Lease Area which is which is located in the E3 Plan Option Area (POA) detailed in the Scottish Sectoral Marine Plan (SMP) (Scottish Government, 2020), and the Export Cable Corridor. The Array Area is located 38 km from the Aberdeenshire coast at its closest point, covering an area of 187 km^2 (Figure 1.1). The Proposed Development will comprise the Wind Turbines (fixed foundations), Inter-Array Cables (IACs), Offshore Substation Platform(s) (OSPs), Interconnector Cables and any necessary scour/cable protection. The Offshore Export Cable Corridor consists of up to three High Voltage Alternating Current (HVAC) Offshore Export Cables, each with a length of up to 70 km and will make Landfall at Benholm, AberdeenshireFigure 1.1.

1.1.2 The purpose of the NSVMP is to provide information on the vessel management and navigation safety measures to be implemented, in accordance with relevant guidance, for all phases of the Proposed Development (construction, O&M and decommissioning). It is anticipated that the Section 36 Consent and Marine Licences will state conditions requiring a Navigation Safety Plan and Vessel Management Plan. The relevant Section 36 and Marine Licence conditions will be detailed in Table 1.1 post consent, which outlines where the conditions have been addressed within this NSVMP.

Table 1.1: Section 36 and Marine Licence Conditions Relevant to this NSVMP

Condition Reference	Condition	Relevant Section
[to be updated pre-construction]	[to be updated pre-construction]	[to be updated pre-construction]

1.1.3 This Outline NSVMP is a 'live' document and as such it will be further developed pre-construction in consultation with regulatory bodies and stakeholders such as the MD-LOT, Maritime Coastguard Agency (MCA) and Northern Lighthouse Board (NLB), once project design has been finalised. This NSVMP will be updated and submitted to Marine Directorate – Licensing and Operations Team (MD-LOT) for approval pre-construction.

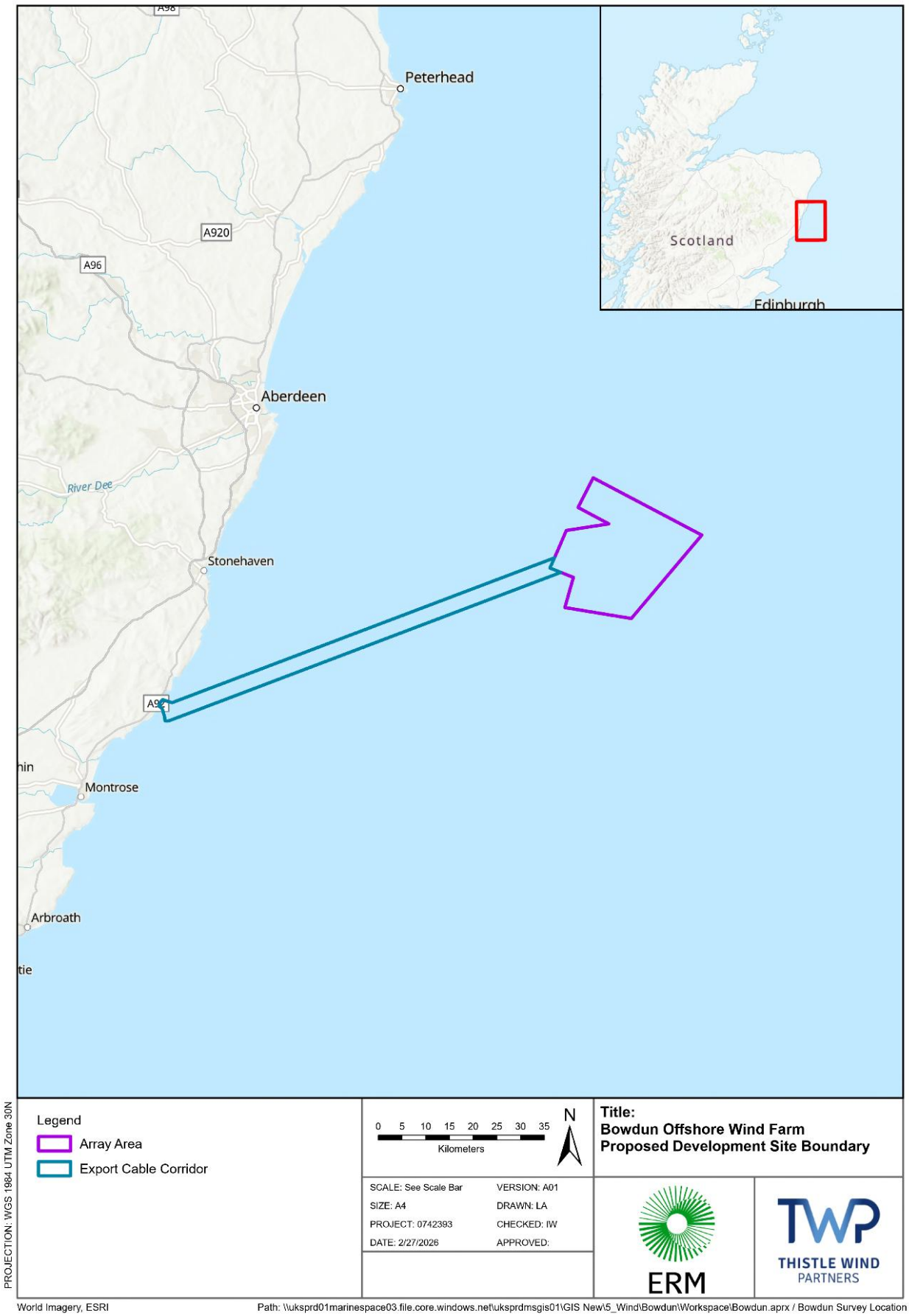

Figure 1.1: Proposed Development Site Boundary

1.2 Aim and Objectives

1.2.1 This Outline NSVMP has been written in accordance with the relevant guidance and is applicable to navigation safety and vessel management during construction and operation and maintenance (O&M) of the Proposed Development.

1.2.2 The final NSVMP will provide the necessary details of navigation safety and vessel management during the construction and O&M phases of the Proposed Development to MD-LOT, which will mitigate the impact of vessels associated with the Proposed Development and the potential navigational risk to other sea users.

1.2.3 The information presented in this document is based on the existing understanding of the baseline environment and the expected methods for the construction and O&M of the Proposed Development, including the use of the best available technologies while adhering to current legislation and best practice guidance as of the time of writing.

1.2.4 Information included in this Outline NSVMP is accurate at the time of writing however it is recognised that it will need to be reviewed and updated as required to reflect any changes following consultation or revised best practice.

1.3 Other Relevant Consent Management Plans

1.3.1 This document is one of several consent management plans which requires approval from MD-LOT regarding the compliance with relevant Section 36 and Marine Licence conditions.

1.3.2 Where additional information which is linked to this NSVMP is provided in a separate document, these have been summarised in Table 1.2 below.

Table 1.2: Other Relevant Consent Management Plans

Relevant Plan	Link to NSVMP	Relevant Section
[to be updated pre-construction]	[to be updated pre-construction]	[to be updated pre-construction]

1.4 Updates to the NSVMP

1.4.1 After this document has been approved there may be certain circumstances which require the document to be reviewed/updated, this may include:

- Completion of a Project lifecycle phase i.e. construction completed marking the transition to the O&M phase;
- Significant updates to the methods or details outlined within this document;
- Significant updates[1] to the current baseline information or relevant environment;
- Significant updates[1] to the relevant legislation or best practice guidance; and
- Planned reviews.

1.4.2 If there are significant updates to the vessel management as outlined in this NSVMP, consultation will first be undertaken with MD-LOT who can advise if an update to the NSVMP is required. Any updates to the NSVMP will be submitted to MD-LOT for re-approval.

[1] Significant updates are defined as changes to the anticipated number of vessels, changes to ports or the project description; changes will be discussed with relevant stakeholders to determine if the NSVMP would be subject to updates.

2 Project Background

2.1.1 The main components of the Proposed Development, as shown in Volume 1, Chapter 3: Project Description of the Offshore Environmental Impact Assessment (EIA) Report (hereafter, 'Offshore EIA Report'), will include:

Offshore Generation Assets

- Up to 67 Wind Turbines (each comprised of three rotor blades, a nacelle housing the generating unit, hub and tower section) and associated supporting structures which will be fixed foundations;
- A network of up to 167 km of IACs which will be static cables;
- Up to 36 km of Interconnector Cables; and
- Scour Protection, cable protection and utility crossings.

Offshore Transmission Assets

- Up to three OSPs with fixed foundations and supporting infrastructure including scour protection (as required);
- Up to three Offshore Export Cables totalling approximately 210 km in length; and
- Cable protection and utility crossings where required.

2.1.2 A full description of the Proposed Development is provided in Volume 1, Chapter 3: Project Description of the Offshore EIA Report. However, the detailed and final design of the Proposed Development will be determined pre-construction.

3 Consultation

3.1.1 This NSVMP will be informed by consultation with MD-LOT, MCA and NLB. Details of the consultation that will be undertaken will be described in this section pre-construction.

3.1.2 The NSVMP will also establish a communication protocol between the Developer and Danger Area range operator for the presence of surface vessels throughout all phases of the Proposed Development. This communication will be established pre-construction.

4 Navigational Safety Measures During Construction

4.1 Construction Lighting and Marking

4.1.1 Details of the lighting and marking of the Proposed Development during construction are covered in the Lighting and Marking Plan (LMP) as per NLB, MCA, Civil Aviation Authority (CAA) and Ministry of Defence (MoD) requirements. An Outline LMP has been submitted alongside the Offshore EIA Report, which can be found in Volume 4, Appendix 31: Outline Lighting and Marking Plan.

4.2 Construction Safety Zones

4.2.1 The requirements for applying for a statutory Safety Zone to be placed around or adjacent to an Offshore Renewable Energy Installation (OREI) are set out in Section 95 and Schedule 16 of the Energy Act 2004. The Electricity (Offshore Generating Substations) (Safety Zones) (Applications Procedures and Control of Access) Regulations 2007 sets out the requirements for applications which apply to territorial waters in or adjacent to Scotland and within the Renewable Energy Zone.

4.2.2 Pre-construction an application will be made to MD-LOT which will include a final Wind Turbine layout plan, a summary of the construction programme and a construction method statement, it will also detail the proposed methodology for notifying relevant stakeholders. The application will present a safety case for the proposed Safety Zones being sought and an assessment of the potential risks to shipping and navigation identified due to the presence of Safety Zones.

4.2.3 An application for and use of Safety Zones of up to 500 m during construction will be sought. Minimum advisory safe passing distances may also be applied, these will be defined by undertaking a risk assessment.

4.2.4 Advance warning and accurate location details of Safety Zones operations associated Safety Zones and advisory passing distances will be given via Notices to Mariners (NtMs) and Kingfisher Bulletins.

4.2.5 [Details of Safety Zones during Construction to be added pre-construction].

4.3 Guard Vessels

4.3.1 Where appropriate, guard vessels may be used during construction, for example when vessels and/or the Proposed Development are vulnerable due to incomplete works or specific construction activities.

4.3.2 Throughout these periods, guard vessels will be utilised to monitor construction activities, ensuring the protection of the area and to provide additional information to the third-party vessels.

4.3.3 To determine if a guard vessel will be deployed, a risk assessment of activities will be completed. Guard vessels may also be deployed where applicable to ensure adherence with Safety Zones or advisory passing distances, with this being further assessed as part of the Safety Zone application.

4.4 Cable Laying and RAM Operations

4.4.1 Restricted in Ability to Manoeuvre (RAM) vessels will be deployed during the cable installation works, heavy lifting operations and foundation installation works associated with the Proposed Development.

4.4.2 All RAM vessels which will be utilised during the construction phase of the Proposed Development will comply with the Convention on International Regulations for Preventing Collisions at Sea (COLREGs) (International Maritime Organisation (IMO), 1972). All vessels, regardless of their nationality, are required to comply with this convention to ensure that they do not interact with vessels that are restricted in their navigational ability.

4.4.3 To indicate their restrictions, RAM vessels will display the appropriate lights and shapes. The RAM vessels will transmit safety warnings on Very High Frequency (VHF) radio to inform other vessels of their actions using the 'Securité' message, if the messages contain important information relating to navigation. There will be ongoing communications between the RAM vessels and the marine coordination centre throughout operations.

4.4.4 RAM vessels will comply with vessel type regulation information, transmitted through Automatic Identification System (AIS) and current navigational status will be shown at all times to ensure other vessels equipped with AIS can identify that they are RAM.

4.4.5 Cable laying activities will be promulgated through the notification procedures outlined in Section 6 and, if necessary, guard vessels will be deployed. Minimum advisory safe passing distances may also be in place/utilised as required.

4.5 Emergency Response Cooperation Plan

4.5.1 The Developer will develop an Emergency Response Cooperation Plan (ERCoP) in consultation with the MCA as required under MGN 654 (MCA, 2021). This will be reviewed and updated as necessary in the event of any relevant changes.

4.6 Injury and Destruction or Decay of the Proposed Development

4.6.1 In the event of injury to, destruction, or decay of the Proposed Development during the construction phase, the Developer will notify MD-LOT in writing. MD-LOT will advise of any necessary remedial action to be carried out and any Aids to Navigation (AtoN) to be displayed following consultation from the MCA, NLB, or other relevant advisors, compliant with Volume 4, Appendix 32: Outline Aids to Navigation Management Plan.

4.7 Marine Coordination

4.7.1 [Details of Marine Coordination to be added pre-construction].

5 Navigational Safety Measures During O&M

5.1 Operation Lighting and Marking

5.1.1 Details of the lighting and marking of the Proposed Development during O&M are covered in the Lighting and Marking Plan (LMP) as per NLB, MCA and MoD requirements. An Outline LMP has been submitted alongside the Offshore EIA Report, which can be found in Volume 4, Appendix 31: Outline Lighting and Marking Plan.

5.2 O&M Safety Zones

5.2.1 An application for and use of Safety Zones of up to 500 m during major maintenance will be sought. Minimum advisory safe passing distances may also be applied, these will be defined by a risk assessment.

5.2.2 Advance warning and accurate location details of operations associated Safety Zones and advisory passing distances will be given via NtMs and Kingfisher Bulletins. [Details of Safety Zones during O&M to be added pre-construction].

5.3 Guard Vessels

5.3.1 Where applicable, guard vessels may be deployed during the O&M phase for example, during major maintenance works. Throughout these periods, guard vessels will be utilised to monitor maintenance activities, ensuring the protection of the area and to provide additional information to the third-party vessels.

5.3.2 To determine if a guard vessel will be deployed, a risk assessment of activities will be completed. Guard vessels may also be deployed where applicable to ensure adherence with Safety Zones or advisory passing distances, with this being further assessed as part of the Safety Zone application.

5.4 Cable Inspections and RAM Operations

5.4.1 RAM vessels may be deployed during maintenance works, RAM vessels will follow the same procedures as set out in Section 4.4.

5.4.2 Cable maintenance including inspections, will be promulgated through the notification procedures outlined in Section 6 and, if necessary, guard vessels will be deployed. Minimum advisory safe passing distances may also be in place/utilised as required.

5.5 Hydrographic Surveys

5.5.1 In line with the requirements of MGN 654, post-installation hydrographic surveys will be completed. Following the completion of all these surveys the data and associated survey report will be submitted to the MCA hydrography manager for review. Following approval, it will be shared to the United Kingdom Hydrographic Office (UKHO), and the MD-LOT will be notified.

5.6 Emergency Response Cooperation Plan

5.6.1 The approved ERCoP for the construction phase which is described in Section 4.5, will be reviewed and updated as necessary for the O&M phase of the Proposed Development.

5.7 Injury and Destruction or Decay of the Proposed Development

5.7.1 In the event of injury to, destruction, or decay of the Proposed Development during the O&M phase, the Developer will notify MD-LOT in writing. MD-LOT will advise of any necessary remedial action to be carried out and any AtoN to be displayed following consultation from the MCA, NLB, or other relevant advisors.

5.8 Marine Coordination

5.8.1 [Details of Marine Coordination to be added pre-construction].

6 Promulgation of Information

6.1 Introduction

6.1.1 This section outlines the proposed approach to distribute and issue NtM and other relevant notifications to relevant stakeholders and other marine users.

6.2 Local Notices to Mariners

6.2.1 Local Notices to Mariners (LNtM) will be issued to a list of relevant local and national stakeholders prior to any activities that will be undertaken which are associated with the Proposed Development which has potential to impact navigational safety. The list of stakeholders will be regularly reviewed and updated as appropriate.

6.2.2 The information that will be included in the LNtM will detail the navigational safety information, including but not limited to the information detailed in Table 6.1.

Table 6.1: LNtM Template Details

LNtM Information	Details
Title and description of the topic	Document will be stated clearly as a LNtM and include a short description of the topic. The date of issue and notification ID will be included.
Additional information	Details of the organisation/development issuing the LNtM and any relevant information on other LNtM that may have been issued prior.
Details of notice	Following information will be included: • Date, start/finish time and location of the works (including coordinates) • Vessel details including call signs; • Activity being undertaken; and • Specific Risk to navigation.
Contact details	Full details to allow mariners to contact the organisation issuing the LNtM, including the marine coordination centre and/or a 24-hour emergency contact.
Guard vessels and Safety Zone details	Details of any guard vessels, use of Safety Zones and minimum advisory safe passing distances which will be in place.
Hyperlinks to additional information	Links to additional information to be provided if necessary.

6.2.3 The LNtM will be provided to the UKHO amongst many other stakeholders. Once the LNtM has been received by UKHO, they will determine where information will be included in their Weekly Admiralty NtM which is described further in Section 6.3.

6.2.4 The process which will be followed to issue a LNtM through each phase of the Proposed Development is summarised in Table 6.2.

Table 6.2: LNtM Process

Notification	Overview
LNtM issued prior to the commencement of construction	In advance of the commencement of any construction activities, the Developer will ensure that local mariners, fishermen's organisations, His Majesty's Coastguard (HMCG), and any Maritime Rescue Coordination Centres (MRCC) are appropriately notified of the Licensable Marine Activity through LNtM (and any other relevant channels).
LNtM issued during construction	Throughout construction, the Maritime Coordinator (MC) will ensure that the UKHO and any other relevant stakeholders have been notified prior to any notable activities while ensuring that the MCA are aware of any vessels associated with the Proposed Development are on site and how to contact them. Anything that poses a potential Risk to navigation safety will also be notified to the UKHO and other relevant stakeholders, for example faults to navigational aids.
LNtM issued upon commissioning and during O&M	The Developer will ensure that local mariners, fisheries organisations, and the MRCC are appropriately notified once construction is completed and the Proposed Development is commissioned. The Developer will ensure that any relevant stakeholders are notified through LNtMs of any planned and unplanned maintenance works which are considered beyond day-to-day maintenance works associated with the Proposed Development.
Post-commissioning	Following the commissioning of the Proposed Development, the Developer will provide the final positions and maximum heights of all Offshore Infrastructure to the UKHO for aviation and navigational charting.

6.3 Admiralty Notices to Mariners

6.3.1 Admiralty NtMs are issued to the UKHO and any other relevant stakeholders by the Developer and are informed by the details included in within a LNtM.

6.3.2 The UKHO issues Admiralty NtMs on a weekly basis to provide up-to-date physical corrections to charts and associated publications. Mariners are responsible for accessing the Weekly Editions of Admiralty NtM available on the UKHO website and implement the required corrections to the charts on board their vessels.

6.4 Hydrographic Charts

6.4.1 The Developer will provide the specific locations and maximum heights of all Offshore Infrastructure and construction infrastructure, and the details of any fixed lighting fitted to the Wind Turbines and OSPs will be provided to the UKHO for aviation and navigational charting. UKHO will ensure that the Wind Turbines are charted using the Wind Turbine tower or the Project area chart symbol on appropriate charts in terms of scale.

6.5 KIS-ORCA and Kingfisher Bulletins

6.5.1 The Kingfisher Information Service – Offshore Renewables & Cable Awareness (KIS-ORCA) project is a collaborative effort between Subsea Cables UK and Renewable UK which is managed by the Kingfisher Information Service of Seafish. The KIS-ORCA project's objective is to deliver precise, current and

accessible information regarding subsea cables and OREIs throughout Europe. Information is shared through fortnightly bulletins (Kingfisher – Offshore and Marine Renewables) or can be downloaded via the KIS-ORCA website.

6.5.2 Any KIS-ORCA notifications associated with the Proposed Development will include:

- Overview of the Proposed Development;
- Roles and Responsibilities;
- Methodology of the works being undertaken relevant to the notification;
- Offshore works schedule;
- Navigational safety procedures;
- Details of Safety Zones and minimum advisory safe passing distances; and
- Relevant drawings or Project Information.

6.5.3 The process which will be followed to issue a KIS-ORCA notification through each phase of the Proposed Development is summarised in Table 6.3.

Table 6.3: KIS-ORCA Notification Process

Notification	Overview
Notification issued prior to the commencement of construction	As soon as reasonably practicable, appropriate information will be promulgated in the Kingfisher bulletins in advance of the commencement of construction works to ensure that other sea users have been notified of vessel routes, timings, locations and other relevant information.
Notification issued during construction	The marine coordination centre (see Section 4.7) will disseminate updates on the construction progress of the Proposed Development through the Kingfisher bulletins. These bulletins will inform other sea users of vessel routes, timings, locations and other relevant information.
Notification issued upon commissioning and during O&M	The Applicant will ensure that the completion of construction works is promulgated to the Kingfisher bulletin to inform other sea users. The Applicant will ensure that any relevant stakeholders are notified through the Kingfisher bulletin of any planned and unplanned maintenance works which are considered beyond day-to-day maintenance works associated with the Proposed Development.

6.6 Radio Navigational Warnings

6.6.1 Where an activity or incident may result in a risk to other marine users Radio Navigational Warnings may be issued. This may include circumstances such as:

- Failures to light signals, fog signals, buoys or other AtoN;
- Establishment of a new major AtoN;
- Cable laying activities which increase risk to passing traffic;
- Other underwater operations that pose risk to shipping lanes; and
- Vessels not under command or that are completing RAM operations.

6.6.2 Following the promulgation of relevant details through the LNtM process, the UKHO will determine if a warning is required to be transmitted as a Radio Navigational Warning. The UKHO will issue the navigational warning is appropriate.

6.6.3 The MCA is the overarching body responsible for broadcasting the warnings and are the organisation responsible for charging to broadcast them. The broadcasts are under the control of the UKHO but are often made as described below:

- For vessels in Navigational Area (NAVAREA) 1, broadcasts are made via Enhanced Group Call SafetyNet within 30 minutes of receiving the navigational warning, or at the next scheduled broadcast (every 12 hours);
- Broadcast by Navigational Telex (Navtex) made twice a day as UK Coastal Navigational Warnings by appropriate Navtex stations at each transmission interval (every four hours), or upon receipt of the information if it is of a vital nature; and
- Broadcast by VHF or Medium Frequency (MF) radio at selected MCA stations at the next scheduled broadcast and every 12 hours thereafter.

6.7 UK Marine Reporting Requirements

6.7.1 In UK waters, it is mandatory for all vessels to promptly report any incidents concerning navigational safety using the fastest available method to the Marine Accident Investigation Branch (MAIB). The MAIB uses a dedicated reporting line for all purposes (+44 (0)23 8023 2527), which is open 24-hours per day.

6.7.2 The information required when reporting includes:

- Details of the incident;
- Details of the vessel(s) involved; and
- Details of personnel involved.

6.8 Other Notifications

6.8.1 Where appropriate, the Developer will engage with local Harbour Masters who may wish to issue local warnings to those navigating within the vicinity of the Proposed Development.

7 Vessel Management

7.1.1 Throughout all phases of the Proposed Development, all marine operations and vessel movements will be scheduled with consideration of NSVMP requirements. A Marine Coordinator will be appointed for the Proposed Development who will oversee the management and coordination of vessels.

7.1.2 Relevant measures will be implemented during the construction phase of the Proposed Development, these will include:

- Managed permissions for construction vessels to enter the construction area and Safety Zones, for example using a Permit to Work system;
- Where appropriate, liaison with vessels with regards to agreed routeing destinations/berths/anchorages;
- Monitoring of vessels and personnel via communication with vessels and AIS for any potential vessel access conflicts. The Marine Coordinator will also detect and monitor unauthorised vessels;
- Defined Safety Zones, minimum advisory safe passing distances, no-go locations etc;
- Provision of localised weather information for vessels associated with the Proposed Development to improve planning of works being undertaken;
- Coordination with Space Ports as required;
- The Marine Coordinator will be the central contact point for contractors in case of an emergency and will maintain a copy of the ERCoP; and
- Promulgation of NtMs received from contractors after being reviewed and approved by the Developer.

7.1.3 During all phases of the Proposed Development, bunkering may be required within the Site Boundary. Relevant details will be provided in the Environmental Clerk of Works (ECoW) reporting.

7.1.4 Similar measures to those outlined above will be implemented during the operations phase of the Proposed Development.

8 Location of Working Ports

8.1 Construction Ports

8.1.1 Details of the ports used during the construction phase of the Proposed Development are yet to be determined. Once known, the details of the ports will be included here pre-construction and on finalisation of the NSVMP.

8.1.2 [Details of ports to be used during construction to be added pre-construction].

8.2 O&M Ports

8.2.1 Details of the ports used during the O&M phase of the Proposed Development are yet to be determined. Once known, the details of the ports will be included here pre-construction and on finalisation of the NSVMP.

8.2.2 [Details of ports to be used during O&M to be added pre-construction].

8.3 Other Operational Ports

8.3.1 Other ports may be used in addition to those listed above. Once known, the details of the ports will be included here pre-construction and finalisation of the NSVMP.

8.3.2 Information regarding the use of these ports will be promulgated through the notification procedures outlined in Section 6.

8.3.3 [Details of ports to be used during O&M to be added pre-construction].

9 Vessel Information

9.1 Introduction

9.1.1 The types and specifications of vessels to be utilised throughout the construction phase and O&M phase of the Proposed Development are outlined in this section.

9.1.2 The Developer will notify MD-LOT of the final vessel list in advance of any construction or O&M works.

9.2 Standards and Requirements

9.2.1 All vessel crews are required to meet recognised standards and comply with international maritime rules (in accordance with the relevant Flag State) and regulations for their class and area of operation. The Developer will undertake independent vessel audits on vessels as necessary, to ensure that they meet the relevant standards and are fit for purpose.

9.2.2 It is mandatory that all vessel crews meet the requirements for size, type and area of operation in accordance with Standards for Training, Certification and Watchkeeping as determined by the IMO, and any site-specific requirements set by the Developer which are beyond the minimum standards.

9.2.3 Throughout all phases of the Proposed Development, all vessels will be lit in accordance with the requirements of COLREGs (IMO, 1972) and will be equipped with AIS receivers and transmitters.

9.2.4 Throughout all phases of the Proposed Development, the Developer will ensure that all vessels comply with the procedures described in this document and any other relevant plan.

9.3 Construction Vessel Types

9.3.1 This section presents examples of the vessel types that will be used during the constructions works, such as:

- Site preparation works;
- Wind Turbine fixed foundation installation;
- Wind Turbine installation;
- OSP topside and fixed foundation installation;
- IAC installation;
- Interconnector Cable installation;
- Offshore Export Cable installation; and
- Construction support e.g. Crew Transfer Vessel (CTV) and Service Operation Vessel (SOV).

Site Preparation Works

Vessel Type/Name

9.3.2 The [Vessel Type/Name] will undertake a range of seabed preparatory works prior to the commencement of construction.

9.3.3 Key details of an indicative [Vessel Type/Name] are presented in Table 9.1.

Table 9.1: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Wind Turbine Fixed Foundation Installation

Vessel Type/Name

9.3.4 The [Vessel Type/Name] will install the Wind Turbine foundation once on site.

9.3.5 Key details of an indicative [Vessel Type/Name] are presented in Table 9.2.

Table 9.2: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Wind Turbine Installation

Vessel Type/Name

9.3.6 The [Vessel Type/Name] will install the Wind Turbine to the foundation once on site.

9.3.7 Key details of an indicative [Vessel Type/Name] are presented in Table 9.2.

Table 9.3 [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

OSP Topside and Fixed Foundation Installation

Vessel Type/Name

9.3.8 The [Vessel Type/Name] will collect the OSP topside and fixed foundation from [insert port]. The [Vessel Type/Name] will install the OSP topside and fixed foundation once on site.

9.3.9 Key details of an indicative [Vessel Type/Name] are presented in Table 9.4.

Table 9.4: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

IAC Installation

Vessel Type/Name

9.3.10 The [Vessel Type/Name] will collect the IACs and SCs from [insert port]. The [Vessel Type/Name] will install the IACs once on site.

9.3.11 Key details of an indicative [Vessel Type/Name] are presented in Table 9.5.

Table 9.5: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Interconnector Cable Installation

Vessel Type/Name

9.3.12 The [Vessel Type/Name] will collect the Interconnector Cables from [insert port]. The [Vessel Type/Name] will install the Interconnector Cables once on site.

9.3.13 Key details of an indicative [Vessel Type/Name] are presented in Table 9.6.

Table 9.6: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Offshore Export Cable Installation

Vessel Type/Name

9.3.14 The [Vessel Type/Name] will collect the Offshore Export Cable from [insert port]. The [Vessel Type/Name] will install the Offshore Export Cable once on site.

9.3.15 Key details of an indicative [Vessel Type/Name] are presented in Table 9.7.

Table 9.7: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Construction Support

9.3.16 A range of additional vessels including tug/anchor handlers, guard vessels, and Dive Support Vessels (DSVs) will be deployed to support construction by carrying out specific activities. Information for each vessel will be added below for each category of vessel as required.

Vessel Type/Name

9.3.17 The [Vessel Type/Name] will operate from [insert port].

9.3.18 Key details of an indicative [Vessel Type/Name] are presented in Table 9.8.

Table 9.8: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Crew Transfer Vessels

Vessel Type/Name

9.3.19 CTV will be used throughout the construction phase to transfer equipment and personnel.

9.3.20 Key details of an indicative [Vessel Type/Name] are presented in Table 9.9.

Table 9.9: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

Service Operation Vessels

Vessel Type/Name

9.3.21 SOVs will be used throughout the construction phase to transfer equipment and personnel.

9.3.22 Key details of an indicative [Vessel Type/Name] are presented in Table 9.10.

Table 9.10: [Vessel Type/Name] Key Details

Vessel Name: [Details to be inserted pre-construction]	
Vessel Type:	
Contact:	
Vessel Role:	
Key Characteristics	Length:
	Breadth:
	Deadweight Tonnage (DWT):
Propulsion:	
Mooring/Station Keeping:	

9.4 O&M Vessel Types

9.4.1 It is likely that the vessels used for O&M will be similar to those used for construction as described in Section 9.3. If there are any amendments these will be included here pre-construction and on finalisation of the NSVMP.

10 Vessel Numbers and Movements

10.1 Construction Vessels

10.1.1 During the construction phase, the number of vessels within the Site Boundary at any one time will vary. The peak number of vessel activity will be throughout major installation works.

10.1.2 Table 10.1 details the indicative number of vessels and vessel types that will be used within the Site Boundary which are involved in site preparation works. It is important to note that the number of transits given is a best estimate informed by available information at the time of writing and actual numbers may differ.

Table 10.1: Summary of Site Preparation Vessel Activity

Vessel Type	Maximum Design	
	Maximum Total Number of Vessels on Site at any One Time	Total Movements (Return Trips Across Site Preparation Activities)
Export Cable Corridor		
Geophysical/geotechnical survey vessel	7	55
Boulder/Unexploded Ordnance (UXO) clearance vessel*	2	10
Array Area		
Geophysical/geotechnical survey vessel	7	55
Boulder/UXO clearance vessel*	2	20
Total	18	140

* Sandwave clearance will be during construction rather than site preparation.

10.1.3 Table 10.2 details the indicative number of vessels and vessel types that will be within the Site Boundary which are involved in construction. It is important to note that the number of transits given is a best estimate informed by available information at the time of writing and actual numbers may differ.

Table 10.2: Summary of Construction Vessel Activity

Parameter	Maximum Design			
	Total Vessels on Site at any one time		Total Movements (Return Trips Across Installation Activities)	
	Array Area	Export Cable Corridor	Array Area	Export Cable Corridor
Main installation vessels (jack-up/dynamically positioned vessel)	2	N/A	97	N/A
Cargo barge/Heavy Transport Vessels (HTVs) (self-propelled)	2	N/A	97	N/A
Support vessels (including Service Operation Vessels (SOVs))	6	1	92	20
Scour protection installation vessels (rock placement)	2	N/A	89	N/A
Grouting vessels	2	N/A	69	N/A
Rock placement vessels	N/A	1	N/A	30
Tug/anchor handlers	2	N/A	97	N/A
Cable installation vessels (laying)	1	1	23	18
Cable installation vessels (burial)	1	1	11	21
Guard vessels	6	4	164	128
Survey vessels	2	1	52	44
CTVs	6	1	770	69
Sandwave clearance vessels	1	1	55	30
Pre-Lay Grapnel Run (PLGR) vessels	1	1	10	17
Boulder/UXO clearance vessels	3	2	45	60
Trenchless installation (e.g. Horizontal Directional Drilling) support vessels (spud leg, anchored barge or jack-up vessel)	N/A	1	N/A	6
Dive Support Vessels (DSVs)	N/A	1	N/A	6
Helicopters	1	1	130	137
Total	38	17	1, 801	586
Total (excluding helicopters)	37	16	1,671	449
Total on-site at any one time	25	16	N/A	N/A

10.2 Operation Vessels

10.2.1 During the O&M phase, the number of vessels within the Site Boundary at any one time will vary. The peak number of vessel activity will be throughout major maintenance works.

10.2.2 Table 10.3 and Table 10.4 detail the indicative number of vessels and vessel types that will be within the Site Boundary which are involved in O&M. It is important to note that the number of transits given is a best estimate informed by available information at the time of writing and actual numbers may differ.

Table 10.3: Summary of O&M Vessel Activity – Annual Activity

Parameter	Maximum Design			
	Maximum Total Number of Vessels on Site at any One Time		Maximum Total Movements (Return Trips Annually Across O&M Phase)	
	Array Area	Export Cable Corridor	Array Area	Export Cable Corridor
SOV/workboats	3	1	43	20
CTVs	3	2	500	20
Cable repair vessels (laying)	1	1	2	20
Cable repair vessels (burial solution)	1	1	2	31
DSV	1	1	7	6
Other vessels (including heavy lift vessels)	1	N/A	6	N/A
Guard vessels	2	2	28	28
Helicopters	2	1	20	10
Total	14	9	608	135
Total (excluding helicopters)	12	8	588	125

Table 10.4 Summary of O&M Vessel Activity – Across O&M Phase

Parameter	Maximum Design			
	Maximum Total Number of Vessels on Site at any One Time		Maximum Total Movements (Return Trips in Total Across O&M Phase)	
	Array Area	Export Cable Corridor	Array Area	Export Cable Corridor
Rock dumping vessels	1	1	70	41
Sandwave clearance vessels	1	1	12	12
Survey vessels	1	1	35	26
PLGR vessels	1	1	12	12
Boulder clearance vessels	1	1	12	12
UXO clearance vessels	1	1	5	5
Micro-tunnelling or HDD support vessels	N/A	1	N/A	6
Total	6	7	146	114

11 Indicative Transit Route Corridors

11.1.1 Indicative transit route corridors for the major construction vessels between the Array Area and relevant construction ports are presented in Figure 11.1. It should be noted that the indicative transit routes shown in Figure 11.1, are not prescriptive and may not be followed precisely by vessels, instead they are intended to provide to other sea users, an indication of the expected routes of major construction vessels.

[Hold for figure to be inserted pre-construction]

Figure 11.1: Indicative Transit Routes During Construction

11.1.2 All vessels associated with the Proposed Development will comply with COLREGs at all times. All vessels shall passage plan as per the International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974). There may be a variety of reasons for deviation at the discretion of the vessel Master, these may include:

- Compliance with COLREGs as required;
- Prevailing weather, tidal or sea state;
- Navigational hazards;
- Instructions from the marine coordination centre or other responsible persons with authority; and
- Any reason the vessel Master may consider relevant in the consideration of the safety of the vessel and/or other vessels.

12 Anchoring

12.1.1 Based on local Admiralty Charts, the locations of known anchorages within the vicinity of the Proposed Development are shown in Figure 12.1. Details of the anchorage areas found in the North Coast of Scotland Pilot (NP52) are presented in Table 12.1.

12.1.2 Anchoring is at the discretion of the vessel Master, however it can also be determined by consideration for information provided by the marine coordination centre or port authorities. When a vessel proceeds to anchor, it is standard marine practice that consideration is given to:

- Water depth;
- Seabed type and charted hazards including cables/pipelines;
- Weather and tidal information including current and predicted weather;
- Avoidance of prohibited anchorage areas;
- Consideration of other anchored vessels;
- Avoidance of known areas of other marine activity such as fishing or recreational boating; and
- Avoidance of main commercial routes, pilot boarding areas or other navigational features such as spoil grounds or subsea cables.

[Hold for figure to be inserted pre-construction]

Figure 12.1: Known Anchorages within the Vicinity of the Proposed Development

Table 12.1: Summary of Known Anchorages within the Vicinity of the Proposed Development

Anchorage number	Anchorage name	Details
[to be updated pre-construction]	[to be updated pre-construction]	[to be updated pre-construction]

13 Environmental Sensitivities Relevant to Vessel Management

13.1.1 [Information regarding any sensitivities relevant to construction and O&M vessel traffic associated with the Proposed Development will be outlined here pre-construction and on finalisation of the NSVMP. This will include aspects related to marine mammal and bird sensitivities in relation to the indicative vessel routes detailed in Section 11].

13.2 Marine Mammals

13.2.1 The guidelines within the Scottish Marine Wildlife Watching Code (SMWWC) will be adhered to by vessels operating within the indicative transit route corridors. The SMWWC was developed by NatureScot under the Nature Conservation (Scotland) Act 2004 with the aim of minimising disturbance to marine wildlife. The SMWWC includes guidelines such as:

- avoid abrupt changes in course or speed should marine mammals approach the vessel to bow-ride;
- remain at safe speeds at all times and reduce speed if appropriate when a marine mammal is in the vicinity;
- let the animals decide how close they want you to be. If you see signs of disturbance (such as sudden movements or flight, aggressive behaviour, “heads up”, bunching together, tail slaps) then you should move away and if possible take an alternative route or wait for the animals to move on.

14 Compliance with MGN 654

14.1.1 It is anticipated that there will be Section 36 and Marine Licence conditions that will require the Developer to ensure that this NSVMP addresses all recommendations of MGN 654 (MCA, 2021) and its annexes which are appropriate for the Proposed Development, or any other relevant document which may replace said guidance. Any required updates will be reflected in the final NSVMP.

14.1.2 MGN 654 has been reviewed and all appropriate requirements at the time of writing have been identified. The requirements are summarised in Table 14.1 below along with the reference to where they have been addressed.

Table 14.1: MGN 654 Checklist Elements Relevant to the NSVMP

MGN 654 Requirement	Checklist	Relevant Section
4.5 Site and installation coordinates	Developers are responsible for ensuring that formally agreed co-ordinates and subsequent variations of site perimeters and individual OREI structures are made available, on request, to interested parties at relevant project stages, including application for consent, development, array variation, operation and decommissioning. This should be supplied as authoritative Geographical Information System (GIS) data, preferably in Environmental Systems Research Institute (ESRI) format. Metadata should facilitate the identification of the data creator, its date and purpose, and the geodetic datum used. For mariners' use, appropriate data should also be provided with latitude and longitude coordinates in WGS84 (ETRS89) datum.	[to be updated pre-construction]
4.10 Assessment of access to and navigation within, or close to, an OREI	To determine the extent to which navigation would be feasible within the OREI site itself by assessing whether: a. Navigation within or close to the site would be safe: i. for all vessels; ii. for specified vessel types, operations and/or sizes; iii. in all directions or areas; iv. in specified directions or areas; or v. in specified tidal, weather or other conditions. b. Navigation in and/or near the site should be prohibited or restricted:	[to be updated pre-construction] [to be updated pre-construction] [to be updated pre-construction] [to be updated pre-construction] [to be updated pre-construction] [to be updated pre-construction]

MGN 654 Requirement	Checklist	Relevant Section
	i. for specified vessel types, operations and/or sizes; ii. in respect of specific activities; iii. in all areas or directions; iv. in specified areas or directions; or v. in specified tidal or weather conditions, or simply restricted. c. Where it is not feasible for vessels to access or navigate through the site it could cause navigational, safety or routeing problems for vessels operating in the area e.g. by preventing vessels from responding to calls for assistance from persons in distress. d. Guidance on the calculation of safe distance of OREI boundaries from shipping routes has been considered.	
4.11 Search and Rescue (SAR), maritime assistance service, counter pollution and salvage incident response	The MCA, through HM Coastguard, is required to provide Search and Rescue and emergency response within the sea area occupied by all offshore renewable energy installations in UK waters. To ensure that such operations can be safely and effectively conducted, certain requirements must be met by developers and operators. a. An ERCoP will be developed for the construction, operation and decommissioning phases of the OREI. b. The MCA's guidance document Offshore Renewable Energy Installation: Requirements, Advice and Guidance for Search and Rescue and Emergency Response for the design, equipment and operation requirements will be followed. c. SAR checklist will be completed to record discussions regarding the requirements, recommendations and considerations outlined in the above document (to be agreed with MCA).	[to be updated pre-construction] [to be updated pre-construction] [to be updated pre-construction]

MGN 654 Requirement	Checklist	Relevant Section
4.12 Hydrography	In order to establish a baseline, confirm the safe navigable depth, monitor seabed mobility and to identify underwater hazards, detailed and accurate hydrographic surveys are included or acknowledged for the following stages and to MCA specifications: i. Pre-construction: The proposed generating assets area and proposed cable route; ii. On a pre-established periodicity during the life of the development; iii. Post-construction: Cable route(s); and iv. Post-decommissioning of all or part of the development: the installed generating assets area and cable route.	[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
4.14 Risk mitigation measures recommended for OREI during construction, operation and maintenance and decommissioning	Mitigation and safety measures will be applied to the OREI development appropriate to the level and type of risk determined during the EIA. The specific measures to be employed will be selected in consultation with the MCA and will be listed in the developer's Environmental Statement (ES). These will be consistent with international standards contained in, for example, the Safety of Life at Sea (SOLAS) Convention - Chapter V, IMO Resolution A.572 (14)3 and Resolution A.671(16)4 and could include any or all of the following: i. Promulgation of information and warnings through notices to mariners and other appropriate maritime safety information (MSI) dissemination methods; ii. Continuous watch by multi-channel VHF, including Digital Selective Calling (DSC); iii. Safety zones of appropriate configuration, extent and application to specified vessels; iv. Designation of the sites as an area to be avoided (ATBA);	[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]
		[to be updated pre-construction]

MGN 654 Requirement	Checklist	Relevant Section
	v. Provision of AtoN as determined by the General Lighthouse Authority (GLA);	[to be updated pre-construction]
	vi. Implementation of routeing measures within or near to the development;	[to be updated pre-construction]
	vii. Monitoring by radar, AIS, Closed Circuit Television (CCTV) or other agreed means;	[to be updated pre-construction]
	viii. Appropriate means for OREI operators to notify, and provide evidence of, the infringement of safety zones;	[to be updated pre-construction]
	ix. Creation of an ERCoP with the MCA's SAR Branch for the construction phase onwards;	
	x. Use of guard vessels, where appropriate;	
	xi. Update NRAs every two years e.g. at testing sites;	
	xii. Device-specific or array-specific NRAs;	
	xiii. Design of OREI structures to minimise risk to contacting vessels or craft; and	
	xiv. Any other measures and procedures considered appropriate in consultation with other stakeholders.	

15 Compliance with the Application

15.1.1 In addition to the offshore Section 36 and Marine Licence conditions detailed in Table 1.1, further commitments have also been considered

15.1.2 On this basis, relevant aspects and commitments of the Proposed Development are detailed in Table 15.1; full details of mitigation for the Proposed Development can be found in Volume 3, Technical Appendix 4.6: Schedule of Mitigation and Commitments.

Table 15.1: Compliance with the Offshore EIA Report

ID*	Parameter/Commitment	Mitigation	Means of Implementation/ Corresponding Management Plan within the Application
1	Shipping and Navigation	Development of, and adherence to, a Cable Specification and Installation Plan (CSIP) post-consent.	Secured in the Section 36 Consent and Marine Licence, via the requirement for a CSIP
2	Shipping and Navigation	Use of anti-corrosion protective coatings and Scour Protection where there is potential for scour to develop around the Offshore Infrastructure, and it is appropriate to do so.	Secured in the Section 36 Consent and Marine Licence Volume 4, Appendix 30: Outline Scour Protection Management Plan
4	Shipping and Navigation	Development of, and adherence to, a Cable Burial Risk Assessment (CBRA) and the Cable Burial Assessment (CBA). Implementation, management and monitoring of cable protection, via burial or external protection where adequate burial depth is not feasible, will be undertaken as informed by these assessments. Results of these assessments, and commitments to post construction monitoring, will be provided in the Cable Plan (CaP).	Secured in the Section 36 Consent and Marine Licence, via the CBRA. CBA and CaP.
5	Shipping and Navigation	Development of, and adherence to, an Environmental Management Plan (EMP), including a Marine Pollution Contingency Plan (MPCP) and a Biosecurity Plan with commitments to monitoring and actions to minimise Invasive Non-Native Species (INNS).	Volume 3, Appendix 24: Outline Environmental Management Plan Volume 3, Appendix 25: Marine Pollution Contingency Plan
7	Shipping and Navigation	Development of, and adherence to, a Construction Method Statement (CMS) along with a Code of Construction Practice (CoCP).	Secured in the Section 36 Consent and Marine Licence, via the requirement for a CMS
8	Shipping and Navigation	All relevant Health and Safety Executive (HSE) procedures will be followed.	Required in accordance with relevant health and safety legislation
9	Shipping and Navigation	Development of, and adherence to, a combined Navigational Safety and Vessel Management Plan (NSVMP), describing Project vessels' requirements, passages, monitoring and controls.	Volume 4, Appendix 29: Outline Navigational Safety and Vessel Management Plan (this document).

ID*	Parameter/Commitment	Mitigation	Means of Implementation/ Corresponding Management Plan within the Application
11	Shipping and Navigation	Appointment of a Company Fisheries Liaison Officer (CFLO). The CFLO will support ongoing liaison and ensure clear communication between the Applicant and commercial fishers.	Volume 4, Appendix 28: Fisheries Mitigation, Monitoring and Communication Plan.
12	Shipping and Navigation	Advance warning and accurate location details of planned operations, associated Safety Zones and advisory passing distances will be given via Notices to Mariners (NtMs) and Kingfisher Bulletins.	Secured in the Section 36 Consent and Marine Licence, via the requirement for advance warnings.
13	Shipping and Navigation	Development of, and adherence to, a Lighting and Marking Plan (LMP). The LMP will confirm compliance with legal requirements with regards to shipping, navigation and aviation marking and lighting.	Volume 4, Appendix 31: Outline Lighting and Marking Plan
16	Shipping and Navigation	Application for, and use of, Safety Zones of up to 500 m during construction, major maintenance, and decommissioning phases. Advisory safe passing distances of up to 500 m will also be applied for mobile installation vessels.	Secured via an application for Safety Zones prior to construction commencing.
17	Shipping and Navigation	Any objects dropped on the seabed during works associated with the Proposed Development will be reported in line with MD-LOT procedures and objects will be recovered where they pose a hazard to other marine users and where recovery is possible.	Secured in the Section 36 Consent and Marine Licence, via the Dropped Object Procedure.
18	Shipping and Navigation	All vessels working on the Proposed Development will meet the required certification standards and carriage requirements along with following international marine regulations.	Volume 4, Appendix 29: Outline Navigational Safety and Vessel Management Plan.
20	Shipping and Navigation	Suitable Aids to Navigation (AtoN) lighting and marking of the Proposed Development including construction buoyage and the use of a Cable Marker Board shall be implemented complying with International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendations G1162 (IALA, 2021), to be finalised and approved in consultation with the Maritime and Coastguard Agency (MCA) and Northern Lighthouse Board (NLB) through a LMP.	Volume 4, Appendix 31: Outline Lighting and Marking Plan Volume 4, Appendix 32: Outline Aid to Navigation Management Plan
21	Shipping and Navigation	Wind Turbine design to have a minimum lower blade tip height of 33.12 m above Lowest Astronomical Tide (LAT).	Secured in the Section 36 Consent and Marine Licence.

ID*	Parameter/Commitment	Mitigation	Means of Implementation/ Corresponding Management Plan within the Application
22	Shipping and Navigation	Development of, and adherence to, an Emergency Response Cooperation Plan (ERCoP) in consultation with the Maritime & Coastguard Agency (MCA).	Secured in the Section 36 Consent and Marine Licence, via the requirement for an ERCoP
23	Shipping and Navigation	Development of, and adherence to, an Operation and Maintenance Programme (OMP) in conjunction with approved post-consent construction plans.	Secured in the Section 36 Consent and Marine Licence
24	Shipping and Navigation	Development of, and adherence to, a Development Specification and Layout Plan (DSLP). The development of the DSLP includes consultation with the relevant authorities for approval, including the MCA and NLB.	Secured in the Section 36 Consent and Marine Licence and the requirement for a DSLP.
34	Shipping and Navigation	Drafting and implementation of a decommissioning programme, prepared in accordance with requirements of the Energy Act 2004, which will set out the extent of infrastructure to be removed as well as the methods and processes which will be used.	Secured in the Section 36 Consent and Marine Licences, via the requirement for a decommissioning programme.
40	Shipping and Navigation	Creation of a Waste Management Plan (WMP), which will describe the processes for handling and managing any waste materials.	Secured in the Section 36 Consent and Marine Licences, via the requirement for an EMP.
41	Shipping and Navigation	The Proposed Development will be marked on Admiralty charts including an appropriate chart note.	Secured in the Section 36 Consent and Marine Licence.
42	Shipping and Navigation	Compliance of project vessels with international marine regulations as adopted by the Flag State, including International Regulations for Preventing Collisions at Sea (COLREGS) (IMO, 1972) and International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974).	Secured in the Section 36 Consent and Marine Licence.
43	Shipping and Navigation	Use of a trenchless technique (e.g. Horizontal Directional Drilling (HDD) or tunnelling) as the Landfall installation option.	Secured in the Section 36 Consent and Marine Licences
48	Shipping and Navigation	Where boulder removal is required during site preparation, the location of large boulders that are relocated and may pose a snagging risk for fishing gear, will be disclosed to the fishing industry within a timely manner and in an accessible format.	Secured in the Section 36 Consent and Marine Licences, via the requirement for an FMMCP.

ID*	Parameter/Commitment	Mitigation	Means of Implementation/ Corresponding Management Plan within the Application
			Volume 4, Appendix 28: Fisheries Mitigation, Monitoring and Communication Plan
49	Shipping and Navigation	Where appropriate, guard vessels will also be used to ensure adherence with Safety Zones or advisory passing distances to mitigate any impact which poses risk to surface navigation during construction, O&M and decommissioning phases. Such impacts may include partially installed structures or cables, extinguished navigation lights or other unmarked hazards.	Secured in the Section 36 Consent and Marine Licence
50	Shipping and Navigation	MGN 654 Annex 4 (MCA, 2021a) requires that hydrographic surveys will fulfil the requirements of the IHO Order 1a standard, with the final data supplied as a digital full density data set, and survey report to the MCA Hydrography Manager and the UKHO.	Secured in the Section 36 Consent and Marine Licence

*see Volume 3, Technical Appendix 4.6: Schedule of Mitigation and Commitments

References

International Association of Marine Aids to Navigation and Lighthouse Authorities (2021). IALA Guidance G1162 The Marking of Offshore Man-Made Structures, Edition 1.1. Available at: https://www.iala.int/product/g1162/ (Accessed: 09/09/2025).

International Maritime Organisation (1972). Convention on International Regulations for Preventing Collisions at Sea (COLREGs). Available at: https://www.imo.org/en/about/conventions/pages/colreg.aspx (Accessed: 11/09/2025).

International Maritime Organisation (1974). International Convention for the Safety of Life at Sea (SOLAS). Available at: https://www.imo.org/en/about/conventions/pages/international-convention-for-the-safety-of-life-at-sea-(solas),-1974.aspx (Accessed: 11/09/2025).

Maritime and Coastguard Agency (2021). MGN 654 (M+F) Offshore Renewable Energy Installations (OREI) Safety Response. Available at: https://www.gov.uk/government/publications/mgn-654-mf-offshore-renewable-energy-installations-orei-safety-response (Accessed: 09/09/2025).

Scottish Government (2020). Sectoral Marine Plan for Offshore Wind Energy, 78pp.