Muir Mhòr Offshore Wind Farm

Environmental Impact Assessment Report

Volume 4, Appendix 5: Outline Vessel Management and Navigation Safety Plan

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Contents

1. Introduction 9

1.1. Project Overview 9
1.2. Scope and Objectives 9
1.3. Links with other Consent Plans 10
1.4. Updates and Amendments to the VMNSP 10

2. Navigational Safety Measures during Construction 10

2.1. Temporary Lighting and Marking 10
2.2. Guard Vessels 10
2.3. Construction Safety Zones 11
2.4. Management of Buoyed Construction Area Including Safety Zones 11
2.5. Cable Laying and other RAM Operations 11
2.6. Emergency Response Cooperation Plan (ERCoP) 12
2.7. Injury, Destruction or Decay of the Proposed Development 12

3. Navigational Safety Measures during O&M 12

3.1. Introduction 12
3.2. Marine Coordination 12
3.3. Operation Lighting and Marking 12
3.4. Safety Zones during Operational Phase 12
3.5. RAM Operations 13
3.6. ERCoP and ERP 13
3.7. Injury, Destruction or Decay of the Proposed Development 13

4. Promulgation of Information 13

4.1. Introduction 13
4.2. Local Notifications to Mariners 13

LNtM issued Prior to the Commencement of Construction 14
LNtM upon Commissioning and During O&M 14
Post Commissioning 14

4.3. Admiralty Notices to Mariners 14
4.4. Hydrographic Charts 15
4.5. Kingfisher Bulletins and KIS-ORCA 15

Notifications Prior to the Commencement of Construction 15
Notifications During Construction 15
Notifications upon Commissioning and During O&M 15

4.6. Radio Navigational Warnings 16
4.7. UK Marine Reporting Requirements 16
4.8. Other Notifications 16

5. Location of Working Ports 17

5.1. Introduction 17
5.2. Construction Ports 17
5.3. O&M Ports 17
5.4. Other Operational Ports 17

6. Types and Specifications of Vessels 17

6.1. Introduction 17
6.2. Standards and Requirements 17
6.3. Construction Phase 18

Confidentiality: C2 - Internal

Floater Transportation 18
Floater Installation 19
OEP Jacket and Topside Installation 19
Inter-Array Cable Installation 19
Interconnector Cable Installation 20
Mooring and Anchoring System Installation 20
Export Cable Installation 21
Construction Support 21
6.4. O&M Phase 22
7. Numbers and Movements of Vessels 22
7.1. Construction Vessels 22
7.2. O&M Vessels 23
8. Indicative Transit Route Corridors 24
9. Anchoring 25
10. Environmental Sensitivities Relevant to Vessel Management 26
11. Compliance with MGN 654 26
12. Compliance with the Application 26
13. References 27

Figures

Figure 8-1 Indicative Transit Routes 24
Figure 9-1 Designated Anchorages in Proximity to the Proposed Development 25

Tables

Table 1-1 Consent Conditions Relevant to the VMNSP 9
Table 1-2 Linkages with Other Consent Plans 10
Table 4-1 Content of LNtM 14
Table 6-1 [Insert Vessel Type / Name] Key Details 18
Table 6-2 [Insert Vessel Type / Name] Key Details 19
Table 6-3 [Insert Vessel Type / Name] Key Details 19
Table 6-4 [Insert Vessel Type / Name] Key Details 20
Table 6-5 [Insert Vessel Type / Name] Key Details 20
Table 6-6 [Insert Vessel Type / Name] Key Details 20
Table 6-6 [Insert Vessel Type / Name] Key Details 21
Table 6-7 [Insert Vessel Type / Name] Key Details 21
Table 6-8 [Insert Name] (CTV) Key Details 22
Table 6-9 [Insert Name] (SOV) Key Details 22
Table 7-1 Construction Vessel Activities Summary 23

Confidentiality: C2 - Internal

Table 7-2 Operational Activities Summary 23
Table 9-1 Summary of Anchorage Areas in Proximity to the Proposed Development 25
Table 11-1 MGN 654 Checklist Elements Relevant to the VMNSP 26
Table 12-1 Compliance with the Proposed Development EIAR 26

Glossary

Term	Definition
Array Area	The area in which the generation infrastructure (including Wind Turbine Generators and associated foundations, and inter-array cables) and Offshore Electrical Platform(s) and an interconnector cable will be located.
Automatic Identification System (AIS)	A system by which vessels automatically broadcast their identity, key statistics including location, destination, length, speed, and current status, e.g., under power. Most commercial vessels and United Kingdom (UK)/European Union (EU) fishing vessels over 15 metre (m) length are required to carry AIS.
Developer	Muir Mhòr Offshore Wind Farm Limited
EIA Regulations	Collectively the term used to refer to The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, The Marine Works (Environmental Impact Assessment) Regulations 2007, and The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017.
Interconnector cable	Cable which links the Offshore Electrical Platforms to one another, allowing for power to be transferred between the platforms
Inter-array cable	Cables which link the Wind Turbines Generators to each other and the Offshore Electrical Platform(s).
Landfall	The area between Mean High Water Springs (MHWS) and Mean Low Water Springs (MLWS) where the offshore export cables are brought onshore.
Main Commercial Route	Defined transit route (mean position) of commercial vessels identified within each study area.
Marine Guidance Note (MGN)	A system of guidance notes issued by the Maritime and Coastguard Agency (MCA) which provide significant advice relating to the improvement of the safety of shipping at sea, and to prevent or minimise pollution from shipping.
Offshore Electrical Platform (OEP)	Offshore platform consisting of High Voltage Alternating Current (HVAC) equipment, details depending on the final electrical set up of the Project.
Offshore export cables	The subsea electricity cable circuits running from the Offshore Electrical Platform to the landfall which will transmit the electricity generated by the offshore wind farm to the onshore export cables for transmission onwards to the onshore substation and the national electrical transmission system along with auxiliary cables such as fibre optic cables.
Offshore transmission assets	The offshore export cables and Offshore Electrical Platforms (OEP).
Project	Muir Mhòr Offshore Wind Farm – comprises the wind farm and all associated offshore and onshore components.
Proposed Development	The offshore Muir Mhòr Offshore Wind Farm project elements to which this Vessel Management and Navigational Safety Plan relates.
Safety Zone	A statutory marine zone demarcated for the purposes of safety around a possibly hazardous installation or works/construction area.
Wind Turbine Generator (WTG)	The wind turbines that generate electricity consisting of tubular towers and blades attached to a nacelle housing mechanical and electrical generating equipment.

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Acronyms

Term	Definition
AIS	Automatic Identification System
AtoN	Aid to Navigation
COLREGs	Convention on International Regulations for Preventing Collisions at Sea
CTV	Crew Transfer Vessel
DWT	Deadweight Tonnage
EIAR	Environmental Impacts Assessment Report
ERCoP	Emergency Response Cooperation Plan
ERP	Emergency Response Plan
EU	European Union
HMCG	His Majesty's Coastguard
HVAC	High Voltage Alternating Current
IDP	Intermediate Delivery Port
IHO	International Hydrographic Organisation
IMO	International Maritime Organization
KIS-ORCA	Kingfisher Information Service – Offshore Renewables & Cable Awareness
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
LNtM	Local Notification to Mariners
MAIB	Marine Accident Investigation Branch
MCA	Maritime and Coastguard Agency
MD-LOT	Marine Directorate Licencing Operations Team
MF	Medium Frequency
MGN	Marine Guidance Note
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MRCC	Maritime Rescue Coordination Centre
NAVAREA	Navigation Area
Navtex	Navigational Telex
NLB	Northern Lighthouse Board
NSP	Navigation Safety Plan
NtM	Notifications to Mariners
O&M	Operation and Maintenance
OEP	Offshore Electrical Platform
OREI	Offshore Renewable Energy Installation
OWF	Offshore Wind Farm
RAM	Restricted in Ability to Manoeuvre
SOLAS	International Convention for the Safety of Life at Sea
SOV	Service Operation Vessel

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Term	Definition
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
VHF	Very High Frequency
VMNSP	VMP and NSP
VMP	Vessel Management Plan
WTG	Wind Turbine Generator

1. INTRODUCTION

1.1. PROJECT OVERVIEW

1.1.1. Muir Mhòr Offshore Wind Farm Limited (hereafter referred to as 'the Developer') is proposing to develop the Muir Mhòr Offshore Wind Farm (hereafter 'the Project'). The Project is made up of both offshore and onshore components. The subject of this Environmental Impact Assessment Report (EIAR) is the offshore infrastructure of the Project seaward of Mean High-Water Springs (MHWS) which is hereafter referred to as 'the Proposed Development'.

1.1.2. The Muir Mhòr array area covers an area of approximately 200 km^2 and is located approximately 63 km east of Peterhead on the east coast of Scotland. The offshore infrastructure of the Proposed Development includes Wind Turbine Generators (WTGs) and associated floating foundations, the Offshore Electrical Platform (OEP) and associated foundations, the inter-array cables, interconnector cable, offshore export cables and landfall.

1.1.3. The Vessel Management and Navigation Safety Plan (VMNSP) intends to discharge the offshore consent conditions relevant to the Vessel Management Plan (VMP) and Navigation Safety Plan (NSP). These will be detailed in Table 1-1 post consent, which includes reference to how and where the condition clauses have been addressed within the VMNSP.

Table 1-1 Consent Conditions Relevant to the VMNSP

Reference	Condition	Relevant Section
[Consent condition details to be added post consent]		

1.2. SCOPE AND OBJECTIVES

1.2.1. This VMNSP has been produced for the purposes of satisfying the relevant consent conditions which will be outlined in Table 1-1 post consent. This document applies to vessel management and navigational safety of the Proposed Development, in accordance with the relevant guidance, during construction and operation and maintenance (O&M).

1.2.2. This VMNSP has been produced for the purpose of providing the required information to Marine Directorate - Licensing Operations Team (MD-LOT) on vessel management and navigational safety during the construction, and O&M phases, in order to mitigate the impact of vessels associated with the Proposed Development and the navigational risk to other legitimate users of the sea.

1.2.3. The information provided in this document is based on the current understanding of the baseline environment and how the Proposed Development will be constructed and operated using the best available technologies, in compliance with current legislation and best practice at the time of writing.

1.2.4. The VMNSP will be reviewed as required and updated if necessary (see Section 1.4). Information contained within this document is accurate at the time of submission, but it is recognised that changes or updates may be required to reflect changes following consultation or changes in best practice.

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1.3. LINKS WITH OTHER CONSENT PLANS

1.3.1. This VMNSP forms one of a number of consent plans for which the approval from ~~Scottish Ministers~~ MD-LOT will be sought in compliance with the relevant consent conditions.

1.3.2. In order to reduce repetition between documents, where detailed information is not deemed fundamental to the understanding of the key objectives of this document, a summary of information may be provided with a reference to where more detailed information is provided in a separate document. Table 1-2 provides an overview of which consent documents are referenced within this document.

Table 1-2 Linkages with Other Consent Plans

Plan	Details Contained in Plan	Reference / Status
[Details of linked consent plans to be added post consent]		

1.4. UPDATES AND AMENDMENTS TO THE VMNSP

1.4.1. It is acknowledged that this document, once approved, may require updating from time to time. Factors that may influence the need for a review and/or update include:

- Significant change in methods or schedule outlines within this document;
- Significant changes in knowledge of baseline information or environment of relevance to the contents of this document;
- Significant changes in legislation or best practice guidance;
- Significant stage in project lifecycle (completion of construction etc.); and
- Scheduled reviews.

1.4.2. Where a significant change to vessel management as set out in the existing VMNSP is identified, this will be in the first instance be communicated to MD-LOT. Where MD-LOT advise that a change to the VMNSP is required this will be made and the VMNSP then re-submitted to MD-LOT for approval.

2. NAVIGATIONAL SAFETY MEASURES DURING CONSTRUCTION

2.1. TEMPORARY LIGHTING AND MARKING

2.1.1. The Lighting and Marking Plan (LMP) sets out the precise details of the lighting and marking of the Proposed Development (outline version submitted as part of EIAR (Volume 4, Appendix 29 (Outline Lighting and Marking Plan))).

2.2. GUARD VESSELS

2.2.1. Guard vessels may be required at the Proposed Development, at particular times, for example when vessels and assets are particularly vulnerable due to partially completed works or a particular construction activity. During these periods, the construction area will be monitored

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by guard vessel(s) to further protect the area and to provide additional information to third-party vessels.

2.2.2. The decision(s) on when to use a guard vessel will be informed by a risk assessment of the activities.

2.2.3. A guard vessel may also be required to monitor safety zones noting this will be further assessed as part of the safety zone application (see Section 2.3).

2.3. CONSTRUCTION SAFETY ZONES

2.3.1. Section 95 and Schedule 16 of the Energy Act 2004 set out the basic requirements for applying for a safety zone to be placed around or adjacent to an Offshore Renewable Energy Installation (OREI). The Electricity (Offshore Generating Substations) (Safety Zones) (Applications Procedures and Control of Access) Regulation 2007 clarify the requirements for applications which applies to territorial waters in or adjacent to Scotland and within the Renewable Energy Zone.

2.3.2. An application will be made to MD-LOT accompanied by a layout plan, a summary of the construction programme and construction method statement documents, and also the proposed methodology for notifying relevant stakeholders.

2.3.3. It is intended that the following safety zones will be applied for during construction and O&M:

- Rolling 500 m safety zones around structures during construction; and
- Pre commissioning 50 m safety zones around structures either partially completed or constructed but not yet commissioned.

2.4. MANAGEMENT OF BUOYED CONSTRUCTION AREA INCLUDING SAFETY ZONES

2.4.1. Section 7 presents the methods by which vessels associated with the Proposed Development will be managed within the buoyed construction area including safety zones.

2.5. CABLE LAYING AND OTHER RAM OPERATIONS

2.5.1. Restricted in ability to manoeuvre (RAM) vessels will be utilised during the cable installation works, heavy lifting operations, anchor/mooring installation and floater hook up activities. RAM vessels are those restricted in their ability to manoeuvre as a result of the nature of the work they are undertaking and therefore are restricted in avoiding an approaching vessel(s). All RAM vessels involved in the construction of the Proposed Development will comply with the Convention on International Regulations for Preventing Collisions at Sea (COLREGs) (International Maritime Organization (IMO), 1972/77). 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.

2.5.2. RAM vessels will display lights and shapes to indicate their restrictions. They will transmit safety warnings on Very High Frequency (VHF) to inform other vessels of their actions using the ‘Securité’ message if the messages contain important information relating to navigation. Communications between RAM vessels and the marine coordination centre will be ongoing throughout the operations.

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

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2.5.4. Relevant activities will also be promulgated through the notification procedure, and, if necessary, following internal risk assessment, guard vessels may be employed during the cable laying period.

2.6. EMERGENCY RESPONSE COOPERATION PLAN (ERCOP)

2.6.1. As required under Marine Guidance Note (MGN) 654 (Maritime and Coastguard Agency (MCA), 2021), the Developer will produce an Emergency Response Cooperation Plan (ERCoP) in liaison with the MCA post consent, noting that the construction phase ERCoP must be submitted to and approved by the MCA before offshore construction commences.

2.6.2. The Developer will also prepare an Emergency Response Plan (ERP) which will detail the emergency planning and response control measures to be implemented during the construction phase.

2.7. INJURY, DESTRUCTION OR DECAY OF THE PROPOSED DEVELOPMENT

2.7.1. The Developer will notify the Scottish Ministers, in writing, in the case of injury to, destruction, or decay of the Proposed Development during the construction phase. The Scottish Ministers will advise of any remedial action to be taken and any Aid to Navigation (AtoN) to be displayed following consultation from the MCA, Northern Lighthouse Board (NLB), or any such required advisors.

3. NAVIGATIONAL SAFETY MEASURES DURING O&M

3.1. INTRODUCTION

3.1.1. The proceeding sections set out the navigational safety measures to be implemented by the Developer during the O&M phase of the Proposed Development.

3.2. MARINE COORDINATION

3.2.1. [Specific detail of any marine coordination function to be added post consent]

3.3. OPERATION LIGHTING AND MARKING

3.3.1. The LMP will set out the precise details of the lighting and marking of the Proposed Development (outline version submitted as part of EIAR - Volume 4, Appendix 29 (Outline Lighting and Marking Plan)).

3.4. SAFETY ZONES DURING OPERATIONAL PHASE

3.4.1. [Details of safety zones that have been applied for or granted will be added post consent]

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3.5. RAM OPERATIONS

3.5.1. RAM vessels may be used during cable maintenance, heavy lift operations associated with the WTGs, disconnection/reconnection of floaters and towing of floating WTGs – these vessels will comply with COLREGs. These vessels will transmit safety warnings on VHF to inform other vessels of their actions, using the 'Securité' message if their message contains important information relevant to navigation.

3.5.2. Cable maintenance will be promulgated through the notification procedures (see Section 4) and, where necessary, guard vessels will be deployed during the cable maintenance period.

3.6. ERCOP AND ERP

3.6.1. The approved ERCoP for the construction phase (see Section 2.6) will be updated and amended for the O&M phase, noting that the MCA required Hub template (MCA, 2021b) will be used.

3.6.2. The Developer will also prepare a separate ERP which shall detail the required emergency planning and response control measures to be implemented across the construction and O&M phases of the Proposed Development by all Developer personnel and contractors.

3.7. INJURY, DESTRUCTION OR DECAY OF THE PROPOSED DEVELOPMENT

3.7.1. The Developer will notify the MD-LOT, in writing, in the case of injury to, destruction, or decay of the Proposed Development during O&M. The MD-LOT will advise of any remedial action to be taken and any AtoN to be displayed following consultation from the MCA, NLB, or any such required advisors.

4. PROMULGATION OF INFORMATION

4.1. INTRODUCTION

4.1.1. This section provides information of the proposed approach to distribution and issuing Notifications to Mariners (NtM) and other appropriate notifications to the relevant stakeholders and other marine users.

4.2. LOCAL NOTIFICATIONS TO MARINERS

4.2.1. Local Notification to Mariners (LNtM) will be issued in advance of any activity associated with the Proposed Development which may impact upon navigational safety. The Developer will issue LNtM to a list of relevant local and national stakeholders. The list will be regularly updated to ensure contact details remain up to date and all relevant parties are included.

4.2.2. The LNtM will be concise, detailing navigational safety information and may include, but not limited to, the information set out in Table 4.1. A standard template will be defined.

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Table 4-1 Content of LNtM

LNtM Aspect	Description
Title	Clearly state that the document is an LNtM and a short relevant title about the scope of the topic. This will include the date of issue and the notification number.
Supplementary Information	Details of the organisation and development issuing the LNtM and any relevant LNtM(s) issued prior to the current one.
Details	• Date / time of start / finish and location of the works (coordinates); • Vessels on site including call signs; • Activity being undertaken; and • Specific risk to navigation.
Contact Details	Sufficient details to allow mariners to contact the organisation issuing the LNtM including the marine coordination centre / 24-hour emergency contact.
Guard Vessel and Safety Zone Details	Details of any guard vessels or safety zones present and enforced.
Hyperlinks to additional information	Provide only if absolutely necessary.

4.2.3. Among the organisations that the LNtM will be issued to is the United Kingdom Hydrographic Office (UKHO). Upon receipt of a LNtM, the UKHO will decide whether to include information in their Weekly Admiralty NtM, as described in Section 4.3.

LNTM ISSUED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION

4.2.4. The Developer will, as soon as practicable prior to the commencement of any construction activities, ensure that local mariners, fishermen's organisations, and His Majesty's Coastguard (HMCG), in this case the Aberdeen Maritime Rescue Coordination Centre (MRCC), are made fully aware of the Licensable Marine Activity through LNtM (or any other appropriate means).

LNTM UPON COMMISSIONING AND DURING O&M

4.2.5. The Developer will ensure that local mariners, fisherman's organisations, and the MRCC are made fully aware of the completion of the construction works and commissioning of the Proposed Development.

4.2.6. The Developer will ensure that relevant stakeholders are informed via LNtM of any planned and unplanned maintenance activities that are outside the day-to-day maintenance activities associated with the Proposed Development.

POST COMMISSIONING

4.2.7. The Developer will, after the commissioning of the Proposed Development, provide the 'as built' positions and maximum heights of all WTGs, OEP(s), and any subsea infrastructure to the UKHO for aviation and nautical charting purposes.

4.3. ADMIRALTY NOTICES TO MARINERS

4.3.1. Admiralty NtMs are issued to the UKHO and are based on the information provided within LNtM. The UKHO issues these on a weekly basis to provide physical corrections to charts

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and associated publications. It is the responsibility of mariners to look up the Weekly Editions of Admiralty NtM which can be found on the UKHO website and to make necessary corrections to the charts on board their vessel.

4.4. HYDROGRAPHIC CHARTS

4.4.1. The precise locations and maximum heights of all WTGs and construction equipment over 150m above Lowest Astronomical Tide (LAT), and the details of any fixed lighting fitted to all WTGs, will be provided to the UKHO for aviation and nautical charting.

4.4.2. WTGs will be charted by the UKHO using the WTG tower or Muir Mhòr Offshore Wind Farm area chart symbol (as presented in Symbols and Abbreviations used on ADMIRALTY Paper Charts NP5011 (UKHO, 2020)) on charts deemed appropriate in terms of scale.

4.5. KINGFISHER BULLETINS AND KIS-ORCA

4.5.1. The Kingfisher Information Service – Offshore Renewables & Cable Awareness (KIS-ORCA) project is a joint initiative between Subsea Cables UK and Renewable UK and is managed by the Kingfisher Information Service of Seafish. Information is available in fortnightly bulletins (Kingfisher – Offshore and Marine Renewables) or downloadable from the KIS-ORCA website.

4.5.2. Notification to the Kingfisher fortnightly bulletin may include, for example, an overview of the Proposed Development, roles and responsibilities, method statements relevant to the scope of the work for which the notification is issued, offshore activity schedule, navigational safety procedures, advisory safety zones, and any relevant drawings or other project information.

4.5.3. The following subsections detail the KIS-ORCA notifications that will be promulgated for each phase of the Proposed Development.

NOTIFICATIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION

4.5.4. The Developer will ensure that details of the Proposed Development are promulgated in the Kingfisher fortnightly bulletins, as soon as reasonably practicable prior to the commencement of construction of the Proposed Development, to inform the fishing industry of vessels routes, timing and locations of construction works, and relevant details of the construction activities.

NOTIFICATIONS DURING CONSTRUCTION

4.5.5. The Developer, through the marine coordination centre, will ensure that the progress of construction of the Proposed Development is promulgated in the Kingfisher fortnightly bulletins to inform the fishing industry of the vessel routes, and timings and locations, and relevant details of the construction activities.

NOTIFICATIONS UPON COMMISSIONING AND DURING O&M

4.5.6. The Developer will ensure that the commissioning of the Proposed Development is promulgated to the Kingfisher fortnightly bulletin to inform the commercial fishing industry.

4.5.7. The Developer will ensure notices are issued to the Kingfisher fortnightly bulletin detailing any planned or unplanned maintenance activities that are outside the day-to-day maintenance carried out at the Proposed Development.

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4.6. RADIO NAVIGATIONAL WARNINGS

4.6.1. Radio navigational warnings may be issued if an activity or incident poses a danger to other marine users. Examples of when radio navigational warnings could be issued are:

- Failures to light signals, fog signals, buoys, or other AtoN;
- Establishing new AtoN;
- Cable laying activities, where a risk is posed to passing traffic;
- Other underwater operations that may constitute potential dangers in or near shipping lanes; and/or
- Vessels not under command or undertaking significant RAM operations.

4.6.2. Once details of an activity have been issued through the standard NtM process, the UKHO will then decide if the warning should be transmitted as a radio navigational warning. The UKHO will then issue the navigational warning.

4.6.3. In the context of radio navigational warnings, the UKHO act as the Navigation Area (NAVAREA) 1 (NE Atlantic) Coordinator of the IMO and International Hydrographic Organisation (IHO) Worldwide Navigational Warning Service and also as the United Kingdom (UK) Coordinator for issuing coastal navigational warnings. The MCA, however, is the overarching body responsible for broadcasting the warnings and is the organisation responsible for charging levies to broadcast them.

4.6.4. The broadcasts are under the control of the UKHO but tend be made as follows of:

- For vessels in NAVAREA 1, broadcasts are made through 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) twice a day as UK Coastal Navigational Warnings by appropriate Navtex stations at each transmission time (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.

4.7. UK MARINE REPORTING REQUIREMENTS

4.7.1. In addition, within UK waters, all vessels are required to report all incidents relating to navigational safety by the quickest means possible to the Marine Accident Investigation Branch (MAIB). The MAIB has a dedicated reporting line for all purposes (+44 (0)23 8023 2527), which is staffed 24 hours per day.

4.7.2. Information required shall include:

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

4.8. OTHER NOTIFICATIONS

4.8.1. The Developer will consult local Harbour Masters, where appropriate, who may wish to issue local warnings to those navigating in the vicinity of the Proposed Development.

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5. LOCATION OF WORKING PORTS

5.1. INTRODUCTION

5.1.1. Precise ports to be used during the construction phase are not yet determined. The following ports (in some cases referred to as Intermediate Delivery Ports (IDPs) are under consideration for use during the construction phase:

- [List of relevant ports to be added post consent]

5.2. CONSTRUCTION PORTS

5.2.1. [Details of each port and their involvement in the delivery/transport/storage of construction parts and their role throughout the construction phase will be added post consent]

5.3. O&M PORTS

5.3.1. [Details of the port expected to be used during O&M as a O&M base will be added post consent]

5.4. OTHER OPERATIONAL PORTS

5.4.1. In addition to the ports listed above, other ports may be used during the construction and O&M phases, with these likely to be local to the Proposed Development. Information regarding any other ports used will, if necessary, be promulgated via methods outlined in Section 4.

5.4.2. [Details will also be included post consent of any mentioned ports used in the facilitation of CTVs/GVs/small vessels etc. throughout the operational lifetime].

6. TYPES AND SPECIFICATIONS OF VESSELS

6.1. INTRODUCTION

6.1.1. This section outlines the types and specifications of vessels to be utilised during the construction phase (Section 6.3) and O&M phase (Section 6.4). Where known, specific vessels are presented and in other cases indicative vessels are presented. Where indicative vessel specifications are presented, these may vary depending on market availability.

6.2. STANDARDS AND REQUIREMENTS

6.2.1. Vessel crews must meet recognised standards and comply with the international maritime rules (as adopted by the relevant flag state) and regulations for their class and area of operation. The Developer will conduct independent vessel audits on construction vessels as necessary to check that they meet these standards and are appropriate for the purpose of their desired role(s).

6.2.2. Vessel crews will be required to meet the requirements for the size, type, and area of operation in line with Standards for Training, Certification and Watchkeeping as set out by the IMO, and any site specific requirements implemented by the Developer above the minimum standards outlined above.

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6.2.3. All vessels involved in the construction of the Proposed Development will be lit in accordance with the requirements of COLREGs (IMO, 1972/77). All construction vessels will be equipped with AIS receivers and transmitters.

6.2.4. The Developer will require all construction vessels to comply with the procedures set out in this document and any other relevant plan.

6.3. CONSTRUCTION PHASE

6.3.1. The following subsections will present examples of the vessel types that will be used during the construction works, specifically relating to:

- Floater transportation;
- Floater installation;
- OEP jacket and topside installation;
- Inter-array cable installation;
- Interconnector cable installation;
- Mooring and anchoring system installation;
- Export cable installation; and
- Construction support.

6.3.2. Placeholders are used in this outline plan given that at this stage it is not possible to determine particular vessels and specifications. Multiple vessel types may be required for each element of installation.

FLOATER TRANSPORTATION

VESSEL TYPE/NAME

6.3.3. The [Insert Vessel Type/ Name] will transport the floater from [Insert Port].

6.3.4. Key details of an indicative {Insert Vessel Type/ Name} are presented in Table 6-2.

Table 6-1 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	Deadweight Tonnage (DWT)	
Propulsion		
Mooring / Station keeping		

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FLOATER INSTALLATION

VESSEL TYPE/NAME

6.3.5. The [Insert Vessel Type/ Name] will install the floater once on-site.

6.3.6. Key details of an indicative {Insert Vessel Type/ Name} are presented in Table 6-2.

Table 6-2 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	Deadweight Tonnage (DWT)	
Propulsion		
Mooring / Station keeping		

OEP JACKET AND TOPSIDE INSTALLATION

VESSEL TYPE/NAME

6.3.7. The OEP jacket and topside will be installed by an [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will collect the OEP jacket and topside from [Insert Port}.

6.3.8. Key details of an indicative {Insert Vessel Type/ Name} are presented in Table 6-2.

Table 6-3 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	Deadweight Tonnage (DWT)	
Propulsion		
Mooring / Station keeping		

INTER-ARRAY CABLE INSTALLATION

VESSEL TYPE/NAME

6.3.9. The inter-array cables will be installed by an [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will collect the inter-array cables from [Insert Port].

6.3.10. Key details of an indicative [Insert Vessel Type/ Name] are presented in Table 6-4.

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Table 6-4 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
Propulsion		
Mooring / Station keeping		

INTERCONNECTOR CABLE INSTALLATION

VESSEL TYPE/NAME

6.3.11. The interconnector cables will be installed by an [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will collect the interconnector cables from [Insert Port].

6.3.12. Key details of an indicative [Insert Vessel Type/ Name] are presented in Table 6-5.

Table 6-5 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
Propulsion		
Mooring / Station keeping		

MOORING AND ANCHORING SYSTEM INSTALLATION

VESSEL TYPE/NAME

6.3.13. The mooring and anchoring systems will be installed by an [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will collect the mooring and anchoring systems from [Insert Port].

6.3.14. Key details of an indicative [Insert Vessel Type/ Name] are presented in Table 6-6.

Table 6-6 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	

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Propulsion	
Mooring / Station keeping	

EXPORT CABLE INSTALLATION

VESSEL TYPE/NAME

6.3.15. The export cables will be installed by an [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will collect the export cables from [Insert Port].

6.3.16. Key details of an indicative [Insert Vessel Type/ Name] are presented in Table 6-7.

Table 6-7 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
Propulsion		
Mooring / Station keeping		

CONSTRUCTION SUPPORT

VESSEL TYPE/NAME

6.3.17. The construction support vessel will be [Insert Vessel Type/ Name]. The [Insert Vessel Type/ Name] will operate from [Insert Port].

6.3.18. Key details of an indicative [Insert Vessel Type/ Name] are presented in Table 6-8.

Table 6-8 [Insert Vessel Type / Name] Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
Propulsion		
Mooring / Station keeping		

CREW TRANSFER VESSELS (CTV)

6.3.19. CTVs will be used during the construction phase to aid the transfer of equipment and personnel between shore and offshore works. Support will be provided to a number of activities including floater installation, inter-array cable installation, and OEP jacket and topside installation. Key details of an example CTV, the [Insert Name], are provided in Table 6-9.

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Table 6-9 [Insert Name] (CTV) Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
	Max. Speed	
Mooring / Station keeping		

SERVICE OPERATION VESSELS (SOV)

6.3.20. SOVs will be used during the construction phase to aid the transfer of equipment and personnel between shore and offshore works. Support will be provided to a number of activities including floater transportation, floater installation, inter-array cable installation, and OEP jacket and topside installation. Key details of an example SOV, the [Insert Name], are provided in Table 6-10.

Table 6-10 [Insert Name] (SOV) Key Details

Vessel Name		[Insert details]
Vessel Type		
Contact		
Vessel Role		
Key Characteristics	**Length**	
	Breadth	
	DWT	
	Max. Speed	
Mooring / Station keeping		

6.4. O&M PHASE

6.4.1. Similar vessels are likely to be required, at various times, to those described for construction in Section 6.3.

7. NUMBERS AND MOVEMENTS OF VESSELS

7.1. CONSTRUCTION VESSELS

7.1.1. The number of vessels within the boundaries of the Proposed Development at any one time will vary during the construction period, with peaks in vessel activity reflecting the timing of major installation works.

7.1.2. For each vessel type anticipated to be entering the boundaries of the Proposed Development, Table 7-1 presents the indicative number of vessels involved in construction, the main construction activities they will be involved in, and the anticipated number of return journeys (a transit to the boundary of the Proposed Development, and then back to port) they will make

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(if available). It should be noted that the number of transits given is a best estimate based on the available information at the time of writing, and the actual numbers may differ during the construction phase.

Table 7-1 Construction Vessel Activities Summary

Vessel Type	Anticipated Total Number	Key Construction Activities	Approximate Number of Return Journeys
[Details to be added post consent]			

7.2. O&M VESSELS

7.2.1. The number of vessels within the boundaries of the Proposed Development during the O&M phase at any one time will vary, with peaks in vessel activity reflecting the timing of major maintenance works. Consequently, it is not possible, at this time, to provide precise numbers of vessel movements during the O&M phase. Estimates based on current information are provided in Table 7-2.

Table 7-2 Operational Activities Summary

O&M Activities	Vessels Required	Trips to Port	Number of Annual Transits
[Details to be added post consent]			

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8. INDICATIVE TRANSIT ROUTE CORRIDORS

8.1.1. The indicative transit corridors for the major construction vessels between the Array Area and the relevant construction ports are presented in Figure 8-1.

[Figure to be added post consent showing indicative transit routes between port and Array Area]

Figure 8-1 Indicative Transit Routes

8.1.2. Note the indicative transit routes presented in Figure 8-1 are not intended to be prescriptive and are unlikely to be followed precisely by every vessel, however they are designed to give an indication to other users the areas within which they may expect to encounter major construction vessels.

8.1.3. All construction vessels shall passage plan as per the International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974). In addition, vessels may take alternatives from these indicative routes for a variety of reasons, at the discretion of the vessels' Master, including:

- Compliance with COLREGs as required;
- Prevailing weather, tidal, or sea state conditions;
- Navigational hazards as indicated on Admiralty Charts, or notified through NtM or other such sources;
- Vessels originating from or bound for a destination not indicated by the indicative transit routes;
- Instructions from the marine coordination centre or other responsible persons in charge of coordinating and managing construction vessel traffic; and
- Any other reason the Master of a vessel may deem relevant for the purpose of ensuring the safety of theirs or another vessel.

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9. ANCHORING

9.1.1. Figure 9-1 presents the locations of known anchorages in the vicinity of the Proposed Development based upon local Admiralty Charts. Details pertaining to the anchorage areas noted in the Pilot Book NP54 are provided in Table 9-1.

9.1.2. Anchoring is at the discretion of the vessel Master but can be in conjunction with the information provided by the marine coordination centre or port authorities, where relevant; however, standard marine practice requires that when a vessel proceeds to anchor, 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 area or other navigational features such as spoil grounds or subsea cables.

9.1.3. All vessels associated with the Proposed Development will take the above into consideration prior to anchoring as per standard marine practice. Construction and O&M vessels requiring anchorage within the Array Area will request permission to do so from the marine coordination centre.

[Figure to be added post consent showing designated anchorages at the time based on charts]

Figure 9-1 Designated Anchorages in Proximity to the Proposed Development

Table 9-1 Summary of Anchorage Areas in Proximity to the Proposed Development

Anchorage Number	Anchorage Name	Description
[Details to be added post consent]		

9.1.4. [Details of any prohibited anchoring areas in the vicinity of the Proposed Development will also be included here post consent]

10. ENVIRONMENTAL SENSITIVITIES RELEVANT TO VESSEL MANAGEMENT

10.1.1. [Details of any sensitivities relevant to vessel traffic associated with construction and O&M of the Proposed Development will be added here post consent, including in relation to marine mammal and bird sensitivities and in relation to the indicative vessel routes detailed in Section 0]

11. COMPLIANCE WITH MGN 654

11.1.1. The relevant consent condition requires the Developer to demonstrate that the VMNSP has adequately addressed all of the recommendations of the current MGN 654 (MCA, 2021a), and its annexes that may be appropriate to the Proposed Development, or any other relevant document which may supersede said guidance prior to approval of the VMNSP.

11.1.2. The requirements and where they have been addressed are set out in Table 11-1, following the structure of the MGN 654 Checklist.

Table 11-1 MGN 654 Checklist Elements Relevant to the VMNSP

MGN 654 Section	Checklist	Where Addressed
[To be completed post consent]		

12. COMPLIANCE WITH THE APPLICATION

12.1.1. In addition to the offshore consent conditions presented in Section 1.1 above, [insert relevant consent condition].

12.1.2. On this basis the relevant aspects and commitments of the Proposed Development EIAR are detailed in Table 12-1.

Table 12-1 Compliance with the Proposed Development EIAR

Source	Mitigation	Where Addressed
[To be added]		

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13. REFERENCES

IMO (1972/77). Convention on International Regulations for Preventing Collisions at Sea (COLREGs) – Annex 3. London: IMO.

IMO (1974). International Convention for the Safety of Life at Sea (SOLAS). London: IMO.

MCA (2021a). Marine Guidance Note (MGN) 654 Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response. Southampton: MCA.

MCA (2021b). Emergency Response Cooperation Plans (ERCoP):
Template for Construction, Operations and Decommissioning phases. Southampton: MCA.

UK Government (2007). Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007

UKHO (2020). Symbols and Abbreviations used on ADMIRALTY Paper Charts NP5011. Taunton: UKHO.

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