WEST OF ORKNEY WINDFARM

Offshore EIA Report, Volume 3, Outline Plan 4: Outline Navigational Safety and Vessel Management Plan

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West of Orkney Windfarm

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Document Role

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Revision Record

Revision Number	Revised Section	Description of Changes
2	Throughout	Addressing comments on revision 1.
3	Throughout	Finalisation of document.

Contents

Summary

This outline Navigational Safety and Vessel Management Plan (NSVMP) has been prepared by Offshore Wind Power Limited (OWPL), hereafter referred to as 'the Developer' to support the Offshore Environmental Impact Assessment (EIA) Report for the West of Orkney Windfarm offshore infrastructure (hereafter referred to as 'the offshore Project').

The purpose of this outline NSVMP provides information on vessel management and navigational safety for the construction and operations and maintenance stages of the offshore Project. The NSVMP will be finalised for approval by Scottish Ministers ahead of construction post-consent once the offshore Project design has been further refined, and in accordance with relevant Section 36 Consent and/or Marine Licence conditions. Following approval by the Scottish Minsters, the NSVMP will represent a 'live document' and will be revised as relevant to ensure the information is kept up to date, at intervals agreed with Scottish Ministers.

This outline NSVMP covers the following:

- Section 1 – Introduction;
- Section 2 - Project background;
- Section 3 – Consultation;
- Section 4 - Navigational safety measures;
- Section 5 - Promulgation of information;
- Section 6 - Management and coordination of vessels;
- Section 7 - Location of working ports;
- Section 8 - Vessel information and movements;
- Section 9 - Indicative transit route corridors;
- Section 10 – Anchoring;
- Section 11 - Compliance with MGN 654;
- Section 12 - Compliance with Application;
- Section 13 – References;
- Section 14 – Abbreviations;
- Section 15 – Glossary;
- Appendix A1 - Compliance with the Application; and
- Appendix A2 - Compliance with MGN 654.

All Developer personnel, Contractors and Subcontractors involved in the offshore Project must comply with the NSVMP.

The location of copies of the NSVMP is yet to be determined but will likely include:

- The West of Orkney Windfarm Office;
- All Site offices (including Contractors and Subcontractors); and
- All construction, operation and maintenance vessels.

1. Introduction

1.1 Purpose

The Outline Navigational Safety and Vessel Management Plan (NSVMP) has been prepared by Xodus Group (Xodus) and Anatec on behalf of Offshore Wind Power Limited (OWPL), to support the Offshore Environmental Impact Assessment (EIA) Report for the offshore elements of West of Orkney Windfarm hereafter referred to as 'the offshore Project'. As this is an outline document, it is subject to refinement and change and further information will be provided post-consent.

The information provided in this document is based on the current understanding of the baseline environment and how the offshore Project will be constructed and operated using the best available technologies, in compliance with current legislation and best practice at the time of writing. Information contained within this document is accurate at the time of submission and will be reviewed as required and updated if necessary.

1.2 Objectives

The NSVMP provides information on vessel management and navigational safety for the construction and operations and maintenance stages of the offshore Project. It provides the required information to the Marine Directorate – Licensing Operations Team (MD-LOT) on how potential risks and impacts to other marine users and navigational risks will be minimised and mitigated. The NSVMP is required as a condition of consent for the Section 36 Consent and Marine Licence and therefore will be submitted to MD-LOT for approval.

Decommissioning of the offshore Project will require a separate Marine Licence and therefore consideration of the vessel management and navigational safety will be undertaken at the time of decommissioning to support the Marine Licence application. Therefore, this NSVMP does not consider the decommissioning stage of the Offshore Project.

1.3 Consent compliance

The NSVMP fulfils the consent conditions for the preparation of a Navigational Safety Plan and a Vessel Management Plan as outlined in Table 1-1. The NSVMP has been produced as one document as these topics have direct relevance to each other. Details of where in this document specific requirements of the consent conditions are addressed are also provided in Table 1-1.

Table 1-1 Consent conditions relevant to the NSVMP

Consent reference	Condition	Relevant section
[To be added post-consent]		

1.4 Relevant other documents and plans

This NSVMP details the proposed navigational safety measures and vessel management measures for the offshore Project. It will form part of a set of approved documents (which includes other consent plans required under the offshore consents) that provides the framework for the construction and operations and maintenance stages of the offshore Project.

The links between this NSVMP and other consent plans specifically listed in the offshore consent conditions are detailed in Table 1-2 below.

Table 1-2 Links with other consent plans

Other Consent Plan / Document	Linkage with NSVMP
[To be added post-consent]	

1.5 Structure of the plan

The structure of this document is as follows:

- Section 1 – Introduction;
- Section 2 - Project background;
- Section 3 – Consultation;
- Section 4 - Navigational safety measures;
- Section 5 - Promulgation of information;
- Section 6 - Management and coordination of vessels;
- Section 7 - Location of working ports;
- Section 8 - Vessel information and movements;
- Section 9 - Indicative transit route corridors;
- Section 10 – Anchoring;
- Section 11 - Compliance with MGN 654;
- Section 12 - Compliance with Application;
- Section 13 – References;
- Section 14 – Abbreviations;
- Section 15 – Glossary;
- Appendix A1 - Compliance with the Application; and
- Appendix A2 - Compliance with MGN 654.

1.6 Location of the plan

Details on where copies of the plan are located will be included within the final NSVMP. At this stage, it is envisaged that copies will be located at:

- The West of Orkney Windfarm Office;
- All Site offices (including Contractors and Subcontractors); and
- All construction, operation and maintenance vessels.

1.7 Document control

It is acknowledged that there may be a requirement for the NSVMP to be revised and updated on occasion throughout each stage of the offshore Project (construction, operation and maintenance), to ensure the information is kept up to date. Any revisions will be submitted to MD-LOT. In general, as approved documents and plans are updated, there will be a review of inter-linkages with other consent plans to ensure these are also updated as relevant. The Developer has ultimate responsibility for ensuring that Health, Safety and Environment (HSE) related documents are revised in accordance with the relevant timescales.

2. Project background

The Developer is proposing the development of the West of Orkney Windfarm ('the Project'), an Offshore Windfarm (OWF), located at least 23 kilometres (km) from the north coast of Scotland and 28 km from the west coast of Hoy, Orkney.

The offshore Project (the subject of this document) will comprise of Wind Turbine Generators (WTGs) and all infrastructure required to transmit the power generated by the WTGs to shore. The key offshore components of the offshore Project will include:

- Up to 125 WTGs with fixed-bottom foundations (monopile, piled jacket or suction bucket jacket);
- Up to five High Voltage Alternating Current (HVAC) Offshore Substation Platform (OSPs) (piled jacket or suction bucket jacket);
- Up to 500 km of inter-array cables;
- Up to 150 km of interconnector cables; and
- Up to five offshore export cables to landfalls at Greeny Geo and/or Crosskirk at Caithness, with a total length of up to 320 km (average of 64 km per offshore export cable).

The offshore Project boundary (Figure 2-1) includes the array area and the offshore Export Cable Corridor (ECC). Therefore, the offshore Project boundary encompasses:

- OAA – where the WTGs and associated foundations and supporting structures, inter-array cables, interconnector cables, the OSPs (including offshore export cable connections) will be located;
- Offshore ECC – within which the offshore export cables will be located; and
- Landfall (up to mean high water springs (MHWS)) – where the offshore export cables come ashore and interface with the onshore Project.

[Section to be updated post-consent with final details of offshore Project]

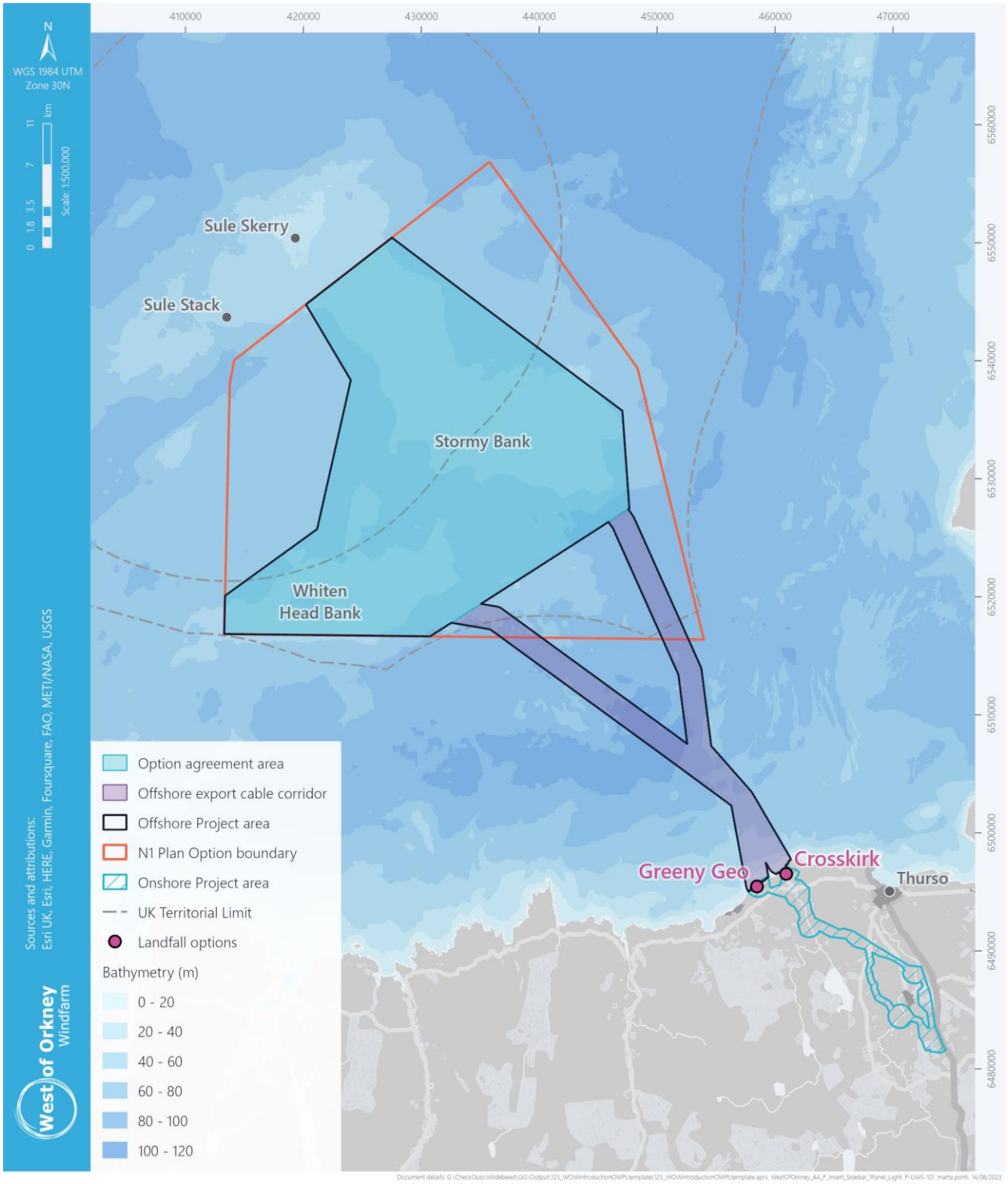

Figure 2-1 Offshore Project boundary

3. Consultation

Details of the consultation that will be held to inform the NSVMP will be described in this section post-consent.

4. Navigational safety measures

4.1 Construction

4.1.1 Temporary lighting and marking

Marine and aviation marking, including lights, visual marks and construction buoyage will be provided in accordance with the Northern Lighthouse Board (NLB), Maritime and Coastguard Agency (MCA) and Ministry of Defence (MoD) requirements. The Lighting and Marking Plan (LMP)[1] sets out the precise details that will be implemented during the construction stage of the offshore Project. Marking and lighting of the site will be conducted in agreement with NLB and in line with IALA Guideline G1162 (IALA, 2021 (a) and Recommendation O-139 (IALA, 2021 (b)).

[Details of statutory sanction will be noted here post-consent]

4.1.2 Safety zones

Section 95 and Schedule 16 of the Energy Act 2004 and the Electricity (Offshore Generating Stations) (Safety Zones) (Applications Procedures and Control of Access) Regulation 2007 set out the requirements for applying for a statutory safety zone to be placed around or adjacent to an Offshore Renewable Energy Installation (OREI). 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. The application will provide a safety case for the safety zones being sought and an assessment of the potential risks to shipping and navigation identified due to the presence of safety zones.

An application for statutory safety zones of 500 m will be sought during the construction stage around structures where construction activity is underway and while Restricted in Ability to Manoeuvre (RAM) vessels are present (i.e. where a construction vessel is present). The statutory safety zones will be implemented on a 'rolling' basis, meaning that the 500 m statutory safety zones will be phased throughout the OAA. The safety zones will be reduced to 50 m around any WTG or OSP where construction work is not underway, and around any completed structure prior to commissioning. Minimum advisory safe passing distances, as defined by a risk assessment, may also be applied where safety zones do not apply (e.g., around cable installation vessels), referred to as advisory safety zones.

Advanced warning and details of both statutory safety zones and any minimum advisory safe passing distances (advisory safety zones) will be provided by Notice to Mariners and Kingfisher Bulletins.

The status and location of active or planned safety zones will be promulgated on a regular basis throughout the construction period (see Section 5). As per the guidance set out in Marine Guidance Note (MGN) 654 (MCA, 2021), the Developer will monitor the safety zones for infringements, with the monitoring procedure set out in the safety zone application. Infringements will be notified to Marine Scotland and the MCA with any supporting evidence.

4.1.3 Guard vessels

Guard vessels may be utilised for the offshore Project where appropriate, for example when vessels are particularly vulnerable due to partially completed works. During these periods, the construction area will be monitored by guard vessels to protect the area and to provide additional information to third-party vessels. The decision on when to use a guard vessel will be informed by a risk assessment of the activities. A guard vessel may also be utilised to monitor safety zones noting this will be further assessed as part of the safety zone application.

4.1.4 Radio and radar beacons

A radio beacon is a transmitter positioned at a known location which transmits a continuous or periodic radio signal on a specified radio frequency. A radar beacon returns a distinctive signal when triggered by radar. Both types of beacons would transmit their identification or location as a form of navigational aid. The Developer will ensure no radio or radar beacon operating in the marine frequency bands are installed or used within the offshore Project area without prior approval from the Office of Communications (OfCom).

[1] An outline LMP has been submitted as part of the consent applications as Outline Plan (OP) 6: Outline Lighting and Marking Plan.

4.1.5 RAM Operations

RAM vessels (restricted in their ability to manoeuvre) will be utilised during the cable installation works and heavy lifting operations associated with the offshore Project. RAM vessels involved in the construction of the offshore Project (as with all vessels) 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.

RAM vessels will display lights and shapes to indicate their restrictions. These vessels will transmit safety warnings on Very High Frequency (VHF) to inform other vessels of their actions, using the "Securité" message, if the message contains important information relevant to navigation. 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. Vessels will also be monitored by the Marine Coordinator (see Section 6). As per Section 4.1.2, safety zones will be in place during the construction stage around structures where construction activity is underway and while RAM vessels are present.

Cable Laying Vessels (CLVs) and any Emergency Response Rescue Vessels (ERRVs) will be equipped with AIS and an Automatic Radar Plotting Aid (ARPA). Cable laying activities will be promulgated through the notification procedures and, if necessary, guard vessels will be utilised. As per Section 4.1.2, minimum advisory safe passing distances will be in place/utilised as required.

4.1.6 ERCoP

As required under MGN 654 (MCA, 2021), the Developer will produce an Emergency Response Cooperation Plan (ERCoP) in liaison with the MCA, which will be updated as required in line with any relevant changes. The Developer will also prepare a separate Emergency Response Plan (ERP) which details the required emergency planning and response control measures to be implemented across the construction stage of the offshore Project by all project personnel and contractors.

4.1.7 Injury, destruction, or decay of the offshore Project

The Developer will notify the MD-LOT, in writing, in the case of injury to, destruction, or decay of the offshore Project during the construction stage. MD-LOT will advise of any remedial action to be taken and any Aids to Navigation (AtoN) to be displayed following consultation from the MCA, NLB, or any such required advisors.

4.2 Operation and maintenance

4.2.1 Operational lighting and marking

The LMP will set out the precise details of the lighting and marking of the offshore Project (see OP6: Outline Lighting and Marking Plan). Marking and lighting of the site will be conducted in agreement with NLB and in line with MCA, NLB, CAA and MoD requirements.

[Details of statutory sanction will be noted here post-consent]

4.2.2 Maintenance safety zones

The Developer is not intending to utilise operational safety zones during normal operations. During times of major maintenance works, a temporary 500 m statutory safety zone may be applied for under the Electricity (Offshore Generating Stations) (Safety Zones) (Application Procedures and Control of Access) Regulations 2007. Minimum advisory safe passing distances, as defined by a risk assessment, may also be applied where safety zones do not apply (advisory safety zones).

[Details of any safety zones during operation to be added post-consent (for major maintenance only)].

4.2.3 Guard vessels

Guard vessels may be utilised for the offshore Project where considered appropriate, for example during periods of major maintenance. During these periods, the maintenance area will be monitored by guard vessel(s) to further protect the area and to provide additional information to third-party vessels. The decision/s on when to use a guard vessel will be informed by a risk assessment of the activities.

4.2.4 Radio and radar beacons

As per construction, the Developer will ensure no radio or radar beacon operating in the marine frequency bands are installed or used within the offshore Project area without prior approval from the OfCom.

4.2.5 RAM operations

RAM vessels may be used during cable maintenance, and heavy lift operations – 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. Vessels will also be monitored by the Marine Coordinator (see Section 6). Cable maintenance will be promulgated through the notification procedures and, where required, guard vessels will be utilised during the cable maintenance period. As per Section 4.2.2, safety zones and minimum advisory safe passing distances will be applied as required.

4.2.6 Cable inspections

Post-installation, an assessment will identify areas of cable at potential risk of exposure in the future A monitoring programme will be developed through a risk-based approach and will be described in the Cable Plan (CaP). Concerns noted by other sea users or via inspections in relation to cable burial will be promulgated via the methods set out in Section 6. The MCA and NLB will be informed of any significant changes in burial depth or cable protection.

4.2.7 Hydrographic surveys

In line with the requirements of MGN 654 (see A2), post-installation hydrographic surveys will be completed. On completion of all these surveys the data and corresponding report of survey will be supplied to the MCA hydrography manager for review. Once approved, it will subsequently be supplied to the United Kingdom Hydrographic Office (UKHO), with notification to MD-LOT provided.

4.2.8 ERCoP and ERP

The approved ERCoP for the construction stage (Section 4.1.6) will be updated and amended for the operation and maintenance stage. The ERP will also be updated and amended as required.

4.2.9 Injury, Destruction, or Decay of the offshore Project

The Developer will notify the MD-LOT, in writing, in the case of injury to, destruction, or decay of the offshore Project during operations and maintenance. The MD-LOT will advise of any remedial action to be taken and any AtoN to be displayed following consultation with the MCA, NLB, and any such required advisors.

5. Promulgation of information

This section provides information on the proposed approach to distribution and issuing of Weekly Notice of Operations (WNoO), Notice to Mariners (NtM) and other appropriate notifications to the relevant stakeholders and other marine users.

5.1.1 Weekly Notice of Operations (WNoO)

During the construction stage, the Developer will issue a WNoO to a list of relevant local and national stakeholders. This list will be regularly updated to ensure contact details are up to date and all relevant parties are included. The WNoO will also be available online at [website address to be added post-consent].

Each WNoO will provide detailed relevant construction information which may include:

- Ongoing activities including status;
- Planned activities for the upcoming week;
- Completed activities;
- Status of structures (e.g., installed, partially installed);
- Status of AtoNs;
- Vessels currently on site;
- Additional vessels anticipated to arrive on site (if applicable);
- Details of safety zones (if applicable);
- Relevant project contact details (including the Marine Coordinator and Fisheries Liaison Officer(s) (FLOs)); and
- Use of guard vessels (where applicable).

5.1.2 Local Notices to Mariners (LNtM)

Local Notices to Mariners (LNtM) will be issued to relevant local and national stakeholders in advance of any activity associated with the offshore Project which may impact navigational safety. The LNtM will be succinct, detailing navigational safety information, including but not limited to:

- Title and description of the topic including the date of issue and notice number;
- Supplementary Information: Details of the organisation and development issuing the LNtM and any previously issued relevant LNtMs;
- Details: date and time of start and finish and location of the works (coordinates), vessels on site including call signs, activity being undertaken, specific risks to navigation;
- Contact Details: sufficient information 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; and
- Hyperlinks to additional information (if necessary).

A standard template will be defined which allows concise presentation of the necessary details. Upon receipt of any LNtM, the UKHO will decide whether to include information in their Weekly Admiralty NtM, as described in Section 5.1.3. The notice issued at the different stages of the Project are outlined in Table 5-1.

Table 5-1 LNtM process

Notification	Overview
LNtM issued prior to the commencement of construction	Prior to the commencement of any construction activities, the Developer will ensure that local mariners, fishermen's organisations, and His Majesty's Coastguard (HMCG), and any Maritime Rescue Co-ordination Centres (MRCC),

Notification	Overview
	are made fully aware of the Licensable Marine Activity through LNtM (or any other appropriate means).
LNtM issued during construction	During construction, the Marine Coordinator (MC) will notify the UKHO and relevant stakeholders in advance of any notifiable activities, including anything that poses a risk to navigational safety, (e.g., any fault to navigational aids), as well as ensure the MCA are aware of what vessels are on site (and how to contact them).
LNtM upon commissioning and during operation and maintenance	The Developer will ensure that all relevant organisations and stakeholders are made fully aware of the completion of the construction works and commissioning of the offshore Project. The Developer will ensure that relevant stakeholders are informed via LNtM of any maintenance activities (planned and unplanned) that are outside the day-to-day maintenance activities associated with the offshore Project.
Post commissioning	Following commissioning of the offshore Project, the Developer will provide the 'as built' positions and maximum heights of all wind turbines, offshore substation platforms, and any subsea infrastructure to the UKHO for aviation and nautical charting purposes.

5.1.3 Admiralty Notices to Mariners

Admiralty NtMs are issued to the UKHO (and other stakeholders) by the Developer and are based on the information provided within LNtM. The UKHO then issues these on a weekly basis to provide physical corrections to charts and associated publications. It is the responsibility of mariners to look up the Weekly Editions of Admiralty NtM, found on the UKHO website, and to make necessary corrections to the charts on board their vessel.

5.1.4 Hydrographic charts

The precise locations and maximum heights of all wind turbines and construction, and the details of any fixed lighting fitted to all wind turbines, will be provided to the UKHO for aviation and nautical charting. Wind turbines will be charted by the UKHO using the wind turbine tower or project area chart symbol on charts appropriate in terms of scale.

5.1.5 Kingfisher bulletins and KIS-ORCA

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. The aim of the KIS-ORCA project is to provide accurate, up to date and free information relating to subsea cables and offshore renewable energy structures across Europe. Table 5-2 details the KIS-ORCA notifications that will be promulgated for each stage of the offshore Project.

Table 5-2 KIS-ORCA notification process

Notification	Overview
Notifications Prior to the Commencement of Construction	Details of the offshore Project are promulgated in the Kingfisher bulletins, as soon as reasonably practicable prior to the commencement of construction to notify the fishing industry of vessels routes, timing and locations of construction works, and relevant details of the construction works.
Notifications During Construction	Through the marine coordination centre, the progress of construction of the offshore Project is promulgated in the Kingfisher fortnightly bulletins (in addition to the WNoO (Section 5.1.1) to inform the commercial fishing industry of the vessel routes, timings and locations of construction works, and relevant details of the construction activities.
Notifications upon Commissioning and during Operations and Maintenance	The completion of the construction works is promulgated to the Kingfisher bulletin to inform the commercial fishing industry. The Developer will also ensure notices are issued to the Kingfisher bulletin detailing any maintenance (planned or unplanned) activities that are outside the day-to-day maintenance carried out at the offshore Project.

5.1.6 Radio navigational warnings

Radio Navigational Warnings may be issued if an activity or incident poses a danger to other marine users (e.g. failures to light signals, establishing major new aid to navigation or cable laying activities).

Once the details of an activity on site are promulgated via the standard LNtM process, the UKHO will decide if the warning should be transmitted as a Radio Navigational Warning. If deemed appropriate, the UKHO will issue the navigational warning. The MCA is the overarching body responsible for broadcasting the warnings and are the organisation responsible for charging to broadcast them.

The Developer will ensure that no radio beacon or radar beacon operating in the Marine frequency bands are installed or used during the construction and operations and maintenance of the offshore Project without the prior written approval of the OfCom.

5.1.7 UK marine reporting requirements

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 and accident report forms will be completed. Information will include details of the incident, details of the vessel(s) involved, and details of personnel involved.

5.1.8 Other notifications

Where appropriate, the Developer will consult local harbour Masters, where appropriate, who may wish to issue local warnings to those navigating in the vicinity of the offshore Project. The Developer will promulgate targeted information to local fishing organisations and recreational sailing clubs as well as local ports and harbours (including via the WNoO).

6. Management and coordination of vessels

All marine operations and vessel movements will be planned giving due regard to the requirements of the NSVMP. A Marine Coordinator will be in place across both the construction and operation and maintenance stage of the offshore Project and will be responsible for the management of coordination of vessels.

During the construction stage, the following measures of relevance will be in place:

- Permission for construction vessels to enter the construction area and safety zones will be managed by the MC, for example using a Permit to Work system;
- Liaison with vessels with regards to agreed routeing destinations/berths/anchorages (where applicable);
- 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, no-go locations etc;
- Provision of localised weather information for vessels working on the offshore Project to plan the work being undertaken;
- Coordination with Space Hub Sutherland as required;
- The Marine Coordinator will be the central contact point for contractors in case of an emergency. They will maintain a copy of the offshore Project ERCoP; and
- Issue of NtMs received from contractors after being reviewed and approved by the Developer.

Bunkering may be required during the construction stage and the operational and maintenance stage within the offshore Project boundary. Details will be provided as part of the monthly Ecological Clerk of Works (ECoW) reporting, as per the template provided within the Marine Pollution Contingency Plan (MPCP) within the Environmental Management Plan (EMP) (see OP1: Outline Environmental Management Plan).

Similar provisions as those listed above are relevant for the operations stage of the offshore Project. Vessel coordination will be established via the Marine Coordinator throughout the operational stage. Further information on marine coordination during the operational stage will be provided, for approval, in the Operation and Maintenance Programme (OMP).

7. Location of working ports

7.1 Construction ports

[Details of each port and their role in the offshore Project including the delivery/transport/storage of construction parts to be added here post-consent].

7.2 Operation and maintenance ports

[Details of the port anticipated to be utilised during operation and maintenance as a base to be added here post-consent].

7.3 Other port options

In addition to the ports listed above, other ports may be used during the construction and operation and maintenance stages. [Details of the vessels utilising these additional ports and port locations to be added here post-consent].

Where necessary methods described in Section 5 will be used to promulgate any information regarding other ports. [Details of any mentioned ports used in the facilitation of Crew Transfer Vessels (CTVs)/guard vessels/small vessels etc. throughout the offshore Project to be added here post-consent].

8. Vessel information and movements

8.1 Vessel types and specifications

The Developer will notify the Scottish Ministers of the final vessel list prior to the commencement of construction or operation and maintenance works.

[Further information to be provided post-consent when the information is known].

8.2 Standards and specifications

The Developer will require all vessels to comply with the procedures set out in this document and any other relevant plans. Vessel crews will be required to 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 vessels (as necessary) to check that they meet these standards and are appropriate for purpose.

Vessel crews must meet the requirements for the size, type, and area of operation in line with the IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), and any site specific requirements implemented by the Developer above the minimum standards. All vessels involved in the offshore Project (across all stages) will be lit in accordance with the requirements of COLREGs (IMO, 1972/77). All vessels will be equipped with AIS receivers and transmitters.

[The use of any autonomous vessels will be discussed with the MCA when details are known post-consent]

8.3 Construction stage

The following sections present examples of the vessel types that will be used during the construction works, including:

- Seabed preparation activities;
- Pile installation;
- WTG and OSP foundation installation (and associated scour protection);
- WTG installation;
- OSP topside installation;
- Inter-array and interconnector cable installation (and associated cable protection);
- Offshore export cable installation (and associated cable protection); and
- Additional construction support (e.g. CTVs, Service Operation Vessel (SOVs), etc).

8.3.1 UXO survey and clearance

[Vessel type/name to be confirmed post-consent]

The requirements for Unexploded Ordnance (UXO) clearance fall under a separate Marine Licence; however, an overview of the vessels is provided here for information only. A survey will be carried out to identify UXO targets on the seabed. Where potential UXO items cannot be avoided, they will be individually inspected by Remotely Operated Vehicle (ROV) and, if confirmed to be a UXO, will be removed or disposed. Key details of an indicative [Vessel Type/ Name] are presented in Table 8-1.

Table 8-1 UXO survey and clearance vessel key details

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.2 Seabed preparation activities

[Vessel type/name to be confirmed post-consent]

Prior to the commencement of construction, a series of seabed preparatory works will be carried out to facilitate the successful installation of the construction components.

Key details of an indicative [Vessel Type/ Name] are presented in Table 8-2.

Table 8-2 Seabed preparation vessel key details

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.3 Pile installation

[Vessel type/name to be confirmed post-consent]

Key details of an indicative [Vessel Type/ Name] are presented in Table 8-3.

Table 8-3 Installation vessel key details

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.4 WTG and OSP foundation installation

[Vessel type/name to be confirmed post-consent]

Key details of an indicative [Vessel Type/ Name] are presented in Table 8-4.

Table 8-4 WTG and OSP foundation installation

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.5 OSP topside installation

[Vessel type/name to be confirmed post-consent]

Key details of an indicative [Vessel Type/ Name] are presented in Table 8-5.

Table 8-5 OSP topside installation

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.6 Inter-array and interconnector cable installation

[Vessel type/name to be confirmed post-consent]

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

Table 8-6 Inter-array and interconnector installation

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.7 Offshore export cable installation

[Vessel type/name to be confirmed post-consent]

Key details of an indicative [Vessel Type/ Name] are presented in Table 8-7.

Table 8-7 Offshore export cable installation

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.8 Construction support vessels

A variety of support vessels may be utilised including anchor handling tugs, general work boats, tender boats, CTV and Service Operations Vessels. The below information will be provided for each category of vessel as required.

[Vessel type/name to be confirmed post-consent]

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

Table 8-8 Construction support vessels

Parameter	Value
Vessel role	
Vessel type	
Contact	
Vessel characteristics	
Propulsion	
Mooring / station keeping	

8.3.9 Guard vessels

It is anticipated that guard vessels may be utilised during the construction stage of the offshore Project, where appropriate. The number of guard vessels and their work class may vary throughout construction depending upon the location and type of construction activity. The decision on when to use a guard vessel will be informed by a risk assessment of the activities.

8.4 Operational stage

Similar vessels are likely to be required, at various times, to those described for construction in Section 8.3.

[Any deviations or additional information will be added here post-consent].

8.5 Vessel numbers and movements

8.5.1 Construction vessels

The number of vessels within the offshore Project area at any one time will vary throughout the construction stage. Peak vessel numbers will coincide with times of major installation works.

Table 8-9 presents the indicative numbers and their main construction activities for each of the anticipated vessels to be entering the offshore Project during the construction stage. Details are also provided on the expected number of return trips for each vessel type (a transit to the offshore Project and then back to port) they will make (where available). The number of transits provided is a best estimate based on the available information at the time of writing, the actual numbers may differ during the construction stage.

Table 8-9 Indicative construction vessel numbers, ley construction activities and return journeys

Vessel type	Anticipated total number	Vessel specifications	Key construction activities	Approximate number of return journeys
[To be added post-consent]				

8.5.2 Operation and maintenance vessels

The number of vessels within the offshore Project at any one time will vary during the operation and maintenance stage, 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 operation and maintenance stage. Indicative vessel numbers are provided in Table 8-10.

Table 8-10 Indicative operations and maintenance vessel numbers, key construction activities and return journeys

Vessel type	Anticipated total number	Vessel specifications	Key Operation and Maintenance activities	Approximate number of return journeys
[To be added post-consent]				

9. Indicative transit route corridors

Indicative transit corridors in line with the relevant conditions of the offshore consents are presented in Figure 9-1. Requirements for offshore Project vessels to comply with COLREGS (IMO, 1972) is the key navigational priority at all times. The indicative transit routes presented are not prescriptive and are unlikely to be followed precisely by every vessel, however they do provide an indication to other sea users utilising the area within which they may expect to encounter additional vessels associated with the offshore Project. All vessels shall passage plan as per the International Regulations 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 (e.g. prevailing weather, tidal or sea state, compliance with COLREGs or navigational hazards).

[Hold - For insertion of figure post-consent]

Figure 9-1 Indicative transit corridors [this figure will be provided post-consent]

10. Anchoring

Details regarding the anchorage areas noted in the North Coast of Scotland Pilot (NP52) are provided in Table 10-1. 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 areas or other navigational features such as spoil grounds or subsea cables.

Table 10-1 Summary of Anchorage Areas noted in the North Coast of Scotland Pilot [NP52] in proximity to the offshore Project

Anchorage number	Anchorage name	Description
[To be added post-consent]		

11. Compliance with MGN 654

[Consent conditions] require the Developer to demonstrate that the NSVMP has adequately addressed all of the recommendations of MGN 654 (MCA, 2021) and its annexes, that may be appropriate to the offshore Project, or any other relevant document which may supersede said guidance prior to approval of the NSVMP.

MGN 654 has been reviewed and all appropriate recommendations (at this pre-construction stage of the offshore Project) have been identified. In each case it has been indicated where each of these recommendations has been addressed within this document (or other relevant consent plans) for the offshore Project. The review summary is provided in Appendix A2.

12. Compliance with the Application

In addition to the offshore consent conditions presented in Table 1-1, the below consent conditions have also been considered [relevant consent condition to be added post-consent].

On this basis the relevant aspects and commitments of the offshore Project application are detailed in Appendix A, and how they have been met.

13. References

IALA (2021a). G1162 the marking of offshore man-made structures. Available online at: https://www.iala-aism.org/product/g1162/ [Accessed 31/08/2023].

IALA (2021b). R0139 the marking of offshore manmade structures, Available online at: https://www.iala-aism.org/product/r0139/ [Accessed 31/08/2023].

IMO, 1972, COLREGS.IMO: London.

IMO, 1974, SOLAS. IMO: London.

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

UKHO, 2020, NP5011 - Symbols and Abbreviations used in Admiralty Charts. Somerset: UKHO.

UKHO, 2022, NP52 North Coast of Scotland Admiralty Sailing Directions. Somerset: UKHO.

14. Abbreviations

Acronym	Definition
AIS	Automatic Identification System
ARPA	Automatic Radar Plotting Aid
AtoN	Aid to Navigation
CaP	Cable Plan
CLV	Cable Laying Vessel
COLREGs	International Regulations for the Prevention of Collisions at Sea
CTV	Crew Transfer Vessel
ECC	Export Cable Corridor
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
ERCoP	Emergency Response Cooperation Plan
ERP	Emergency Response Plan
ERRV	Emergency Response Rescue Vessel
EMP	Environmental Management Plan
FLO	Fisheries Liaison Officer
HMCG	His Majesty's Coastguard
HSE	Health, Safety and Environment
HVAC	High Voltage Alternative Current
IMO	International Maritime Organization
KIS-ORCA	Kingfisher Information Service – Offshore Renewable & Cable Awareness
km	kilometre
LMP	Lighting and Marking Plan
LNtM	Local Notices to Mariners
m	Metre
MAIB	Marine Accident Investigation Branch
MC	Marine Coordinator
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note
MoD	Ministry of Defence

Acronym	Definition
MRCC	Maritime Rescue Coordination Centre
MD-LOT	Marine Directorate - Licensing Operations Team
NLB	Northern Lighthouse Board
NSVMP	Navigational Safety and Vessel Management Plan
NtM	Notice to Mariners
OfCom	Office of Communications
OMP	Operation and Maintenance Programme
OREI	Offshore Renewable Energy Installation
OSP	Offshore Substation Platform
OWF	Offshore Windfarm
OWPL	Offshore Wind Power Limited
RAM	Restricted in Ability to Manoeuvre
ROV	Remotely Operated Vehicle
SOLAS	Safety of Life at Sea
SOV	Service Operations Vessel
STCW	Standards of Training, Certification and Watchkeeping for Seafarers
UKHO	United Kingdom Hydrographic Office
UXO	Unexploded Ordnance
VHF	Very High Frequency
WNoO	Weekly Notice of Operations
WTG	Wind Turbine Generator

15. Glossary of terms

[To be added post-consent]

Term	Definition
[to be included post-consent]	

A1. Compliance with Offshore EIA Report and Consent Conditions

Source	Commitment	Where addressed
[Hold – to be completed post-consent]		

A2. Compliance with MGN 654

MGN 654 section	Checklist	Where addressed
4.5 Site and Installation Co-ordinates.	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 fmariners' use, appropriate data should also be provided with latitude and longitude coordinates in WGS84 (ETRS89) datum.	[To be added post-consent]
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 and /or near the site would be safe: i. for all vessels, or ii. for specified vessel types, operations and/or sizes. iii. in all directions or areas, or iv. in specified directions or areas. v. in specified tidal, weather or other conditions.	
	b. Navigation in and/or near the site should be prohibited or restricted: for specified vessel types, operations and/or sizes, i. in respect of specific activities, ii. in all areas or directions, or iii. in specified areas or directions, or iv. in specified tidal or weather conditions, or simply v. recommended to be avoided.	
	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.	
4.11 Search and rescue, 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.	

MGN 654 section	Checklist	Where addressed
	c. A SAR checklist will be completed to record discussions regarding the requirements, recommendations and considerations outlined in the above document (to be agreed with MCA).	
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: a. Pre-construction: The proposed generating assets area and proposed cable route b. On a pre-established periodicity during the life of the development c. Post-construction: Cable route(s) d. Post-decommissioning of all or part of the development: the installed generating assets area and cable route.	
4.14 Risk mitigation measures recommended for OREI during construction, operation and decommissioning.	Promulgation of information and warnings through Notices to mariners and other appropriate maritime safety information (MSI) dissemination methods.	
	Continuous watch by multi-channel VHF, including Digital Selective Calling (DSC).	
	Safety zones of appropriate configuration, extent and application to specified vessels.	
	Provision of AtoN as determined by the General Lighthouse Authority (GLA).	
	Monitoring by radar, AIS, CCTV or other agreed means.	
	Appropriate means for OREI operators to notify, and provide evidence of, the infringement of safety zones.	
	Creation of an Emergency Response Cooperation Plan with the MCA's Search and Rescue Branch for the construction phase onwards.	
	Use of guard vessels, where appropriate.	

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