MachairWind Offshore Windfarm

Appendix 13 Outline Vessel Management Plan and Navigational Safety Plan

MachairWind Offshore Windfarm Outline Vessel Management Plan and Navigational Safety Plan

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Abbreviations Table

Abbreviation	Definition
AIS	Automatic Identification System
AtoN	Aid to Navigation
CAA	Civil Aviation Authority
COLREGs	Convention on International Regulations for Preventing Collisions at Sea
CTV	Crew Transfer Vessel
DSC	Digital Selective Calling
DWT	Dead Weight Tonnage
ERCoP	Emergency Response Cooperation Plan
ERP	Emergency Response Plan
ESRI	Environmental Systems Research Institute
GIS	Geographical Information System
GLA	General Lighthouse Authority
HMCG	His Majesty's Coastguard
IALA	International Organization for Marine Aids to Navigation
IHO	International Hydrographic Organization
IMO	International Maritime Organization
KIS-ORCA	Kingfisher Information Service – Offshore Renewables & Cable Awareness
LAT	Lowest Astronomical Tide
LMP	Lighting and Marking Plan
LNtM	Local Notifications to Mariners
MAIB	Marine Accident Investigation Branch
MC	Marine Coordinator
MCA	Maritime and Coastguard Agency
MCC	Marine Coordination Centre
MD-LOT	Marine Directorate – Licensing Operations Team
MF	Medium Frequency
MGN	Marine Guidance Note

Abbreviation	Definition
MOD	Ministry of Defence
MSI	Maritime Safety Information
NAVAREA	Navigation Area
Navtex	Navigational Telex
NLB	Northern Lighthouse Board
nm	Nautical Mile
NSP	Navigational Safety Plan
NtM	Notifications to Mariners
O&M	Operation and Maintenance
OREI	Offshore Renewable Energy Installation
OSP	Offshore Substation Platform
RAM	Restricted in Ability to Manoeuvre
SAR	Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
SOV	Service Operations Vessel
UK	United Kingdom
UKHO	United Kingdom Hydrographic Office
VHF	Very High Frequency
VMP	Vessel Management Plan
VMPNSP	Vessel Management Plan and Navigational Safety Plan
WDA	Windfarm Development Area
WTG	Wind Turbine Generator

1 Introduction

1.1 Background

The MachairWind Offshore Windfarm (hereafter, 'the Project') is a proposed offshore windfarm developed by MachairWind Limited ('the Applicant') and located approximately 6.7 nautical miles (nm) west of the island of Colonsay. The Windfarm Development Area (WDA) will contain infrastructure which includes Wind Turbine Generators (WTG), WTG fixed foundations, Offshore Substation Platforms (OSP), OSP foundations, inter-array cables, OSP link cables (if required), portion of the export cables that are installed within the WDA, fibre optic cables, and scour protection. Consent for the installation and operation of the offshore export cable corridor infrastructure of the Project will be sought separately.

This combined Outline Vessel Management Plan (VMP) and Navigational Safety Plan (NSP) (referred to as the 'VMPNSP') provides information relating to the vessel management and navigational safety of the Project during the construction and operation and maintenance (O&M) phases, in accordance with relevant guidance. The final VMPNSP will detail the necessary information required to discharge the offshore consent conditions relevant to the VMP and NSP which are expected to be included in the Section 36 consents and associated conditions in the marine licence for the Project. However, at this application stage, the information provided is outline only and will be updated accordingly when detailed design and timelines are known.

1.2 Scope and Objectives

This VMPNSP has been created to satisfy the relevant consent conditions as outlined in **Table 1.1**, which will describe where in this document the specific requirements of the consent conditions are met. This version of the VMPNSP is an outline document provided to summarise the relevant information to the Marine Directorate – Licensing Operations Team (MD-LOT) at the consent application stage, as well as to inform the development of the final VMPNSP. This information will be included in the final VMPNSP to ensure that the relevant consent conditions pertaining to vessel management and navigational safety are satisfied. It is acknowledged that as an outline document forming part of the application for the Project, the consent conditions are yet unknown, but will be detailed in the final version of the VMPNSP.

Where relevant, this outline VMPNSP gives due consideration to the relevant guidance applicable during the construction and O&M phases so as to minimise the impact of project vessels and navigational risk to other legitimate users of the sea. The information provided in this document is based on the current understanding of the baseline environment and how the Project will be constructed and operated, in compliance with current legislation and best practice at the time of writing.

Reviews and updates to the outline VMPNSP will be made as required (see **Section 1.5**) and based on the outputs of any future consultation with statutory stakeholders (including the Maritime and Coastguard Agency (MCA), Northern Lighthouse Board (NLB) or any such

industry advisers) or changes in best practice. The information provided in the outline VMPNSP is accurate at the time of submission.

1.3 Consent Compliance

The final VMPNSP will fulfil the consent conditions expected to be included in the Section 36 consents and marine licences for the preparation of a VMPNSP, which will be outlined in **Table 1.1** post-consent. The relevant sections of the VMPNSP will also be highlighted in **Table 1.1** signposting where this document addresses specific requirements of the consent conditions.

In addition to the specific consent requirements for a VMP and NSP (and the requirements thereof as highlighted in **Table 1.1**), this VMPNSP also includes information relating to a number of other consent conditions linked to the matter of navigational safety. These are set out in **Table 1.2**, with reference to where they are addressed in this VMPNSP included.

Table 1.1 Consent Conditions Relevant to the Vessel Management and Navigational Safety Plan

Consent Reference	Condition	Relevant Section
[To be added post-consent]		

Table 1.2 Other Consent Conditions Relevant to the Vessel Management and Navigational Safety Plan

Consent Reference	Condition	Relevant Section
[To be added post-consent]		

1.4 Linkages with Other Plans

A number of other management plans will require approval from MD-LOT as well as relevant statutory stakeholders (such as the MCA and NLB) in compliance with the relevant consent conditions.

These provide detailed information on matters such as the proposed lighting and marking scheme. Therefore, to minimise the duplication of information, this outline VMPNSP provides a summary of such information where appropriate and includes a reference to the associated plan where more detailed information can be found. **Table 1.3** summarises the linkages with other plans referenced within this outline VMPNSP.

Table 1.3 Linkages with Other Plans

Plan	Details Contained in Plan	Reference
Lighting and Marking Plan (LMP)	Describes how the Project will be lit and marked in accordance with key guidance and policies and outlines how it has complied with stakeholder requirements. It will detail how Aids to Navigation (AtoN) associated with the Project will be managed, including maintenance, repair and emergency provisions (and as such will also be an AtoN Management Plan).	**Appendix 12 Outline Lighting and Marking Plan**

1.5 Updates and Amendments to the Vessel Management and Navigational Safety Plan

It is acknowledged that following completion of the post consent VMPNSP, the document may require updates in the future. The main reasons why a review or change may be required are as follows:

- Significant Project design changes;
- Significant changes in construction methods, or the schedule of construction and O&M activities;
- Significant changes to the baseline environment (i.e., port or offshore infrastructure developments which may result in an increase in vessel activity or significant change in movements);
- Significant changes in legislation or best practice;
- Significant project milestone reached, i.e., transition from construction to O&M; and
- Scheduled reviews.

Where an update is required, MD-LOT will be consulted to determine whether the level of change signifies a material alteration to an approved plan that requires formal consultation, or a non-material update to be approved by MD-LOT.

2 Navigational Safety Measures

The following subsections describe the navigational safety measures that the Applicant will implement during the construction and O&M phases of the Project. Relevant effects and necessary mitigation for the decommissioning phase will be established in the Decommissioning Programme and so are outside the scope of this document.

2.1 Construction

2.1.1 Marine Coordination

Measures relating to the management and coordination of project vessels during construction are described in **Section 5**.

2.1.2 Temporary Lighting and Marking

The lighting and marking scheme for the Project during the construction phase will be determined in line with International Organization for Marine Aids to Navigation (IALA) Guideline G1162 (IALA, 2022) and Recommendation R0139 (IALA, 2021) and in consultation with:

- NLB;
- MCA;
- Civil Aviation Authority (CAA); and
- Ministry of Defence (MOD).

Further detail is provided in **Appendix 12 Outline Lighting and Marking Plan**.

2.1.3 Guard Vessels

Guard vessels will be considered for the Project at particular times, as determined by a risk assessment of the relevant activities or any hazards arising. One such example may be when construction vessels are particularly vulnerable due to partially completed works or a particular construction activity.

Further detail on the emergency triggers which may result in the deployment of a guard vessel is presented within **Appendix 12 Outline Lighting and Marking Plan**.

Where guard vessels are active, they will monitor the area of construction both to provide an additional layer of protection, and to provide additional information to third-party vessels. A guard vessel may also be required to monitor safety zones, noting this will be further assessed as part of the safety zone application undertaken post consent (see **Section 2.1.4**).

2.1.4 Safety Zones

Section 95 and Schedule 16 of the Energy Act 2004 set out the 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) Regulations 2007 clarify the requirements for applications. These regulations apply to territorial waters in or adjacent to Scotland, and within the Renewable Energy Zone. Minimum advisory safe passing distances, as defined by a risk assessment, may also be applied where safety zones do not apply (and will be promulgated through Local Notifications to Mariners (LNtM)).

Post consent, an application will be made to MD-LOT, which will include:

- Pertinent information from the Development Specification and Layout Plan;
- A summary of the construction programme;
- Construction method statement documents; and
- The proposed methodology for notifying relevant stakeholders.

It is intended that the following safety zones will be applied for during construction:

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

2.1.5 Cable Laying and Other Restricted in Ability to Manoeuvre Operations

Vessels that are Restricted in Ability to Manoeuvre (RAM) will be utilised during the installation works and heavy lifting operations for the WDA infrastructure including, but not limited to, the inter-array cables, OSP link cables (if required), and portion of the Export Cables installed within the WDA. Vessels may become RAM as a result of the nature of the work they are undertaking and therefore have limited ability to avoid an approaching vessel(s). All RAM vessels involved in the construction of the Project will comply with the Convention on International Regulations for Preventing Collisions at Sea (COLREGs) (International Maritime Organization (IMO), 1972/77) and vessel type regulation information transmitted through Automatic Identification System (AIS). 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. They will also:

- Display lights and shapes to indicate their restrictions;
- Transmit safety warnings on Very High Frequency (VHF), using the “Securite” message where messages contain important information relating to navigation;
- Communicate with the Marine Coordinator (MC) throughout operations; and
- Show current navigational status at all times for the benefit of other vessels equipped with AIS.

Cable laying activities will be undertaken in accordance with the Cable Plan and will be promulgated through the notification procedure, and, if necessary, following internal risk assessment, guard vessels may be employed during the cable laying period (see **Section 2.1.3**).

2.1.6 Emergency Response Cooperation Plan and Emergency Response Plan

In compliance with the requirements of Marine Guidance Note (MGN) 654 (MCA, 2021 (a)) (in particular item 4.11 of the Search and Rescue (SAR) checklist within Annex 5 noting that "*An ERCoP [Emergency Response Cooperation Plan] will be developed for the construction, operation and decommissioning phases of the OREI*"), an ERCoP will be produced in liaison with the MCA. This document will be in line with the MCA's ERCoP template (MCA, 2021 (b)), with the first iteration to be specific to the construction phase of the Project. The ERCoP will be a live document approved by the MCA, and in place at an agreed-upon time prior to the start of construction.

Additionally, the Applicant will also prepare an Emergency Response Plan (ERP) that will detail the emergency planning and response control measures to be implemented during the construction phase by all of the Applicant's personnel and contractors.

2.1.7 Injury, Destruction, or Decay of the Project

The Applicant will notify the Scottish Ministers, in writing, in the case of injury to, destruction, or decay of WDA infrastructure during the construction phase. The Scottish Ministers will advise of any remedial action to be taken and any requirements for AtoN to be displayed following consultation with the MCA, NLB or any such required advisers.

2.2 Operation and Maintenance

2.2.1 Marine Coordination

Measures relating to the management and coordination of project vessels during O&M are described in **Section 5**.

2.2.2 Lighting and Marking

The lighting and marking scheme for the Project during the O&M phase will be determined in line with IALA Guideline G1162 (IALA, 2022) and Recommendation R0139 (IALA, 2021) and in consultation with:

- NLB;
- MCA;
- CAA; and
- MOD.

Further detail is provided in **Appendix 12 Outline Lighting and Marking Plan**.

2.2.3 Safety Zones

The Applicant 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 (and will be promulgated through LNtM).

2.2.4 Restricted in Ability to Manoeuvre Operations

Vessels that are RAM may be used during cable maintenance and heavy lift operations. The same protocols outlined for the construction phase in **Section 2.1.5** will apply, including compliance with COLREGs, use of the "Securite" message on VHF, communications with the MC, and the display of navigational status on AIS.

Promulgation of cable maintenance activities will also be undertaken through the same notification procedure and, if necessary, following internal risk assessment, guard vessels may be deployed during the cable maintenance period.

2.2.5 Emergency Response Cooperation Plan and Emergency Response Plan

In compliance with the requirements of MGN 654 (MCA, 2021 (a)), the approved construction ERCoP will be updated for the O&M phase in close liaison with the MCA. This document will be in line with the MCA's ERCoP template (MCA, 2021 (b)).

The Applicant will additionally produce a separate ERP which will detail the emergency planning and response control measures to be implemented across the O&M phase by relevant personnel and contractors.

2.2.6 Injury, Destruction, or Decay of the Project

The Applicant will notify the Scottish Ministers, in writing, in the event of injury to, destruction, or decay of the Project infrastructure during the O&M phase. The Scottish Ministers will advise of any remedial action to be taken and any requirements for AtoN to be displayed following consultation with the MCA, NLB or any such required advisers.

3 Promulgation of Information

This section provides details of the proposed approach to promulgation of information and updates relating to the Project.

3.1 Local Notifications to Mariners

LNtM will be issued in advance of any activity associated with the Project for which there is deemed to be a potential impact upon navigational safety. The LNtM will be issued to relevant local and national stakeholders and maintained to ensure contact details remain current and comprehensive. The United Kingdom Hydrographic Office (UKHO) will be included in the circulation list to allow them to determine whether the information should be included in their Weekly Admiralty Notifications to Mariners (NtM), as described in **Section 3.2**.

The structure of the LNtM will be succinct. To ensure this, the LNtM will be limited to inclusion of the items listed in **Table 3.1**.

Table 3.1 Content of Local Notifications to Mariners

Item	Description
Title	Clearly state that the document is a LNtM and a short relevant title about the scope of the topic.
Supplementary information	This will include the date of issue and the notification number.
Details	▪ Date/time of start/finish and location of the works (co-ordinates); ▪ 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 MC/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	Provided only if absolutely necessary.

3.1.1 Local Notifications to Mariners Issued Prior to the Commencement of Construction

The Applicant will ensure, as soon as practicable prior to the start of construction activities, that local mariners, fishers' organisations, and His Majesty's Coastguard (HMCG) (in this case the Joint Rescue Coordination Centre and the most appropriate Maritime Rescue Coordination Centre, which will likely be Belfast) are made fully aware of the Licensable Marine Activity through LNtM or other means.

3.1.2 Local Notifications to Mariners Upon Commissioning and During Operation and Maintenance

The Applicant will ensure, following the completion of the construction works for the Project, that local mariners, fishers' organisations, and HMCG are made fully aware via LNtM.

Likewise, where any planned or unplanned maintenance activities considered outwith standard daily maintenance activities are undertaken for the Project, the Applicant will ensure the same suite of stakeholders are informed via LNtM.

3.1.3 Post-commissioning

Following commissioning of the Project, the Applicant will provide the as-built locations and maximum heights of all infrastructure to the UKHO for nautical charting purposes.

3.2 Admiralty Notifications to Mariners

Separately from LNtM, Admiralty NtM are issued by the UKHO and are based on the information provided within LNtM (see **Section 3.1**). These are issued on a weekly basis by the UKHO and enable physical corrections to charts and associated publications. It is the responsibility of mariners to check the weekly editions of Admiralty NtM via the UKHO website and make any necessary corrections to the charts on board their vessel.

3.3 Hydrographic Charts

The following information will be provided to the UKHO once known for the purposes of nautical charting:

- Locations of all WTGs and construction equipment over 150 m above Lowest Astronomical Tide (LAT);
- Maximum height of such structures; and
- Details of fixed lighting fitted to all WTGs.

WTGs will be charted by the UKHO (on appropriately scaled charts) using the WTG or offshore development area chart symbol (as presented in Symbols and Abbreviations used on Admiralty Paper Charts NP5011 (UKHO, 2018)).

3.4 Kingfisher Bulletins and Kingfisher Information Service – Offshore Renewables and Cables Awareness

The Kingfisher Information Service – Offshore Renewables & Cable Awareness (KIS-ORCA) project is a joint initiative between Subsea Cables United Kingdom (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.

Notifications to the Kingfisher fortnightly bulletin may include for example, the following:

- An overview of the Project;
- 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.

The following subsections detail the KIS-ORCA notifications that will be promulgated for the construction and O&M phases of the Project.

3.4.1 Notifications Prior to the Commencement of Construction

Prior to commencement of construction of the Project, the Applicant will promulgate relevant details in the Kingfisher fortnightly bulletins. Such details will include any indicative vessel routes (see **Section 8**), timing and locations of construction activities, and corresponding details of the nature of such activities.

3.4.2 Notifications During Construction

Throughout the construction phase of the Project, the Applicant will promulgate relevant details in the Kingfisher fortnightly bulletins. Such details will include indicative vessel routes (see **Section 8**), timing and locations of construction activities, and corresponding details of the nature of such activities. This will be managed via the MC.

3.4.3 Notifications Upon Commissioning and During Operation and Maintenance

It will be ensured by the Applicant that the commissioning of the Project is promulgated to the Kingfisher fortnightly bulletin, in order to keep the commercial fishing industry informed. Notices will be issued to the Kingfisher fortnightly bulletin which detail any planned or unplanned maintenance activities outside of the standard daily maintenance undertaken at the Project.

3.5 Radio Navigational Warnings

Radio navigational warnings may be issued in the event that an activity or incident pose a danger to other marine users. Some examples of when radio navigational warnings could be issued are:

- Light signal, fog signal, buoy, or other AtoN failure;
- Establishment of new AtoN;
- Cable-laying activities (where a risk to passing traffic is posed);
- Underwater operations which could elicit potential dangers in or near shipping lanes; and
- Vessels not under command or undertaking significant RAM operations.

Once details of an activity have been issued through the standard LNtM 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.

For radio navigational warnings, the UKHO act as the Navigation Area (NAVAREA) 1 (NE Atlantic) Coordinator of the IMO and International Hydrographic Organization (IHO)

Worldwide Navigational Warning Service and also as the UK coordinator for issuing coastal navigational warnings. However, the MCA is the overarching body responsible for broadcasting radio navigation warnings and is responsible for charging levies to broadcast them.

The broadcasts are under the control of the UKHO but are typically made as follows:

- For vessels in NAVAREA 1, broadcasts are made through Enhanced Group Call Safety NET 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 4 hours), or upon receipt of the information if it is of a vital nature.
- Broadcast by VHF or Medium Frequency (MF) radio at selected MCA stations at the next scheduled broadcast and every 12 hours thereafter.

3.6 United Kingdom Marine Reporting Requirements

As referenced within MGN 564 (MCA, 2019), all vessels are required to report incidents within UK waters 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.

Information required includes:

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

3.7 Other Notifications

Where appropriate, the Applicant shall consult local Harbour Masters who may wish to issue local warnings to those navigating in the vicinity of the Project. Of particular relevance may be Harbour Masters for ports and harbours located either on the Scottish southwest coast or Irish northeast coast. A definitive consultee list will be provided within the final VMPNSP (once working ports for construction and O&M are confirmed).

4 Location of Working Ports

4.1 Construction and O&M Ports

The Project has undertaken a preliminary study of ports that may be suitable for use during the construction phase of the Project. So far, Hunterston, Kishorn and Stornoway have been identified as potential options for the construction phase, with Campbeltown, Hunterston, or the King George V dock of Glasgow identified as possible options for the O&M phase. A decision as to the final port(s) to be used for the Project will be made post consent, once detailed due diligence and further engagement with relevant stakeholders, including ports, have been undertaken.

4.2 Marine Operations Ports

In addition it is likely that another port, local to the Project, will be required for the during the construction phase of the Project to assist with marine operation activities. The Project has undertaken some high-level preliminary due diligence to identify which ports may be suitable for use as a marine operations base during construction. To date, Oban, Port Ellen and Bendoran have been identified as possible options. As noted above, a decision as to the final port(s) to be used for the Project will be taken post consent, once detailed due diligence and further engagement with relevant stakeholders, including ports and local communities, have been undertaken.

Relevant information on other ports used will be promulgated via methods outlined in **Section 3** if these are required.

5 Management and Coordination of Vessels

The following measures of relevance to management/coordination of vessels will be in place during construction:

- An MC will be responsible for managing construction activities;
- The MC will be based within a central position (the Marine Coordination Centre (MCC)). The location of the MCC will be described once known.
- The MC will manage permission for construction vessels to enter the area of construction (as well as safety zones utilised);
- The MC will liaise with vessels on agreeing routeing destinations, as well as berthing and anchorages to be used;
- The MC will monitor both vessels and personnel via AIS (in addition to communicating with the relevant personnel) for any potential vessel access conflicts. They will detect and monitor unauthorised vessels;
- The MC will advise on safety zones and no-go locations;
- The MC will provide localised weather information to project vessels;
- The MC will act as the central contact point for contractors in the case of an emergency; and
- The MC will issue LNtM on behalf of the contractors, as well as issuing a weekly notice of Operations and Mobile Objects list.

During the O&M phase, similar provisions for vessel coordination will be established with marine coordination via the MC. Further information on this coordination will be provided for approval in the Operation and Maintenance Plan.

6 Types and Specifications of Vessels

This section will outline the types and specifications of vessels to be utilised during the construction phase (**Section 6.2**) and O&M phase (**Section 6.3**). Depending on information available, the final VMPNSP may include indicative vessels and specifications where specific vessels are not yet known, and these may vary depending on market availability.

6.1 Standards and Requirements

Vessel crews will meet recognised standards, complying both with the international maritime rules (as adopted by the relevant flag state) as well as regulations for their class and area of operation. Independent vessel audits on construction vessels will be conducted by the Applicant as necessary to check that they meet these standards, in addition to being appropriate for the purpose of their desired role(s). Vessels will meet the standards set out in 'MCW-GEN-CST-CRI-IBR-000001 -Employers Minimum Requirements for Vessels'. In addition, all vessels entering the WDA will be subject to inspections as per 'MCW-GEN-MAC-PRO-IBR-000001 - Vessel Entry Procedure'.

Requirements for size, type and area of operation will be met by vessel crews, in line with Standards for Training, Certification and Watchkeeping as set out by the IMO. Any site-specific requirements implemented by the Applicant will be beyond the minimum standards outlined above. All vessels which are to be involved in the construction of the Project will be lit in accordance with COLREGs (IMO, 1972/77), with AIS receivers and transmitters equipped by all construction vessels.

All construction vessels will be required to comply with the procedures set out in this document (and all other relevant plans).

6.2 Construction Phase

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

- Foundation installation;
- WTG installation;
- OSP installation; and
- Cable installation.

Precise vessels to be used are not currently known, however indicative specifications are given based on the information available at the time. Any vessel names quoted are to be considered indicative only, are provided for the purposes of illustrating a typical vessel of that type and should not be interpreted as a commitment that these vessels will be used.

The confirmed individual vessel details will be notified to the Scottish Ministers in writing no later than 14 days prior to commencement of construction, and thereafter, any changes to the details supplied will be notified to the Scottish Ministers, as soon as practicable, prior to any such change being implemented in the construction or operation of the Project.

The Applicant will ensure that for any vessel appointed to engage in the works, the following details are available (where applicable) in the Vessel Report at least five days prior to its engagement in the construction of the Project.

6.2.1 Foundation Installation

The [insert vessel type/name] will collect the foundations and substructures from [insert port].

Key details of an indicative [insert vessel type/name] are presented in **Table 6.1**.

Table 6.1 [Insert Vessel Type/Name] Key Details

Vessel Parameter		Value or Detail
Name		
Type		
Contact		
Role		
Key characteristics	Length	
	Breadth	
	Dead Weight Tonnage (DWT)	
Propulsion		
Mooring/station keeping		

6.2.2 WTG Installation

The WTGs will be installed by a [insert vessel type/name]. The [insert vessel type/name] will collect the WTGs from [insert port].

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 Parameter		Value or Detail
Name		
Type		
Contact		
Role		
Key characteristics	Length	
	Breadth	

Vessel Parameter		Value or Detail
	DWT	
Propulsion		
Mooring/station keeping		

6.2.3 OSP Installation

The OSPs will be installed by a [insert vessel type/name]. The [insert vessel type/name] will collect the OSPs from [insert port].

Key details of an indicative [insert vessel type/name] are presented in **Table 6.3**.

Table 6.3 [Insert Vessel Type/Name] Key Details

Vessel Parameter		Value or Detail
Name		
Type		
Contact		
Role		
Key characteristics	Length	
	Breadth	
	DWT	
Propulsion		
Mooring/station keeping		

6.2.4 Cable Installation

The cables will be installed by a [insert vessel type/name]. The [insert vessel type/name] will collect the cables from [insert port].

Key details of an indicative [insert vessel type/name] are presented in **Table 6.4**.

Table 6.4 [Insert Vessel Type/Name] Key Details

Vessel Parameter		Value or Detail
Name		
Type		
Contact		
Role		
Key characteristics	Length	
	Breadth	

Vessel Parameter		Value or Detail
	DWT	
Propulsion		
Mooring/station keeping		

6.3 Operation and Maintenance Phase

Similar vessels are likely required, at various times, to those described for construction in **Section 6.2**. These will include [insert vessel types].

7 Numbers and Movements of Vessels

7.1 Construction Vessels

Indicatively, the construction phase of the Project is expected to take up to five-years. During construction, the number of vessels within the WDA at any one time will vary. Peaks in vessel activity will likely reflect the timing of any major installation works.

Table 7.1 presents, for each vessel type anticipated to be entering the WDA, the indicative number of these vessels involved in the construction, as well as the main construction activities involved and the anticipated number of return journeys to be made. The number of transits will be an estimate based on the information available at the time of writing (and so the actual numbers may differ).

Table 7.1 Construction Vessel Activities Summary

Vessel Type	Anticipated Total Number	Key Construction Activities	Approximate Number of Return Journeys
Dredging vessel	6	Foundation Installation	30
Tugs and barges storage and transport	16		1100
Jack-up vessel	3		300
Dynamic Position Heavy Lift Vessel	5		525
Support vessel	8		500
Jack-up vessel	5	WTG installation	300
Dynamic Position Heavy Lift Vessel	2		200
Accommodation vessel	3		40
Windfarm service vessel	3		30
Support vessel	3	OSP installation	400
Installation vessel	2		100
Tug with accommodation barge	2		100
Supply vessel	2		50
Support vessel	3		500
Inter-array cable laying vessel	2	Cable installation	107
Accommodation vessel	3		42
Installation support vessel	3		32
Trenching support vessel	2		21
Crew Transfer Vessel (CTV)	3		204
Rock Fall pipe vessel	2		32
Light construction vessel	2		161

Vessel Type	Anticipated Total Number	Key Construction Activities	Approximate Number of Return Journeys
Export offshore cable laying vessel	2		107
Export cable nearshore laying vessel	2		50
Export cable support vessel	2		161
Export cable pre-trenching/backfilling vessel	2		43
Export cable - cable jetting vessel (CFE)	2		43
Export Cable - Survey Vessel	2		161
Export Cable - Multi Cat Vessel	3		139
Export Cable - Rock Fall Pipe Vessel	2		32
Workboat	20		190

7.2 Operation and Maintenance Vessels

During the O&M phase, the number of vessels within the WDA at any one time will likely vary but will consist of up to 423 return trips per year on an indicative basis. Peaks in vessel activity will reflect the timing of major maintenance works carried out. It is therefore not possible for precise numbers of vessel movements during the O&M phase to be provided at this time. Estimates based on current information are provided in **Table 7.2**.

Table 7.2 Operational Vessel Activities Summary

Vessel Type	Anticipated Total Number	Approximate Number of Return Journeys
Jack-up vessels	1	8
Service Operations Vessels (SOV)	2	48
SOV daughter craft	4	N/A (these are attached to the SOV on transit to the WDA)
CTVs	2	360
Cable laying / maintenance vessels	1	1
Geophysical survey vessels	3	6

8 Indicative Transit Corridors

The Project will comply with the International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974) and COLREGs (IMO, 1972/77) regulations, and so all project vessels will passage plan before engaging in transit related to the Project to increase navigational safety. Project vessels will comply with COLREGs and SOLAS as navigational priorities at all times.

For the purpose of providing an indication to third-party vessels of where project vessels may be encountered, indicative transit corridors will be provided as part of the VMPNSP. These will show how project vessels may transit to/from the Project and will be considered as part of the project vessel passage planning. However, there will be various reasons why project vessels may need to deviate from these, including (but not limited to):

- To ensure COLREGs compliance;
- To account for prevailing weather, tidal, or sea state conditions (noting potential for adverse weather conditions in the area);
- To account for navigational hazards (either as indicated on charts or notified through LNtM etc.);
- In scenarios of indicative transit corridors not accounting for the origin/destination of the construction vessel;
- Where instructions are issued by the MC (or other responsible persons in charge of coordinating and managing construction vessel traffic); or
- For any other reason which the vessel Master may deem relevant for the purpose of ensuring the safety of their or another vessel.

The indicative transit corridors will be presented in **Figure 8.1**.

[Figure showing indicative transit corridors relative to the Project to be added once known]

Figure 8.1 Indicative Transit Corridors

9 Anchoring Areas

A single preferred anchorage location is located in proximity to the WDA, approximately 8.5 nm to the southeast at the entrance to Loch Gruinart (inshore of Nave Island). In addition, two preferred anchorages are located in the bay within the west of Islay, approximately 14.5 nm southeast of the WDA. **Figure 9.1** presents the locations of these anchorages.

Anchoring locations used will be at the discretion of the vessel Master but will be in conjunction with information provided by the MC or port authorities where relevant. 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. For example, CalMac Ferries raised, during consultation as part of the NRA process, that project vessels seeking shelter inshore of Colonsay may have an impact on their typical routeing.

All vessels associated with the Project will take the above into consideration prior to anchoring as per standard marine practice. Construction and O&M vessels requiring anchorage within the WDA will request permission to do so from the MC.

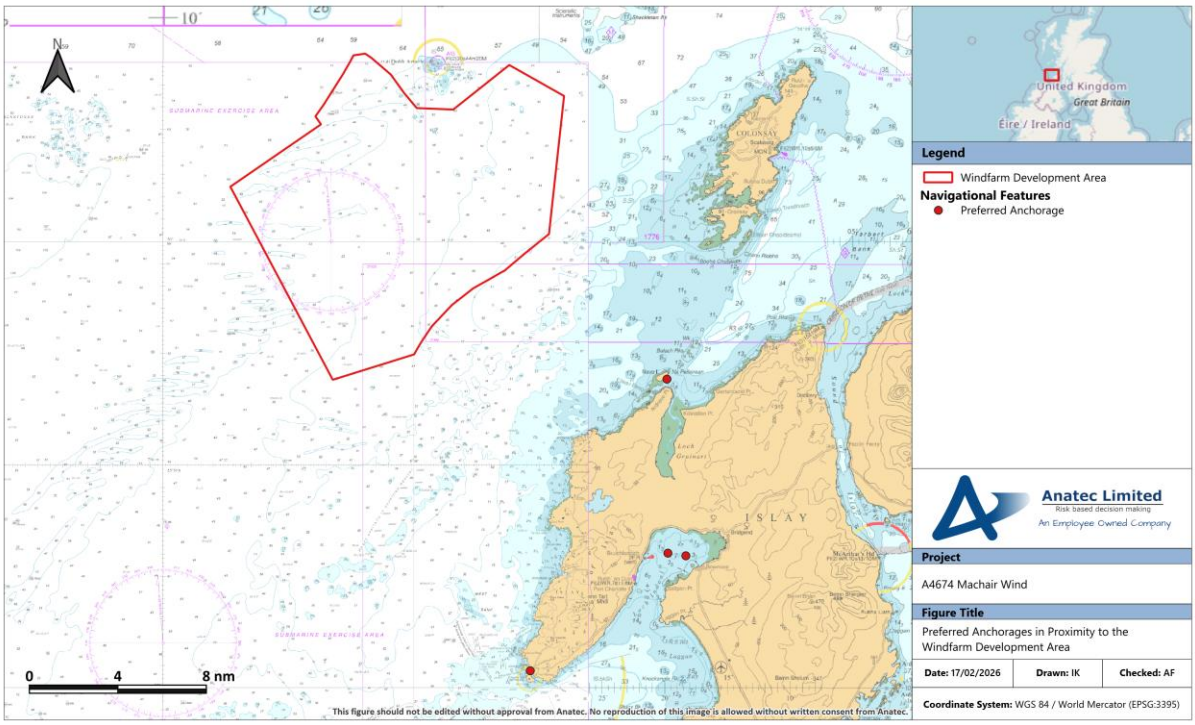

Figure 9.1 Preferred Anchorages in Proximity to the Windfarm Development Area

10 Compliance with Marine Guidance Note 654

The relevant consent conditions are likely to require the Project to demonstrate that the final VMPNSP has adequately addressed, all of the recommendations of MGN 654 and its annexes (MCA, 2021 (a)) that may be appropriate to the Project, or any other relevant document which may supersede said guidance prior to approval of the final VMPNSP.

MGN 654 (MCA, 2021 (a)) therefore will be reviewed and all appropriate recommendations (at this pre-construction stage of the development) identified. In each case it will be indicated where each of these recommendations has been addressed within this outline VMPNSP (or other relevant plan) for the Project. The review summary will be provided in **Table 10.1** for the final VMPNSP post consent. The MGN 654 checklist is provided in full within **Appendix 13.1 Navigational Risk Assessment** of the Environmental Impact Assessment Report.

Table 10.1 Marine Guidance Note 654 Compliance

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 mariners' use, appropriate data should also be provided with latitude and longitude co-ordinates in WGS84 (ETRS89) datum.	[To be added post-consent]
4.10 Assessment of Access to and Navigation Within, or Close to, an OREI	It should be determined to what extent navigation would be feasible within or near to 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: i. for specified vessel types, operations and/or sizes, ii. in respect of specific activities, iii. in all areas or directions, or iv. in specified areas or directions, or v. in specified tidal or weather conditions, or simply vi. 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	[To be added post-consent]

MGN 654 Section	Checklist	Where Addressed
	vessels operating in the area e.g. by preventing vessels from responding to calls for assistance from persons in distress d. Guidance on the calculation of safe distance of OREI boundaries from shipping routes has been considered.	
4.11 Search and rescue, maritime assistance service, counter pollution and salvage incident response.	a. An ERCoP will be developed for the construction, operation and decommissioning phases of the OREI.	[To be added post-consent]
	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.	[To be added post-consent]
	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).	[To be added post-consent]
4.12 Hydrography	In order to establish a baseline, confirm the safe navigable depth, monitor seabed mobility and to identify underwater hazards, detailed and accurate hydrographic surveys are included or acknowledged for the following stages and to MCA specifications: i. pre-construction: The proposed generating assets area and proposed cable route; ii. on a pre-established periodicity during the life of the development; iii. post-construction: Cable route(s); iv. post-decommissioning of all or part of the development: the installed generating assets area and cable route.	[To be added post-consent]
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.	[To be added post-consent]
	Continuous watch by multi-channel VHF, including Digital Selective Calling (DSC).	[To be added post-consent]
	Safety zones of appropriate configuration, extent and application to specified vessels.	[To be added post-consent]
	Provision of AtoN as determined by the General Lighthouse Authority (GLA).	[To be added post-consent]
	Monitoring by radar, AIS, Closed-Circuit Television or other agreed means.	[To be added post-consent]
	Appropriate means for OREI operators to notify, and provide evidence of, the infringement of safety zones.	[To be added post-consent]
	Creation of an ERCoP with the MCA's Search and Rescue Branch for the construction phase onwards.	[To be added post-consent]
	Use of guard vessels, where appropriate	[To be added post-consent]

11 Compliance with the Application

Table 11.1 provides details of the aspects of the Application of relevance to the VMPSNP, and details where in the document they have been addressed.

Table 11.1 Compliance with the Application

Source	Measure	Where Addressed
[To be added post-consent]		

12 References

IALA (2021). IALA Recommendations O-139 on the Marking of Man-Made Offshore Structures. Edition 3.0. Saint Germain en laye, France: IALA.

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

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

MCA (2019). Marine Guidance Note 564 Marine Casualty And Marine Incident Reporting. Southampton: MCA.

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

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

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UKHO (2023). Admiralty Sailing Directions South-West Coast of Scotland Pilot NP66A. 3rd Edition. Taunton: UKHO.