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## Environmental Management Plan (EMP) KINCARDINE OFFSHORE WINDFARM PROJECT

Prepared	Checked	Reviewed	Approved
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Organisation:  KOWL	Organisation:  KOWL	Organisation:  Nereus Environmental Ltd	Organisation:  KOWL
Name / signature:  Abi Cowing	Name / signature:  Amy Parry	Name / signature:  Nigel Coulshed	Name / signature:  Alan West






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### ACRONYMS, ABBREVIATIONS and DEFINITIONS

ACoW	Archaeological Clerk of Works
ADD	Acoustic Deterrent Devices
ALARP	<i>As Low As Reasonably Practicable</i>
CaP	Cable Plan
CD	Chart Datum
CMID	Common Marine Inspection Document
ECoW	Environmental Clerk of Works
EMP	Environmental Management Plan
ES	Environmental Statement
FMMS	Fisheries Mitigation and Management Strategy document
HES	Historic Environment Scotland
IMO	International Maritime Organisation
INNS	Invasive non-native species
IPIECA	International Petroleum Industry Environmental Conservation Association
IS	Implementation Service
ISM	International Safety Management Code
KOWL	Kincardine Offshore Windfarm Limited
MARPOL	MARPOL is short for MARine POLLution and was originally signed at the International Convention for the Prevention of Pollution from Ships in 1973. The current convention is a combination of the 1973 Convention and the 1978 Protocol. MARPOL 73/78 and came into effect in 1983.
MGO	Marine Gas Oil
MMO	Marine Mammal Observers
MS	Marine Scotland
MSA	Marine Safety Agency
MSN	Merchant Shipping Notice
OPPC	Oil Pollution Prevention Certificate
OPRC Regulations	Oil Pollution Preparedness, Response and Cooperation Convention) Regulations
PAD	Protocol for Archaeological Discoveries
PAM	Passive Acoustic Monitoring

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PC	Principal Contractor
PEMP	Project Environmental Monitoring Plan
RAMS	Risk Assessment Method Statement
ROV	Remotely Operated Vehicle
SEMP	Site Environmental Management Plan
SEPA	Scottish Environment Protection Agency
SHEQS	Safety, Health, Environment, Quality and Sustainability
SLT	Safety Leadership Team
SNH	Scottish Natural Heritage
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SWMP	Site Waste Management Plan
TBT	Toolbox Talk
UXO	Unexploded Ordnance
VMP	Vessel Management Plan
WT	Wind Turbine
WTG	Wind Turbine Generator
WTN	Waste Transfer Note



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## 1. Introduction

### 1.1. Purpose of the Document

This Environmental Management Plan (EMP) has been prepared to address the specific requirements of the relevant conditions attached to Section 36 Consent and Marine Licenses issued to Kincardine Floating Offshore Windfarm Limited (KOWL).

The overall objective of the EMP is to provide the overarching framework for environmental management and monitoring during the construction and operation of the Kincardine Offshore Floating Windfarm (the Project).

The EMP is designed to provide practical guidance to those involved in the Project, including KOWL personnel and contractors on the management of potential environmental impacts associated with the construction and the operation of the Windfarm.

All KOWL personnel and contractors involved in the Project must comply, as a minimum, with the mitigation and management measures and procedures presented in this EMP.

The S36 Consent and Marine Licenses contain a variety of conditions that must be discharged through approval by the Scottish Ministers/Licensing Authority prior to the commencement of any offshore construction works. One such requirement is the approval of an EMP, the purpose of which is to provide the over-arching framework for on-site environmental management and monitoring plan during the construction and operation of the Development (but excluding decommissioning). The relevant conditions setting out the requirement for an EMP for approval, and which are to be discharged by this EMP, are presented throughout the document in the appropriate sections. Note a separate document will be produced to cover the environmental monitoring requirements, the Project Environmental Monitoring Plan (PEMP).

This plan is owned by the Project Manager and summarises the method which KOWL will use to achieve the critical success factors for sustainability and the environment. As far as is reasonably practicable, KOWL aims to eliminate the risk of adverse environmental events and to undertake business in a sustainable manner. The EMP will form the basis for assessing the effectiveness or otherwise of any Risk Assessment Method Statement (RAMS) produced by sub-contractors in addressing environmental issues.


The EMP is a live document and will be regularly reviewed and updated as the Project progresses.

The arrangements for disseminating Environment information is set out in Section 6 of the EMP. This will be undertaken with due regard to the requirements of the client and key stakeholders.

### 1.2. Scope of the Document

KOWL has produced this Environmental Management Plan (EMP) to document the arrangements for the management and control of environmental aspects and the potential impacts associated with the construction phase of the Project to ensure compliance to legal and client requirements including the environmental commitments and Section 36 consent conditions.

The EMP has been developed based on the information provided within the Original Environmental Statement, the Variation Environmental Statement and associated documentation with the aims of:

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- Ensure all environmental commitments, and conditions associated with the licences and consents, are met;
- Achieve the requirements of all applicable statutory legislation, standards and guidance;
- Be a repository for the agreed protocols to manage, and mitigate, the risk of adverse environmental impacts;
- Record best practice environmental design and sustainability principles; and
- Ensure effective engagement with reference to the Fisheries Mitigation and Management Strategy document (FMMS).

*Table 1-1 EMP Source Documents*

<b>Source Documents</b>
Kincardine Offshore Windfarm Environmental Statement March 2016
Kincardine Floating Offshore Wind Demonstrator Project Habitats Appraisal (Original HRA) March 2017
ES Additional Information Addendum September 2016
ES Addendum: Appendix B: HRA Additional Information Addendum September 2016
Variation to Section 36 EIA Report October 2017
Variation HRA October 2017

### **1.3. Project Overview**

The location for the Kincardine Offshore Windfarm is shown in Figure 1-1 and shows the Development in the North Sea just of the coast of Aberdeen.

- Generating capacity of the windfarm will be up to a limit of 50MW;
- Number of turbines:
  - 2MW turbine installed as the initial machine; followed by
  - six Vestas 164m 8.4MW turbines (derated to 8MW).
- Foundations for the Wind Turbines (WTs) will be of two types:
  - the installation of the first turbine (2MW WTG) will utilise the semi-submersible WindFloat™ prototype from a demonstrator site in Portugal;
  - the foundations for the 8MW Vestas machines will be either:
    - WindFloat™ (steel semi-sub); or
    - Cobra (concrete semi-spar).
- Anchors – 4 drag embedded type (Stevshark Mk 6) for the 2MW turbine
- Anchors – 3 drag embedded type (Stevshark Mk6) for the 6x8MW turbines;
- Mooring points – 4 catenary type per WT;

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- Buoy:
  - Temporary surface buoys during construction and Permanent submersible buoys at seabed for ROV recovery. 1 per mooring lines, 22 total array;
- The WTs will be connected by inter-array cables with the resultant power being exported directly to the onshore grid by two transmission lines. These will then connect into the National Grid at Redmoss onshore substation;
- Inter-array cables (12 x 33kV capacity cables each 2.5km in length; total length of 30km) will connect the structures within the field, to gather generated power for onward export to shore;
- There will be no Offshore Substation Platform (OSP) and the power will be exported by 33KV twin export (2 x 33kV, 19km each in length) from the offshore site to the landing point ashore;
- and
- Ancillary works – aids to navigation etc.

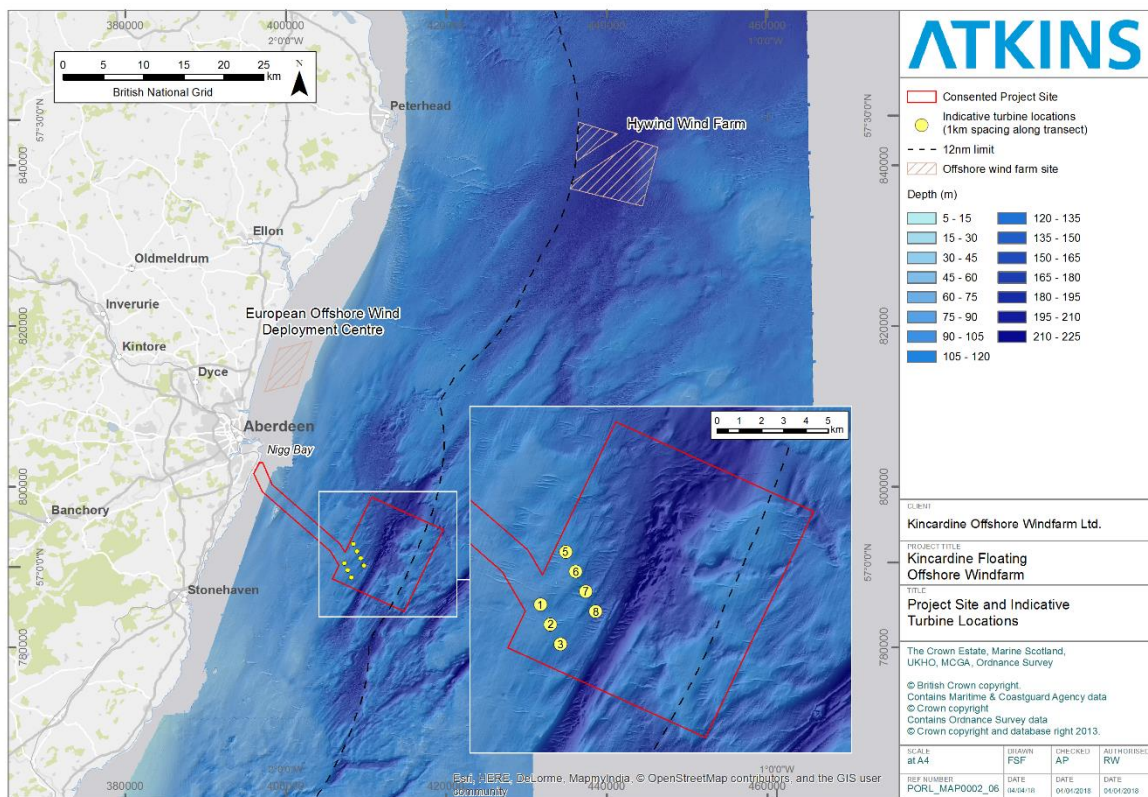



Figure 1-1 Project site and indicative turbine locations

#### 1.4. Approach to Amending and Updating this EMP

This plan details Project specific information to manage the environmental aspects of the Project. It is a live document and will be regularly reviewed and updated as the Project progresses over Tranche 1 to 3. The EMP will be adapted to incorporate any improvements (provided they meet with the

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requirements set down in the Consent Conditions) that reduce the risk of environmental incidents on the Project.

### **1.5. Compliance**

Compliance with the various consent conditions are documented in the Commitments Register and where applicable throughout the EMP.

### **1.6. Roles and Responsibilities**

Roles and Responsibilities are detailed in Section 6 of the EMP.

### **1.7. Structure**

Kincardine Offshore Windfarm Limited (KOWL) intends to install up to 6 turbines, in addition to a 2MW turbine (seven in total). The maximum generating capacity of the windfarm will remain up to 50MW. The 2MW turbine will be installed first followed by the larger turbines over the remainder of the installation period. It is anticipated that the 6 main turbines will be approximately 8MW each in capacity.

The EMP is structured as follows:

- Introduction – Project description and purpose of plan
- Project Description
- Aims Objectives and Targets
- Environmental Permits, Licenses and Legislation
- Environmental Aspects and Impacts
- Environmental roles, competency and communications
- Emergency Preparedness and Response
- Environmental incident and near miss reporting
- Environmental Audit and Monitoring Arrangements

## **2. The Project Description**

### **2.1. The Project**

The Project is considered a commercial demonstrator site, which will utilise floating foundation technology, and will be one of the world's first array of floating wind turbines. It has been included within the Survey, Deploy and Monitoring scheme for offshore renewable systems (similar to wave and tidal devices).

The Project is located south-east of Aberdeen approximately 8nm (15km) from the Scottish coastline and provides suitable water depth for a floating offshore wind demonstrator development (approximately 60-80m) (Figure 1-1).

The project is split into the following areas:

The Development Area – the wind farm area including the Wind Turbine Generators (WTG) and inter-array cables.

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The Offshore Export Cable Corridor – the area within which the proposed export cables will be laid, from the perimeter of the Development Area to the onshore area at Mean High Water Spring (MHWS).

The Onshore Area – the onshore area above MHWS including the underground cables connecting to the onshore substation at Redmoss.

This EMP focuses on the offshore elements only as per Section 36 Consent and Marine Licences granted. The onshore area is subject to a separate planning permission granted by Aberdeen City Council.

## 2.2. Construction Programme

The construction of the Project is anticipated to occur in ‘Tranches’ in-line with the indicative Programme outlined below. A final Construction Programme for each tranche will be provided to Scottish Minister prior to commencement of construction as a requirement of the consent conditions.

*Table 2-1 Indicative construction programme*

Tranche	Activities	Indicative Start Dates
Tranche 1	Onshore works and HDD drilling	March 2018
	Mooring installation Turbine Location 1	May 2018
	Export cable 1 installation	May 2018
	Installation of 2MW turbine to Location 1	June 2018
Tranche 2	Export cable 2 installation	April 2019
	Mooring installation Turbine Locations 5-7	April 2019
	Installation of inter-array cables Locations 5-7	Aug 2019
	Installation of turbines to Locations 5-7	Aug 2019
Tranche 3	Mooring installation Turbine Locations 1-3	March 2020
	Installation of inter-array cables Locations 1-3 and 8	June 2020
	Move 2MW to Location 8 (dependent on recertification and consultation as noted above)	June 2020
	Installation of turbines to Locations 1-3	June 2020

## 2.3. Key Stakeholders

During the delivery of the works, consultation and communication will be required with various agencies. Contacts details are shown in Table 2-2.


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Table 2-2 Stakeholder Contact Details

Offshore Agency	Onshore	Offshore	Key Contacts	Contact Details
Scottish Natural Heritage	✓	✓	Erica Knott	Erica.Knott@snh.gov.uk
Marine Scotland	✓	✓	TBC	TBC
Scottish Environment Protection Agency (SEPA)	✓	✓	TBC	TBC
Historic Environment Scotland (HES)	✓		Urszula Szupczynska	urszula.szupczynska@hes.scot
Fire & Rescue Service	✓	✓	TBC	TBC
Aberdeen Harbour	✓	✓	Harbour Master	harbourmasters@aberdeenhairbour.co.uk
Coast Guard Agency	✓	✓	MCA	Aberdeen.coastguard@mcga.gov.uk

#### 2.4. Project Description

The Project documentation will assist the site team to deliver the Project on time and to the required standards, avoiding adverse effects on the environment and in a sustainable manner.

In addition to the main suite of documents “Site Work Packs” shall be prepared for each team working on the Project, providing them with health, safety, environment and quality information relevant to the work they are doing.

All pre-construction information that is relevant to environmental management is held in the Project Filing System.

Environmental issues held within this environmental management plan are Project wide; please refer to specific operation(s) Site Environmental Management Plan(s) (SEMP) within the technical appendices for specific hazards relating to this Project. There is a SEMP for every phase of operations and associated task where applicable. The SEMP(s) will be developed and included within the Appendices as the Project progresses.

### 3. Aims, Objectives and Targets

The key objective is to ensure risk of adverse impacts is mitigated and all environmental commitments and conditions are met.

Project specific targets include but are not limited to the targets specified in Table 3-1.




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Table 3-1 Project Waste Targets

Target*	Measurement	Records
Minimise waste to landfill	Data from Waste Transfer Notes (WTNs)	Site Waste Management Plan (SWMP)
Minimise pollution events	Reports via Environmental Clerk of Work (ECoW) and Project Manager	Incident Report
100% environmental awareness	Induction & briefings	TBT & Induction Records
Minimise nuisance complaints	Stakeholder feedback	Records of complaints

The Project Environmental Clerk of Works (ECoW) will work with the Project team to identify opportunities for sustainable innovations.

#### 4. Environmental Permits, Licences and Legislation

The Project team will ensure all relevant consents, permissions and licences are in place to carry out the work and the conditions defined within them adhered to.

Any consents, licences and permissions in place for the works shall be communicated during induction and as part of the pre-start briefing.

The Project team will respect the rights of any onshore landowners, fisheries interests and comply with conditions agreed by the client, local authorities, Marine Scotland and other interested parties.

Specific licences and permits associated with the Project are:

Table 4-1: Licenses and Permits

Consent name	Description of works requiring consent	Approximate Timescale to obtain consent	Consenting authority	Consent required
KOWL	Construction of the Project (offshore)	Already Granted	Marine Scotland	Marine License

A full list of environmental legislations associated with the construction of the offshore wind farm is documented in the Legal Register.

\* Any specific targets to be agreed with sub-contractor(s) with EMP amended to reflect this.

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## 5. Offshore Environmental Aspects

### 5.1. Pollution at Sea

The requirement to set out the environmental management framework for the pollution prevention and contingency planning arises from specific requirements in the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017):

*Section 13:*

*b) a pollution prevention and control method statement, including contingency plans;*

*Vessels and plant required for the construction, operation and decommissioning phase will follow industry best practice and OSPAR, IMO and MARPOL guidance for pollution at sea. Specifically:*

- *OSPAR Annex III: On the Prevention and Elimination of Pollution from Offshore Sources;*
- *IMO Guidelines for the Development of Shipboard Marine Pollution Emergency Plans, 2010 Edition; and*
- *Regulation 37 of MARPOL Annex (I) requiring that oil tankers of 150 gross tonnage and above and all ships of 400 gross tonnage and above carry an approved Shipboard Oil Pollution Emergency Plan (SOPEP).*

#### Legislative Controls

Marine Scotland is the initial point of contact for marine pollution events. They are also responsible as the regulatory and licensing authority for approving the use of chemical dispersants in shallow coastal waters in accordance with:

- the Marine and Coastal Access Act 2009;
- the Scottish Adjacent Waters Boundaries Order 1999; and
- the Marine Access (Scotland) Act 2010 (MMO, 2014).

Table 5.1 below sets out the main legislation in relation to pollution prevention and response that is considered in the MPCP.


*Table 5-1 Regulations Governing Pollution Prevention at Sea*

Shipping Regulation	Description
The Merchant Shipping (ISM Code) Regulations 2014	Provides for the application of the ISM Code (Safety Management Certificate) on all vessels to which the SOLAS Convention applies and to other vessels to which EU regulations apply. The ISM Code provides an international standard for the safe management and operation of ships and for pollution prevention.



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<p>The Merchant Shipping (Prevention of Oil Pollution) Regulations 1996</p>	<p>These Regulations give effect to Annex I of MARPOL 73/78 (prevention of oil pollution) in UK waters. They address oily drainage from machinery spaces on vessels and installations and set limits for the levels of oil in discharged water from these sources. Vessels and installations are required to hold a valid Oil Pollution Prevention Certificate.</p> <p>Oil tankers of 150 gross tonnage and above and all ships of 400 gross tonnage and above are required carry an Oil Record Book to record when specific operations take place on board which have the potential to lead to oil pollution from vessels and an approved Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with guidelines issued by the International Maritime Organisation (IMO).</p>
<p>Bonn Agreement for cooperation in dealing with pollution of the North Sea by oil and other harmful substances (2004)</p>	<p>An agreement to combat oil pollution and to stimulate active cooperation and mutual assistance among states bordering the North Sea in case of casualties or other incidents at sea that are of great concern for the protection of the coasts and related interests.</p>
<p>Marine Safety Agency (MSA) (1996) Merchant Shipping Notice No. M.1663, Vessels Engaged in Oil Recovery</p>	<p>Provides guidelines for the design, construction, ship's equipment and operation of offshore support vessels, which may be required to have the capability of handling, storing and transporting oil recovered from a spill in emergency situations.</p>
<p>The Merchant Shipping (Ship-To-Ship Transfers) Regulations 2010 (as amended)</p>	<p>Bring in controls on ship-to-ship transfers in UK waters, including prohibiting ship-to-ship transfers and bunkering operations outside harbour authority waters and put in place a legislative regime for assessing and licensing harbour authorities which propose to allow ship-to-ship transfers in their waters.</p> <p>Merchant Shipping Notice (MSN) 1829 "Ship to Ship Transfer Regulations 2010/2012" sets out detailed requirements regarding Ship to Ship Transfers of a cargo consisting wholly or mainly of oil. The Notice is given statutory force by the Merchant Shipping (Ship to Ship Transfers) Regulations 2010 (as amended). An exemption is provided in MSN 1829 for vessels to refuel, or</p>

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	be refuelled by daughter-craft, so as not to impair operationally necessary refuelling.
The Merchant Shipping (Oil Pollution Preparedness, Response and Cooperation Convention) Regulations 1998 (OPRC Regulations)	The Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 introduce into UK law the oil spill planning requirements and legal oil spill reporting requirements of the OPRC Convention.

### Sources of Pollution

An inventory of the types of pollutants (and particularly hydrocarbons – oils and lubricants) that will be used during the construction and/or operation of the Project, together with relevant preventative measures and controls will be developed by the sub-contractor, once appointed, and presented within this EMP once compiled prior to the start of any construction operations. An inventory of potential pollutants will inform the consideration of spill response strategies proposed by the sub-contractor to control their operations. Once agreed they will be presented within this EMP prior to construction.

The appointed sub-contractor will provide greater detail on the volumes, types and sources of each of the anticipated potential pollutants, with an emphasis on hydrocarbons, that they would anticipate using during the construction and operational phases, and how these tie in with their detailed risk assessment of potential pollution events and any associated pollution prevention plan and spill response strategies.

During construction and operation, the Construction Project Manager will develop and monitor an up to date register of all vessels involved in Kincardine Offshore Wind Farm construction. The register will document the types and quantities of hydrocarbons carried on board (i.e., bunkers, lubrication oils and hydraulic oils) linked to any associated pollution prevention plan and spill response strategy.


The construction and operational works will be conducted in such a manner as to minimise the risk of spillage and pollution. Potential risks and control measures, based on the hydrocarbon and chemical inventories on the vessels and offshore installations, will be identified through the use of planning tools such as:

1. Project programme meetings;
2. Pre-commencement meetings;
3. All vessels, where relevant, will adhere to their Common Marine Inspection Document (CMID) and will be expected to produce a current and valid CMID Report; and
4. Inspection Test Plans will be completed as part of the appointed sub-contractor's construction quality control for the Project. This will provide a mechanism to ascertain what inspections and tests are being carried out during the Project.

### Pollution Response and Roles

KOWL as the operator of the wind farm has overall responsibility for any spill associated with the Project over its lifecycle and is responsible for:

- Approving all spill response plans submitted by sub-contractors;

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- Coordinating an ongoing spill response following the initial incident; and
- Consulting statutory bodies following any pollution incident.

The EMP and any associated Maritime Pollution Plan(s) are live documents and will be updated over the lifecycle of the Project. Procedures will be reviewed as part of the overall Project quality plan and in any event reviewed following on from any spill or pollution incident in order to ascertain any lessons learned.

The Principal Contractor (PC) and sub-contractor are responsible for pollution prevention strategy planning and for any pollution incident response. Sub-contractors will submit their own pollution prevention plans for approval to the PC which are required to be compliant with the standards set within the EMP.

All sub-contractors are required to retain the services of specialist spill response contractors who will be responsible for Level 2 and 3 spills.

### Reporting

Reporting procedures are covered in Section 9 of this EMP.

### General Spill Response Hierarchy

The general spill response hierarchy follows the International Petroleum Industry Environmental Conservation Association (IPIECA) Good practice guidelines for using the tiered preparedness and response framework<sup>1</sup>.

Through the three tiers approach contingency planners are encouraged to highlight where the spill response resources could be sourced from to fulfil risk mitigation aims. The identification of discrete capabilities that may be required for oil spill response enables a much more specific and tailored representation of response capability matched to the Project. Thus, the response capability developed required is unique to this operation and location. Each capability can be considered independently to take account of at least the following four determining factors:

- inherent operational-specific risks (e.g. the oil type, inventory and related release scenarios);
- location-specific risk (e.g. the proximity of oil-sensitive environmental receptors);
- relative proximity and access to supporting resources and their logistical requirements; and
- applicable legislative requirements or stipulated regulatory conditions.

Due to the close proximity of Aberdeen Harbour and the oil spill response capabilities there this Project would be well served by Tier 3 capabilities due to the strong logistical links, which have been tested and are robust enough to minimise the need for stronger local or regional capabilities.

<sup>1</sup> <http://www.oilspillresponseProject.org/wp-content/uploads/2016/02/GPG-Tiered-Preparedness-and-Response.pdf>


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Table 5-2 IPIECA Spill Response Hierarchy

Spill Level	Resources	Non-persistent Oil (MGO and Diesel)	Persistent Oil (Hydraulic and Lube Oils)
Tier 1	On site	Natural dispersion and monitoring (using support vessel). If safe to do so, agitate using standby vessel propeller ('prop-wash'), by steaming through the slick at speed. Some locally available dispersant capability may exist, through vessel mounted spray systems.	Natural dispersion and monitoring. Mechanical recovery where possible.
Tier 2	Spill Response Contractor	Natural dispersion and monitoring (aerial surveillance). Chemical dispersion only if safety or environmental sensitivities are threatened, in consultation with the relevant authorities. Possible additional dispersant is provided through a mutual aid agreement.	Consult specialist services from a spill response contractor. Continue to monitor and evaluate strategy using aerial surveillance. Boat-based dispersant application likely to be the primary response strategy – liaise with a Tier 2 contractor. Consider mechanical recovery where possible. Mobilise shoreline containment and recovery equipment if shoreline is threatened – spill response contractor to engage additional support if necessary.
Tier 3	Spill Response Contractor	Natural dispersion and monitoring (aerial surveillance). Chemical dispersion only if safety or environmental sensitivities are threatened, in consultation with the relevant authorities.	Consult specialist services through the ad-hoc appointment of a Tier 2/3 spill response contractor. Continue to monitor and evaluate strategy using aerial surveillance. Aerial dispersant application likely to be the primary response strategy – through appointment of an ad-hoc Tier 2/3 spill response contractor. Consider mechanical recovery where possible. Mobilise shoreline containment and recovery equipment if shoreline is threatened.

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### 5.2. Underwater Noise

Noise monitoring will be undertaken during the initial year of operation to gather data on the operational noise characteristics of the semi-submersible floating offshore Wind Turbine Generators (WTGs) during a range of sea states and operational modes. This data will be gathered as part of the survey, deploy and monitor scheme. Data will be published as part of the wider development survey system that is currently planned for the WTGs and substructures that is currently being put forward for a large European level marine impact assessment of floating offshore windfarms.

### 5.3. Fish, Shellfish and Spawning Seasons

Sensitive migration or spawning times will be avoided where possible during construction. The strategy for managing fisheries interests is covered in the Fisheries Management and Mitigation Strategy.

### 5.4. Marine Mammals Presence Avoidance

Trained Marine Mammal Observers (MMO) will be present on the vessels when appropriate to advise on environmental best practice and to conduct searches for the presence of marine mammals prior to activities commencing. In addition, the use of acoustic deterrent devices (ADD) (scarers) and / or Passive Acoustic Monitoring (PAM) to detect marine mammals in the area will be considered if necessary and relevant to the species of concern. The MMO will maintain a daily diary of observations along with a photographic record of any sightings with approximate positions. A preform template will be approved by KOWL once the MMO has been appointed.

Any active acoustic warning also represents a new source of sound pollution, specifically intended to alter the behaviour of marine mammals. The use of such devices should therefore be considered carefully to decide whether or not it is appropriate to deliberately add extra-noise to the sea as a precautionary measure.

Where practicable construction activities anticipated to result in the most impacts to marine mammals (cable laying / burial, rock placement) will be programmed outside of the peak periods for marine mammals' presence within the vicinity of the Development Area (e.g. August and September).

Defined navigational routes will be utilised by vessels to reduce the risk of collision with marine mammals.

### 5.5. Marine Historic Environment

A reporting protocol will be implemented in the event that there is an unexpected or incidental find relating to the historic environment during pre-construction surveys or during construction and installation activities. This protocol will be in line with The Crown Estate (2014) Protocol for Archaeological Discoveries: Offshore Renewables Projects. A Protocol for Archaeological Discoveries (PAD) provides a system for reporting and investigating unexpected archaeological discoveries encountered during construction and installation works. All finds are reported through the PAD Implementation Service (IS), and are researched by members of the IS team. Identified information is disseminated to everyone involved in the reporting of the find (roles are defined within the PAD) and recorded in relevant national databases.

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To reduce sediment disturbance and suspended sediment plume generation during all phases, construction, operational and maintenance and decommissioning, activities should be limited to 'normal'/calm tidal current and wave conditions. Increases in wave energy and tidal currents have the potential to transported suspended sediments further than under normal conditions. Limiting activities to calm conditions will reduce the footprint over which plumes can have a potential impact, as well as reduce other risks during the process.

### 5.6. Unexploded Ordnance (UXO)

Embedded Mitigation in Environmental Statement (Other Marine Users)

A UXO threat assessment (as per DNVGL-RP-0360) will be undertaken prior to construction and risk mitigation measures will be implemented with regard to all hazards on site. All practicable mitigation measures to minimise the risk of health and safety incidents associated with UXO will be fully developed prior to construction, as per standard industry practice and included in the Project health and safety plan. Specific measures include the following:


- Survey will be undertaken prior to any intrusive works to confirm the presence and form of any known or potential UXO;
- Survey anomalies which indicate the presence of UXO will be avoided through micro-siting of all infrastructure works which could disturb UXO. Establishment of a formal quality assurance process with sign-off certification of the design process from a UXO specialist to reduce risks to As Low As Reasonably Practicable (ALARP);
- The scope and extent of further surveys to detect the presence of UXO in advance of major maintenance work will be considered in advance of scheduling and undertaking maintenance which has the potential to affect UXO;
- A UXO coordinator will be part of the vessel crew on relevant construction and maintenance vessels involved in activities where there is a risk of encountering previously unidentified UXO to ensure that all safety procedures and responses are adhered to during operations and in the event of UXO being encountered; and
- Crew on board all vessels involved in Project construction, maintenance and support during operations will be regularly briefed on munitions safety procedures and awareness.

A UXO management procedure will be put in place to manage any unanticipated finds of suspected UXO. These measures will be delivered as part of the Environmental Management Plan (EMP).

## 6. Onshore Environmental Aspects

### 6.1. Potential Impact on the Intertidal Zone

During the directional drill operation for phase 1 of the cable installation works a phased approach has been adopted in order to minimise any potential impacts on breeding birds. The cabling works have been split into two phases over two years. The cable pit is approximately 100m from the cliff face beside a railway line and coastal path. The cable vessel itself will keep over 100m from the shore to minimise any potential disturbance with a limited duration of approximately 10 days or less (weather dependent) with the impact reducing incrementally as the vessel moves offshore. As there is no intertidal zone, only cliff face, impacts on bird species will be minimal.

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### 6.2. Noise Management

To minimise the level of noise to which sensitive receptors will be exposed, BS 5228 recommends the following measures as guidance on best available techniques to be implemented on site. As such all construction activities will be undertaken in accordance with this guidance.

### 6.3. Dust Management

The effect of dust emitting activities can be greatly reduced or eliminated by applying the site-specific mitigation measures from PAN 50: Controlling the Environmental Effects of Surface Mineral Workings and the Institute of Air Quality Management's Guidance on the assessment of dust from demolition and construction Ver 1.1. Mitigation appropriate for application to the construction works are listed below.

#### Site Planning

- Machinery and dust causing activities will be located away from sensitive receptors where possible;
- Tips and stockpiles will be located away and down-wind from neighbours where possible;
- All personnel will be to be fully trained with regular environmental toolbox talks as the Project develops;
- A trained and responsible manager will be on site during working times to maintain the required logbook and carry out site inspections; and
- Hard surface/compact site haul routes will be used, where practical.

#### Construction Traffic

- All vehicles will switch off engines when not required and no idling vehicles will be permitted;
- Effective vehicle cleaning will be implemented in addition to specific fixed wheel washing on leaving site and the damping down of haul routes;
- All loads entering and leaving site will be covered;
- No site runoff of water or mud will be permitted;
- Dusty surfaces will be swept regularly;
- On-road vehicles will comply with set emission standards;
- Low speed limits will be observed on site; and
- The movement of construction traffic around site will be minimised.

#### Site Activities

- Dust generating activities will be minimised;
- A dust removal system will be provided for plant where applicable;
- The drop height of falling material will be limited;
- Water will be used as a dust suppressant where applicable;
- Stockpiles will be covered, seeded or fenced to prevent wind whipping; and
- Activities/operations will be temporarily suspended if the creation of dust cannot be avoided.



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## 7. Environmental Roles, Competency and Communications

### 7.1. Roles

The requirement to set out the environmental roles and responsibilities for the construction and operation of the Project arises from specific requirements in the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017):

Section 13:

The EMP must be in accordance with the ES and ES Addendum insofar as it relates to environmental management measures. The EMP must set out the roles, responsibilities and chain of command for the Company personnel, any contractors or sub-contractors in respect of environmental management for the protection of environmental interests during the construction and operation of the Development.


Responsibility for environmental management and sustainability on the Project is defined in Tables 7-1 and 7-2.

*Table 7-1 Key Construction Project Personnel*


Role	Responsibilities
Environmental Clerk of Works <sup>2</sup>	<ul style="list-style-type: none"> <li>• quality assurance of final draft versions of all plans and programmes required under this consent;</li> <li>• *responsibility for the monitoring and compliance of the consent conditions and the environmental mitigation measures; provision of on-going advice and guidance to the Company in relation to achieving compliance with consent conditions, including but not limited to the conditions relating to the CMS, the EMP, the PEMP, the PS, the CaP and the VMP;</li> <li>• provision of reports on point * above (responsibility...) to the Scottish Ministers at timescales to be determined by them;</li> <li>• inducting and toolbox talks to onsite construction teams on environmental policy and procedures and keeping a record of these;</li> <li>• monitoring that the Development is being constructed according to the plans and this consent, the Application and ES Addendum and compliance with all relevant legislation;</li> </ul>

<sup>2</sup> As per role defined in Section 25 of the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017)




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	<ul style="list-style-type: none"> <li>• reviewing and reporting incidents/near misses and reporting any changes in procedures as a result; and</li> <li>• agreement of a communication strategy with the Scottish Ministers.</li> </ul>
<p>Construction Project Manager</p>	<ul style="list-style-type: none"> <li>• Overall responsibility for appropriate levels of environmental training, awareness and systems of work.</li> <li>• Overall responsibility for the implementation and upkeep of the Environmental Management Plan.</li> <li>• Overall responsibility for the effective mitigation of environmental risk.</li> <li>• Overall responsibility for compliance with all legislation permits and licences associated with the Project.</li> <li>• Overall responsibility for any clean-ups or remedial works caused by the Projects works.</li> <li>• Overall responsibility for communication with stakeholders and the effective management of their concerns or requirements.</li> <li>• Overall responsibility for the maintenance of all environmental documentation and records associated with the Project.</li> <li>• Overall responsibility for the reporting of any adverse environmental event to the relevant body or stakeholder.</li> <li>• Overall responsibility for the monitoring of works being undertaken to ensure compliance with all legal &amp; other requirements.</li> <li>• To effectively delegate duties to the Project team and third parties regarding environmental duties and responsibilities.</li> <li>• To ensure all Sub-Contractors have effectively addressed any environmental risks their works may impact upon.</li> </ul>
<p>Lead Environmental Advisor</p>	<ul style="list-style-type: none"> <li>• Supports the Project Team to ensure compliance with environmental and sustainability requirements and commitments for the Project.</li> <li>• Monitors site activities and ensures control measures are in place including emergency equipment.</li> <li>• Conducts regular site inspections and audits to ensure compliance with environmental requirements including licences and consents.</li> <li>• Liaises with Client Representatives, regulators and other interested parties as required.</li> <li>• Updates and maintains the Environmental Sustainability Management Plan.</li> <li>• Acts as a point of contact for all environmental specialists.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Informs the Project team of any potential environment issues that may impede or otherwise disrupt the Projects programme of works.</li> <li>• Undertakes training &amp; briefings as required.</li> <li>• Ensures the Project team are kept up to date with all applicable environmental legislation.</li> <li>• Acts as a lead for any environmental investigations into adverse events or near misses.</li> <li>• Assists in the pre-start supply chain appraisals.</li> <li>• Updates &amp; manages the Site Waste Management Plan.</li> <li>• Monitors water and energy use and ensures all data is recorded and retained.</li> </ul>
Construction Manager / Package Manager	<ul style="list-style-type: none"> <li>• Assists the Project Manager in their overall environmental responsibilities.</li> <li>• Effectively manages environmental responsibilities in the Project Manager's absence.</li> <li>• Effectively delegates environmental roles and responsibilities when required to do so.</li> </ul>
Project Engineer / Site Engineer / General Foreman	<ul style="list-style-type: none"> <li>• Complies with all reasonable instructions for managing their work packages in an environmentally compliant manner.</li> <li>• Assists the management team in developing environmentally responsible systems of work.</li> <li>• Monitors the effectiveness of any implemented environment controls such as permits or licences.</li> <li>• Reports any adverse incidents associated with their works.</li> <li>• Ensures all persons working on their work packages are competent to deal with any environmental issues that might be encountered including clean-up &amp; other mitigation.</li> <li>• Ensures all adverse environmental events are reported to the Project management team.</li> <li>• Ensures all Sub-Contractors have effectively addressed any environmental risks their works may impact upon.</li> <li>• Provides environmental briefings and toolbox talks as required.</li> </ul>

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Works Teams / Sub- Contractors / General Employees	<ul style="list-style-type: none"> <li>• Undertakes work in a diligent and conscientious manner to minimise any environmental impact.</li> <li>• Complies with any licence and permit conditions.</li> <li>• Complies with any reasonable instruction from the Project team to reduce the risk of an adverse environmental event.</li> <li>• Reports any potential environmental issues or adverse events.</li> <li>• Ensures that they understand the environmental risks associated with their works.</li> </ul>
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*Table 7-2 Other Project Roles and Responsibilities*

Role	Responsibility
Scottish Strategic Marine Environment Group (SSMEG)	<ul style="list-style-type: none"> <li>• KOWL will be an active participating member of this group, as appropriate.</li> <li>• Advises Scottish Ministers of any concerns relating to construction of the development.</li> </ul>
KOWL Management Team	<ul style="list-style-type: none"> <li>• Responsible for overall delivery of the Development and associated works in compliance with the EMP, planning conditions and environmental commitments.</li> </ul>
Sub-contractor Environmental Management Lead	<ul style="list-style-type: none"> <li>• Responsible for overall delivery of the environmental commitments of the Development and associated works in compliance with the EMP and environmental commitments.</li> </ul>
KOWL Engineering and Construction Management Team	<ul style="list-style-type: none"> <li>• Responsible to KOWL for overall contract delivery of the Development and associated works in compliance with the EMP, planning conditions and environmental commitments.</li> </ul>
Technical Specialists	<ul style="list-style-type: none"> <li>• Appointed in accordance with Project programme requirements to advise KOWL on the development and review of the EMP and provide advisory services to KOWL and the Sub contractors' construction teams through specific Clerk of Works duties.</li> <li>• The Specialists are required to provide appropriately experienced persons in various technical fields.</li> </ul>

## 7.2. Environmental Training

All KOWL and sub-contracted staff shall receive environmental awareness training including waste management and spill response as part of the core training programme. This is supported by Project specific toolbox talk and briefings as well as one-to-one tutoring for those with specific environmental responsibilities.

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Table 7-3 Environmental Training & Communication

<b>Type of Environmental Training &amp; Awareness</b>	
Core Training & Communication	Waste management Spill response
Project Specific Training & Communication	Weekly Toolbox Talks i.e. oil storage / surface water/ biodiversity Environmental Briefings Health & Safety and Environmental Alerts Site Induction to include the key environmental aspects of the Project as outlined in this EMP. Briefings on issues such as consents / biodiversity / sensitive areas / marine mammals / noise disturbance etc. The Environmental Management Plan The Emergency Plan

### 7.3. Internal Communications


In addition to training and briefing, environmental information is provided to all those working for and on behalf of KOWL through the mechanisms outlined in Table 6-4.

Table 7-4 Internal Communication

<b>Type of communication</b>	<b>Attendees</b>	<b>Schedule</b>
Project Review Meetings	Construction Project Manager Project Environmental Advisor Construction / Package Manager Project Engineer KOWL Management Team KOWL Environmental Management Team Environmental Clerk of Works	Weekly to include environmental incident and near miss statistics / any enforcement action taken. Constraints, consents & requirements. Environmental good practice & the outcome of inspections & audits including areas of improvement.

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Sub-contractor progress meetings	Construction Project Manager Project Environmental Advisor Construction / Package Manager Project Engineer Environmental Clerk of Works	To be updated once they have been appointed. Then at agreed milestones.
SLT [Safety Leadership Team] Meetings	Project Environmental Advisor Construction / Package Manager Project Engineer KOWL Management Team KOWL Environmental Management Team Environmental Clerk of Works	Updated monthly.
Noticeboard SHEQS Alerts & posters	All Principal Contractor and Sub-contractor(s) teams.	Updated monthly; to include environmental incident and near miss statistics / any enforcement action taken. Constraints, consents & requirements.  Environmental good practice & the outcome of inspections & audits including areas of improvement.
Environmental Report	Construction Project Manager Project Environmental Advisor Construction / Package Manager KOWL Management Team KOWL Environmental Management Team Environmental Clerk of Works	Weekly & Monthly report confirming Project status / implementation of environmental requirements / proposed amendments to the EMP & commitments register. Updates on monitoring / audits / inspections & incidents

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#### 7.4. External and Internal Communications

Records of external and internal environmental communications are held in the Project Filing System.

#### 8. Emergency Preparedness and Response

The Project team will assess the potential for environmental emergency situations and ensure measures, and appropriate equipment, is in place.

An Emergency Plan will be developed. The Plan will be evaluated at intervals not exceeding six months and results recorded. The types of environmental drills and tests, appropriate for the Project, will be detailed in the plan.

As a minimum, these will cover, but will not be limited to, the following:

- Identification of potential emergency situations i.e., oil spillage, discovery of wildlife or archaeological features;
- Emergency control arrangements; and
- Emergency contact numbers.

Local emergency services will be informed of planned high-risk site activities.

The Emergency Plan will be held in the Project Filing System and displayed on the site notice board.

#### 9. Environmental Incident and Near Miss Reporting

The requirement to set out the environmental management framework for Incident Reporting arises from specific requirements in the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017):


*Section 6. Incident Reporting*

*In the event of any breach of health and safety or environmental obligations relating to the Development during the period of this consent, the Company must provide written notification of the nature and timing of the incident to the Scottish Ministers,*

*including confirmation of remedial measures taken and/or to be taken to rectify the breach, within 24 hours of the incident occurring.*

**Reason:** *To keep the Scottish Ministers informed of any such incidents which may be in the public interest.*

All environmental incidents and near misses arising from work activities shall be reported to the relevant KOWL Project Manager and to the Environmental Management Team in accordance with Accident Incident Reporting.

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In addition, potential and actual environmental hazards that arise on site can be raised using specific site recording cards (to be defined with the sub-contractors) these will help build up a picture of environmental observations and incidents that will help to identify trends and subsequently guide updates to the EMP.

Records of environmental incidents and near misses are held in the Project Filing System Section.

### 9.1. Contractor Response Procedures

Where a serious environmental or pollution incident occurs the contractor or responsible person must immediately initiate their own response procedure to control and minimise any adverse environmental effect.

KOWL must also be notified within 30 minutes following the defined procedures to allow the incident to be escalated, where required, within the business and to liaise with the relevant authorities. The KOWL team shall then inform MS-LOT of all serious environmental or pollution incidents within 24 hours.

For less serious or significant environmental incidents (including wildlife incidents such as observed fish or bird mortality), the contractor or responsible person must record details of the incident and complete an incident report as soon as practicable. In addition, KOWL must also be notified as soon as reasonably practicable, but ideally within 24 hours, in order to allow KOWL to report internally and to manage liaison with relevant authorities. KOWL shall provide an incident report where available and liaise with MS-LOT on any further actions to be taken.

Where management team individuals are not directly available, the incident will require to be reported via a Reporting Line. The management team will be regularly updated on the status of the incident.

## 10. Environmental Audit and Monitoring Arrangements


### 10.1. General Monitoring Requirements

Inspections and audit will be carried out to determine whether activities comply with the planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve the objectives set by KOWL and any sub-contractors.

The KOWL Project team is responsible for management and monitoring of the site activities, including sub-contractors, to ensure that health, safety, environmental and quality requirements are maintained.

As a minimum, the monitoring regime will examine the following:

- Compliance with legislation and KOWL Procedures;
- Compliance with the Environmental Management Plan;
- Compliance with client requirements;
- Management of environmental risks;
- Communications with team members and contractors on current issues and opportunities;
- Supplier and Sub-Contractor performance on environmental and sustainability requirements;
- and
- Emergency preparedness.

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Site audits and inspections will be conducted in-line with the agreed customer requirements stipulated in the contract of works and those identified within Project Inspection Schedule.

*Table 10-1 Environmental Audit Schedule*

<b>Type of HSE Monitoring</b>	<b>Schedule</b>
Directors & Senior Management	Six-Monthly
Project Directors	Six-Monthly
Project Managers	Monthly
Site Engineers	Weekly
Environmental Clerk of Works	Monthly
Health, Safety, Quality and Environmental Advisors	Quarterly
Health, Safety, Quality and Environmental Compliance Auditor	At start-up / Quarterly / At Handover

The environmental audit and monitoring inspection reports are filed in the Project Filing System.

## **10.2. Cable Route Monitoring**

### **General**

Monitoring of the cable route, inter-array cables and mooring systems will be undertaken on a regular basis during the operational phase (initial surveying occurring twice annually, tailing off during the life cycle of the development if no adverse impacts are identified) of the Project to ensure they are operating as per the design specifications.

During cable burial a bathymetric survey will be undertaken to demonstrate that the agreed maximum 5% reduction in the surrounding depth, with respect to Chart Datum (CD), has been adhered to. This post installation survey will provide the datum for an operational baseline upon which future condition surveys will be measures against.


Surveys will use ROVs/vessel mounted sensors (i.e. multibeam sonar or other systems as required) to assess the condition of the assets and a visual cable export cable route survey will be undertaken as per the design specifications. This will allow monitoring of the marine benthos to be assessed in line with the survey, deploy and monitor scheme that the development will operate in.

Monitoring of burial depth can be assessed by interrogation of local temperature changes (or otherwise) in the cable via the in-built fibre optic core. Anomalies can therefore be investigated as required.

### **Inter-array**

Monitoring of inter-array cables and mooring systems will be undertaken on a regular basis during the operational phase of the Project to ensure they are operating as per the design specifications. Initial surveying will take place bi-annually, unless an incident is suspected, tailing off during the life cycle of the development if no adverse impacts are identified. These surveys will use ROVs/vessel mounted sensors (i.e. multibeam sonar or other systems as required) to assess the condition of the assets. This



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will allow monitoring of the fish and shellfish to be assessed in line with the survey, deploy and monitor scheme that the development will operate within.

### **Mooring Lines**

The mooring lines will be maintained and checked for debris with gear removal programmes put in place where necessary. Furthermore, load cells will be attached to the mooring devices and subsea cables. The load cells will alert KOWL if there is unexpected load on the devices which can then be examined. In addition, the monitoring of load on the moorings should provide useful data on whether marine mammals become entangled in the moorings, and the frequency of this, should it occur. This information will be reported as part of the survey, deploy and monitor regime.

### **10.3. Marine Mammal Observers**

Trained Marine Mammal Observers (MMO) will be present on the vessel(s), when appropriate, to advise on environmental best practice and to conduct searches for the presence of marine mammals prior to activities commencing. In addition, the use of Acoustic Deterrent Devices (ADD) (scarers) and / or Passive Acoustic Monitoring (PAM) to deter or detect marine mammals in the area will be considered when necessary and relevant to the species of concern. The use of acoustic warning equipment, if appropriately designed, could prove a valuable mitigation tool, however, any active acoustic warning also represents a new source of sound pollution, specifically intended to alter the behaviour of marine mammals. The use of such devices should therefore be considered carefully to decide whether or not it is appropriate to deliberately add extra-noise to the sea as a precautionary measure.


### **10.4. Bird Monitoring**

A monitoring plan will be developed and agreed with the regulatory bodies after consent has been granted and will be detailed in the PEMP once agreed. The Project offers a unique platform for seabird monitoring due to the triangular shape of the floating sub-structure that not only provides a large surface area for monitoring to take place, but it also provides sufficient space to allow a good viewpoint looking back onto the whole turbine. This would allow very accurate monitoring of bird strike occurrences, that is currently not available from traditional fixed WTG platforms. The size of the substructure provides many opportunities for different seabird monitoring techniques to be undertaken, including mounting a bird radar system that can remotely monitor birds passing through the turbine blades, or monitoring in person by ornithologists from the platform itself.

The Vessel Management Plan (VMP) contains a protocol that seeks to avoid / minimise maintenance movements during the last two weeks of July and first two weeks of August, as it is during this period that an influx of dependent auks with their adults is recorded. This would mitigate potential impacts on auks during this vulnerable period.

### **10.5. Noise Monitoring**

Noise monitoring will be undertaken during the initial year of operation to gather data on the operational noise characteristics of the semi-submersible floating offshore WTGs during a range of sea states and operational modes. This data will be gathered as part of the survey, deploy and monitor scheme. Data will be published as part of the wider development survey system that is currently planned for the WTGs and substructures that is currently being put forward for a large European level marine impact assessment of floating offshore windfarms.

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## 11. Waste management

### 11.1. Introduction

The requirement to set out the environmental management framework for the management of waste generated by the construction and operation of the Project arises from specific requirements in the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017):

*Section 10:*

*The Construction Method Statement (CMS) must include, but not be limited to:*

*d) a waste management plan for the construction phase of the Development;*

*Section 13:*

*d) a site waste management plan (dealing with all aspects of waste produced during the construction period), including details of contingency planning in the event of accidental release of materials which could cause harm to the environment. Wherever possible the waste hierarchy of reduce, re-use and recycle should be encouraged;*

The waste management framework for KOWL is set out in the Site Waste Management Plan, which sets out the following, with respect waste management from marine operations:

- regulatory framework relating to waste management;
- roles and responsibilities in relation to the management of waste;
- waste types that may be generated, including special waste; and
- the waste hierarchy (options to recycle, re-use and dispose) as well as the storage and segregation of waste offshore for subsequent onshore disposal.

KOWL will require that all contractors and sub-contractors for the construction and operation of the Project to:

- demonstrate waste management procedures for their activities providing details of expected waste streams and proposed procedures for waste management;
- meet the pertinent legislative requirements and obtain, where necessary, any licences in relation to waste management;
- ensure that all waste is placed in appropriately labelled containers;
- ensure that all waste is disposed of in accordance with the waste management framework; and
- ensure that the disposal of waste or refuse is transported by a suitably licensed waste carrier to a licensed waste facility.

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## 12. Invasive Species

### 12.1. Introduction

The requirement to set out the environmental management framework for the management of Invasive non-native species (INNS) potentially arising from the construction and operation of the Project arises from specific requirements in the Consent granted by the Scottish Ministers under Section 36 of the Electricity Act 1989 for the construction and operation of an offshore generating station, the Kincardine Floating Offshore Windfarm, approximately 15 km South East of Aberdeen (7th March 2017):

*Section 13:*

*c) management measures to prevent the introduction of invasive non-native marine species;*

*INNS and wildlife disease can have significant impacts on biodiversity and on human society and its economic interests. INNS are recognised as one of the major causes of global biodiversity loss in the [Millennium Ecosystem Assessment](#).*

This section addresses the control measures that will be put in place in order to mitigate the risk from the introduction of INNS and a framework for the management of INNS within this EMP.

### 12.2. Definition

An INNS (either animal or plant) is defined as an animal or plant (including fungus) that is outside its native range (where it is indigenous). An INNS is of a type that, if not under control, would likely to have a significant adverse impact on:

- Biodiversity;
- Other environmental interests; or
- Social and economic interests.

### 12.3. Legislation and Guidelines

Primary terrestrial legislation was introduced governing the control of INNS in Scotland by way of The Wildlife and Natural Environment (Scotland) Act 2011; this was introduced in an attempt to reduce the impact of non-native species and to fortify frontiers.

With regards to guidelines covering the control of marine borne INNS they are set out in Table 11-1 below.


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Table 12-1 Guidance Governing INNS


Guidance	Description	Control
International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM/CONF/RD/2/Rev.1) –adopted 13 <sup>th</sup> Feb 2004	Prevent, minimise and eliminate the transfer of harmful aquatic organisms and pathogens through control and management of ships' ballast water and sediments. All ships of 400 gross tonnes and above are required to have: <ul style="list-style-type: none"> <li>• an approved Ballast Water Management Plan;</li> <li>• a Ballast Water Record Book; and</li> <li>• have an International Ballast Water Management Certificate.</li> </ul>	Ballast Water Exchange Management Plan Ballast Water Record Book  International Ballast Water Certificate
Guidelines for the Control and Management of Ships Biofouling to Minimize the Transfer of Invasive Aquatic Species (Biofouling Guidelines) (Annex 26 resolution MEPC <sup>4</sup> .207(62)) 15 <sup>th</sup> July 2011	Provides recommendations on measures to minimize the risks associated with biofouling.	General guidance on minimising biofouling risks

#### 12.4. INNS Control Mechanism

The following control measures have been introduced within this EMP to manage and mitigate against INNS.

1. The Principal Contractor and all subcontractors (operating in the marine environment) will adhere to the relevant legislation and adopt best practice with regards to the control of INNS.
2. This EMP will detail the procedures adopted by the Principal Contractor and all sub-contractors to prevent the introduction of INNS.
3. Vessels of 400 gross tonnage (gt) and above to be in possession of a current International Anti-Fouling System (AFS) certificate.
4. Vessels of 24m or more in length (but less than 400 gt) to carry a declaration on AFS signed by the owner or authorised agent accompanied by appropriate documentation such as a paint receipt or contractor's invoice.
5. Ship hull inspections and biofouling management measures will be documented, as appropriate, by the appropriate sub-contractor and, if applicable, this will be recorded in the contractor's Planned Maintenance System or Common Marine Inspection Document (CMID).

<sup>4</sup> Marine Environment Protection Committee (MEPC)

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6. Submersible and immersible equipment such as ROVs will be subject to pre and post-use checks that will include checks for any of marine growth which must be removed prior to the deployment of equipment's.
7. Where applicable, all vessels will comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004 (BWM/CONF/36) convention, developed and adopted by the International Maritime Organisation (IMO)).
8. Where applicable, the management of ballast water will be undertaken in accordance with an approved Ballast Water and Sediments Management Plan and records of such management in a Ballast Water Record Book in accordance with the provisions of the Convention (Regulation B4):
  1. *A ship conducting Ballast Water exchange to meet the standard in regulation D-1 shall:*
    - .1 *whenever possible, conduct such Ballast Water exchange at least 200 nautical miles from the nearest land and in water at least 200 metres in depth, taking into account the Guidelines developed by the Organization;*
    - .2 *in cases where the ship is unable to conduct Ballast Water exchange in accordance with paragraph 1.1, such Ballast Water exchange shall be conducted taking into account the Guidelines described in paragraph 1.1 and as far from the nearest land as possible, and in all cases at least 50 nautical miles from the nearest land and in water at least 200 metres in depth.*
  2. *In sea areas where the distance from the nearest land or the depth does not meet the parameters described in paragraph 1.1 or 1.2, the port State may designate areas, in consultation with adjacent or other States, as appropriate, where a ship may conduct Ballast Water exchange, taking into account the Guidelines described in paragraph 1.1.*<sup>5</sup>

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<sup>5</sup> International Convention for the Control and Management of Ships' Ballast Water and Sediments 16<sup>th</sup> February 2004 (BWM/CONF/36)