

European Offshore Wind Deployment Centre Environmental Statement

Appendix 28.1: Draft EMP

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1 INTRODUCTION

- 1 This document provides the Environmental Management Plan (EMP) for Aberdeen Offshore Wind Farm Limited's (AOWFL) proposed European Offshore Wind Deployment Centre (EOWDC) for the three phases of offshore construction, operational and decommissioning.
- 2 Due to the nature of the proposed project (a test centre) and the stage at which this document has been produced it has not been possible to fully address every element. For the purposes of this document a list of likely outline method statements has been produced and an example outline provided. As further information is made available so these documents will be updated.

1.1 Aim of the Environmental Management Plan (EMP)

- 3 The aim of the EMP is to ensure that all aspects of environmental management are carried out in accordance with relevant legislation and best practice guidelines.
- 4 This is to be achieved by taking a fully integrated approach to project management through the complete cycle of preparation, planning, action, monitoring, checking and review.
- 5 The EMP will be implemented prior to construction and in consultation with statutory authorities, with a suite of complementary management plans corresponding to different aspects of the construction activity. The documents will be tailored specifically to ensure compliance with the consent conditions for the project and current environmental best practice. The following documents would be incorporated into a final EMP:
 - Monitoring Protocol (as per statutory consents)
 - Incident Reporting and Non Conformance Procedure
 - Emergency Response Plan
 - Collision Risk Management Plan
 - Marine Pollution Contingency Plan
 - Dropped Objects and Materials Recovery Plan
 - Archaeology Plan
 - Noise, Dust and Vibration Management Plan
 - Waste Management Plan
- 6 The final EMP would be in place well before construction begins to take full account of all pre-construction monitoring requirements.

1.2 Structure of this Document

- 7 This EMP is divided in to three sections:
 - a. **Part 1** provides background and supporting information for the EMP.
 - b. **Part 2** details in a series of summary briefing notes, the environmental impacts identified to date and the associated commitments made with

regard to environmental management, impact mitigation measures and consent conditions, all of which AOWFL is obliged to carry out. These commitments derive from the EOWDC Environmental Statement.

c. **Part 3** provides an introduction to outline construction method statements.

- 8 It should be noted that further commitments could be contained in any consent granted to the project. At such time these commitments would be fully incorporated in to the EMP.

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PART 1

2 POLICY

- 9 Suitable and effective safety, health and environmental management would be in place for the duration of the project.
- 10 A health and safety plan would be prepared covering all aspects relating to health and safety.
- 11 A manager would be appointed responsible for the overall safety, health and environmental policy. It would be the joint responsibility of all employees to ensure this policy is implemented via collective and individual responsibilities set out within the policy document.

3 PLANNING REQUIREMENTS

3.1 Environmental Aspects

- 12 An environmental aspect is any element of an activity that could interact with the environment and that may have the potential to have an environmental impact.
- 13 The following documents were used to formulate the draft EMP and contain information on potential environmental impacts and environmental aspects of the EOWDC proposal:
- European Offshore Wind Development Centre Environmental Statement of which this document forms Appendix of Chapter 28
 - aspects identified in good practice
 - Marine Scotland Guidance
- 14 This draft EMP focuses upon the key offshore environmental aspects with detail provided in outline briefing notes.
- 15 This information may be supplemented as additional studies may be undertaken throughout the phases of the development and would be taken into account as appropriate.

3.2 Legal and Other Requirements

- 16 It is important that all elements and activities associated with the development in all its phases comply with all relevant environmental legislation.
- 17 Lead responsibility for delivering compliance with relevant environmental obligations and legal statutes is set out below.
- before issue of construction contracts: The applicant development team
 - construction: Construction Contractor
 - operation: Operations Contractor
 - decommissioning: Decommissioning Contractor
- 18 Responsibility to identify and adhere to specific and current environmental legal requirements will lie with the main contractor.

3.3 Objectives, Targets and Programme

- 19 At the heart of the EOWDC project is the interaction between a research and potential test and training centre with a small, highly innovative, commercially operated and highly instrumented and monitored offshore wind farm. The site will offer potential opportunities for commercial R&D, testing and dissemination including long-term environmental monitoring and improvement. This future monitoring should play a key role in the development of the EMP.
- 20 Long-term improvement goals would be identified for the project. These would be compatible with the policy for the development and consider the relevant environmental impacts.
- 21 The applicant is committed to the following environmental objectives:
- exemplary performance in all aspects of environmental management
 - a proactive attitude to environmental protection
 - no prosecutions
 - monitoring
 - collision risk for key species less than predicted
 - a target of no reportable environmental incidents at any stage in the project
 - minimum ornithological and ecological disturbance commensurate with building an operational wind farm
 - regular reporting and communication on environmental performance with statutory bodies and the local community
- 22 To support the long-term goals, a series of environmental targets, focusing upon the short-term actions would be developed. These would be supported by a programme that sets out how the targets are to be achieved (eg resources, specific actions and timescales). Action may take the form of the following:
- development of improvement strategies in particular areas, one-off actions, such as establishment of an environmental component to the website, introduction of technological solutions to resolve/improve environmental issues
 - on-going actions that could be tracked over time, eg tonnage of waste disposed (or recycled)
- 23 The long-term objectives, the short-term targets and progress against these would be reviewed on a regular basis. This would form part of the management review and meetings with the independent Environmental Management Committee.
- 24 The review would continue through all phases of the development with the objectives, targets and management programme reflecting the key issues for the activities being undertaken and the lead responsibilities.

4 IMPLEMENTATION

4.1 Resources, Roles, Responsibility and Authority

- 25 The overall project management team would have the responsibility of delivering the EMP. In this way environmental management would be fully integrated into the running of the project. This team's roles would include:
- review of all method statements and review against all management plans and checking that work is carried out accordingly
 - ensuring monitoring in accordance with all management plans is carried out and reviewed; and
 - reporting as required by the management plans
- 26 In order to implement the management plans identified above and to ensure the monitoring procedures outlined in the briefing notes are implemented, the project management team would employ a number of skilled experts during the construction, operation and decommissioning periods. This could include:
- ornithologist
 - marine mammal observer
 - marine ecologist
 - fisheries expert
 - archaeologist

4.1.1 Incorporation of EMP into Contracts

- 27 The EMP would be incorporated into all contracts. Incentives and/ or penalties would be introduced where appropriate to ensure that the EMP is adhered to throughout the development process.

4.1.2 Day to Day Responsibility

- 28 During construction, operation and decommissioning, a client representative would be on-site or on-call and able to respond to any incident. They would have the authority to halt or modify work in response to environmental concerns and the responsibility to ensure that all monitoring and checks are carried out in accordance to the relevant schedules. They would also have the necessary training and authority to direct the emergency response team to deal with environmental incidents.

4.2 Competence, Training and Awareness

4.2.1 Evaluation of Contractors and Subcontractors

- 29 When contractors are assessed consideration would be given to organisational environmental management systems and ability to implement the EMP.

4.2.2 Training

- 30 Suitably trained staff would be employed to manage this EMP and fulfil the roles identified in this document. Any contractors working on studies would be selected taking into account their environmental awareness and where appropriate their experience in the implementation of EMPs.
- 31 For construction, all senior project management staff would undergo environmental awareness training, such as the IOSH five day course. Specific members of the team would have appropriate professional environmental training as would consultants and advisors.
- 32 The emergency response team would be trained to carry out their work (in the unlikely event of an incident happening) with high environmental awareness to minimise the impact of any response.

4.2.3 Site Induction

- 33 Environmental awareness would feature prominently in the induction for all workers and site visitors.

4.3 Communication

4.3.1 Contractors and Subcontractors

- 34 During pre-construction surveys and then during construction, operation and decommissioning, there would be regular project meetings, including a review of environmental issues and current sensitivities.
- 35 Part of the review of all method statements would include an environmental audit.

4.3.2 Workforce

- 36 Information would also be provided to the workforce via Construction Design and Management Pre-Construction Information, the workforce would also be informed of specific areas of sensitivity and generally reminded of the sensitivity of the site through toolbox talks, posters and in method statements. They would be encouraged to report any concerns on environmental issues immediately to the project management team. All issues and actions taken would be reviewed by the project management team as a minimum on a weekly basis.

4.3.3 Meetings Programme

- 37 Health, safety and environment would be on the agenda of every regular project meeting.

4.4 Documentation

- 38 During construction, the documentation would include up to date records of the site and all environmental issues so that the project management team has current information available.
- 39 The 'documents' available could include:
- GIS Constraints Register
 - design risk register
 - all method statements
 - all briefing notes
 - all risk assessments
 - commitments register
- 40 All records would be kept and maintained during the operation phase so that management plans could be adapted in response to changing circumstances and so that they are available for decommissioning.

4.5 Control of Documents

- 41 A document management system would be in place prior to construction. All method statements, risk assessments, audits, monitoring records, reviews and meeting minutes would be recorded in this system.

4.6 Operational Control

- 42 Before construction, records would be maintained of all activities and assessments (risk assessments, pre-construction surveys). It would be ensured that they are properly controlled and the results are passed on to the construction and operation teams later.
- 43 Day to day control of the project during construction would involve:
- constraints register
 - working time
 - time of year working
 - working areas
 - project planning
 - preparation and monitoring of overall plan – six months, one year, total project
 - preparation of detailed plan – one month ahead
 - checks against constraints register
 - method statements
 - risk assessments
 - commitments register

5 CHECKING

5.1 Monitoring and Measurement

5.1.1 Pre-construction

- 44 All surveys would be monitored for compliance with EOWDC specifications and appropriate management plans.

5.1.2 During Construction

- 45 The following monitoring checks are examples of checks that could be carried out during construction:

- water quality
- pollution control measures
- noise (in air/ sub-acoustic)
- traffic (vessels)
- scour protection

5.1.3 During Operation

- 46 The following monitoring checks are examples of checks that could be carried out during operation:

- water quality
- pollution control measures
- noise (in air/ sub-acoustic)
- traffic (vessels)
- scour protection

5.1.4 Monitoring Plan Timetable

- 47 Monitoring plans will be agreed within a specific timetable as agreed with all relevant parties.

5.2 Evaluation of Compliance

- 48 Full records of all measurements, shipments and transfers would be kept to demonstrate compliance with licenses and permits. The recording systems would be prepared in advance and regularly audited and reviewed.

5.3 Non-conformity, Corrective Actions and Preventative Action

- 49 All non-conformity would be investigated and reported to the project management team if necessary. All corrective actions would be recorded with dates for action. An overall register would be kept and regularly reviewed by the project management team and shared with other parent

projects for trend spotting. It is possible that incidents would also be required by law to be reported to industry.

5.4 Control of Records

- 50 Records would be controlled through the document management system and the project management team would have responsibility to ensure this is done.

5.5 Internal Audit

- 51 Regular internal audits would be carried out in accordance with a schedule agreed with the management team.

6 MANAGEMENT REVIEW

6.1 Project Team Review

6.1.1 Regular Review of EMP

- 52 This document would be reviewed regularly.

6.1.2 Preparation of Reports

- 53 The relevant project management team would be responsible for the preparation and presentation of reports to the relevant stakeholders.

PART 2

7 OUTLINE BRIEFING NOTES

- 54 This section of the draft EMP contains outline briefing notes which are relevant to all phases of the EOWDC (ie construction, operation, maintenance and decommissioning). The purpose of the briefing notes is to provide information about the environmental aspects and set out the measures necessary to reduce the environmental impact of the development during the construction stage. Outline briefing notes have been prepared for the following areas:
- Outline Briefing Note 1: General Obligations
 - Outline Briefing Note 2: Ornithology
 - Outline Briefing Note 3: Marine Mammals
 - Outline Briefing Note 4: Marine Ecology
 - Outline Briefing Note 5: In-Air Noise
 - Outline Briefing Note 6: Offshore Archaeology
 - Outline Briefing Note 7: Coastal Processes
 - Outline Briefing Note 8: Commercial Fisheries
 - Outline Briefing Note 9: Salmon and Sea Trout
 - Outline Briefing Note 10: Commercial Shipping and Navigation
- 55 These outline briefing notes are intended for use upon consenting of the proposed EOWDC. During the initial post consent period they would be refined and finalised. During the pre-construction phase they outline the pre-construction monitoring and surveys required, and during the construction phase they outline procedures to be followed.
- 56 Compliance with the measures outlined in the resultant briefing notes and the method statements supporting them is mandatory via contractual obligation.
- 57 The outline briefing notes are intended for use by project team members and contractors responsible for construction.
- 58 In order to ensure compliance with many of the measures set out in these briefing notes, a series of outline construction method statements will be prepared to support this draft EMP once further information is available. For the purposes of this document an introduction to outline method statements is provided.

OUTLINE BRIEFING NOTE 1: GENERAL OBLIGATIONS**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

Any general obligations stated within a Section 36 consent (under the Electricity Act 1989 (as amended)) or Marine Licence (under the Marine (Scotland) Act 2010) that are not applicable to other briefing notes will be captured within this briefing note.

2. Mandatory Actions

Obligations listed within the European Offshore Wind Deployment Centre Environmental Statement 2011 are listed below

Table 1.1 Obligations out lined in the proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction	Project Description	Chapter 3	Health and Safety/ Navigation	The wind farm would be designed and constructed to satisfy the requirements of the Civil Aviation Authority (CAA) and the Northern Lighthouse Board (NLB).
Construction	Project Description	Chapter 3	Health and Safety/ Navigation	The construction area will be depicted on Admiralty Charts by the UK Hydrographic Office. Information pertaining to construction will be disseminated through the Notice to Mariners procedure together with regular communication with local and regional stakeholders.

Construction	Project Description	Chapter 3		The construction area and incomplete structures would be lit and marked in accordance with the protocol recommended by Trinity House Lighthouse Service.
Construction	Project Description	Chapter 3	General obligation	Cables would be buried in the seabed to a sufficient depth, which will be determined by a burial protection study but would be to at least 0.6 m.
Construction	Project Description	Chapter 3	Safety	Advisory or applied for exclusion zones would be in place.
Operation	Project Description	Chapter 3	Visual Impact	Colour scheme of the wind turbine tower, nacelle and blades is likely to be light grey RAL 7035, white RAL 9010 or equivalent.
Operation	Project Description	Chapter 3	Health and Safety	<p>All turbines would be designed to allow for the following safety features:</p> <p>a) yawing of the wind turbines shall be possible via the remote control</p> <p>b) remotely park the wind turbines in an oriented stop, to allow for heli-hoist operation</p>

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 1.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

None at the time of writing.

4. Further Information

None at the time of writing.

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OUTLINE BRIEFING NOTE 2: ORNITHOLOGY**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

A total of 63 species of birds were recorded during ornithological surveys. Thirty seven of these species were either a qualifying species for a Special Protection Area or were recorded in numbers that could be of concern should there be an impact from the proposed EOWDC development.

For the majority of species the impact from the proposed EOWDC is deemed to be negligible. However, for some species the impact is deemed to be minor or moderate (on a scale of negligible, minor, moderate and major).

2. Mandatory Actions

Obligations listed within the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 2.1 Obligations out lined in the proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
All Phases	Ornithology Baseline and EIA	Chapter 10	Numerous	Required mitigation and monitoring to be agreed.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 2.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

A detailed monitoring programme aimed at specific issues or concerns would be developed with the Regulator and advisors should consent be granted.

4. Further Information

None at the time of writing.

OUTLINE BRIEFING NOTE 3: MARINE MAMMALS

Contents:

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

A number of marine mammals make use of Aberdeen Bay throughout the year; the more commonly sighted species are the harbour porpoise, bottlenose dolphin and grey and common seal. Potential impacts have been assessed as being of negligible to minor significance. However, in some instances behavioural disturbance and displacement during possible construction activities is considered to be of moderate to potentially major significance.

A number of mitigation strategies have been suggested in order to minimize any impacts upon marine mammals.

2. Mandatory Actions

Obligations listed within the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 3.1 Obligations out lined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
All	Marine Mammals EIA	Chapter 12	Underwater noise causing physiological damage/ behavioural disturbance/ interference of sound produced by marine mammals	A Marine Mammal Protection Plan (MMPP) would be developed.

Any obligations outlined in the Section 36 Consent, Marine Licence or European Protected Species Licence would be listed below.

Table 3.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

A detailed monitoring programme aimed at specific issues or concerns would be developed as part of the Marine Mammal Protection Plan.

4. Further Information

None at the time of writing.

OUTLINE BRIEFING NOTE 4: MARINE ECOLOGY**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

An impact assessment has been undertaken for the European Offshore Wind Development Centre looking at the development's potential effects on the marine ecology within which the proposed EOWDC is located.

The majority of the site is covered by fine well sorted sands and fine muddy sands. The most common species at the site are worms and shellfish. On the sea bed brittle stars, brown shrimp and swimming crabs are common whilst fish species in the area are predominantly made up of plaice, dab, hooknose and whiting.

Impacts to marine ecology have been assessed as being negligible to minor with the exception of the worst case impact from construction noise upon fish which is considered to be of minor to possibly moderate significance.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 4.1 Obligations out lined in ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction	Marine Ecology EIA	Chapter 9	Habitat Loss	Good construction practices would be discussed with contractors and could include backfilling trenches (natural backfilling of the subsea trenches may take place) to just below the adjacent beach surface level to allow natural accretion to fill the upper surface.
Construction	Marine Ecology EIA	Chapter 9	Underwater Noise and Vibration on Fish and Shellfish	Soft-start procedure.

Operation	Marine Ecology EIA	Chapter 9	Impacts to fish and benthos resulting from Electromagnetic Fields.	Industry standards and best practice arising out of ongoing research work would be adopted for the EOWDC development where practicable.
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Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 4.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

Monitoring will be agreed with the relevant statutory authorities.

4. Further Information

None at the time of writing.

OUTLINE BRIEFING NOTE 5: IN-AIR NOISE

Contents:

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

Background noise measurements and wind speeds were measured on site over a period of 3 weeks. Consultation was carried out with the local authorities and key guidance documents were also used for the assessment.

The noise impact from the construction, operation and decommissioning of the proposed EOWDC on residential properties was assessed using suggested national limits (ETSU guidelines) as well as more stringent local noise limits.

The operational noise was assessed as being of negligible significance. For the noise associated with the construction of the proposed EOWDC it is anticipated that the impact during the day will be of minor significance. For night time hours mitigation suggests that certain construction activities are not carried out during this time, this resulting in a negligible significance.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 5.1 Obligations outlined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
All	In-Air Noise EIA	Chapter 24	Noise impacts to local residents	Adherence to noise levels set by ETSU.
Construction	In-Air Noise EIA	Chapter 24	Sleep disturbance during piling at night	No monopiles of 8.5 m diameter to be installed at night.
Construction	In-Air Noise EIA	Chapter 24	Stress, annoyance during piling daytime	Screens and good information policy.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 5.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

Monitoring will be required to determine real sound levels and check efficiency of potential mitigation measures.

4. Further Information

None at the time of writing.

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OUTLINE BRIEFING NOTE 6: OFFSHORE ARCHAEOLOGY

Contents:

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

The archaeological geophysical review identified several anomalies which may be man-made or natural features. Of these a potential impact has been predicted for one unidentified wreck which lies in close proximity to Wind Turbine 8.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 6.1 Obligations outlined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction	Offshore Archaeology EIA	Chapter 18	Damage to post-glacial submerged landscape features/ Known wreck sites	Avoidance, Reporting protocol.
Construction/ Operation/ Decommissioning	Offshore Archaeology EIA	Chapter 18	Damage to known wreck sites	Avoidance, Research, Reporting protocol.
Construction	Offshore Archaeology EIA	Chapter 18	Damage to prehistoric sites and finds	Reporting protocol.
Construction	Offshore Archaeology EIA	Chapter 18	Damage to unknown wreck sites	Reporting protocol.
Construction	Offshore Archaeology EIA	Chapter 18	Damage to unknown aircraft crash sites	Reporting protocol.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 6.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

Monitoring could include:

Geophysical survey/ Remotely Operated Underwater Vehicle/ Finds Reporting Protocol

4. Further Information

None at the time of writing.

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OUTLINE BRIEFING NOTE 7: COASTAL PROCESSES

Contents:

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

The coastal processes assessment included consideration of the potential changes to geology, waves, currents, sediment, seabed features and water quality.

It is shown that the majority of potential impacts can be considered of negligible significance. The exception is that of scour which, in the absence of scour protection measures, can be considered as minor significance.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 7.1 Obligations out lined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Operational	Coastal Processes EIA	Chapter 8	Scour around foundation base (and resulting habitat loss)	As a matter of good practice, the project's detailed design would consider whether scour protection can reasonably be provided to further reduce this impact.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 7.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

It is not considered essential to include scour monitoring as an integral aspect of post-construction monitoring although it could be considered as an additional aspect.

Appropriate research studies will be implemented if novel techniques are used for cable installation where there is an absence of any previous research.

4. Further Information

None at the time of writing.

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OUTLINE BRIEFING NOTE 8: COMMERCIAL FISHERIES**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

Commercial fishing activities in the area surrounding the proposed EOWDC are considered to be at relatively low levels. Potting for crab and lobsters; trawling for whitefish; and dredging for scallops account for the majority of the activity.

Given the limited number of turbines proposed, the small area of the site and the low level of fishing activity within it, the overall impacts on commercial fishing are expected to be negligible, although for a small number of local vessels, the potential impacts may be of minor significance.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 8.1 Obligations out lined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction and decommissioning	Commercial Fisheries EIA	Chapter 21	Adverse impacts on commercially exploited species	Use of appropriate engineering techniques, eg soft start.
Construction and decommissioning	Commercial Fisheries EIA	Chapter 21	Complete loss of, or restricted access to traditional fishing grounds	Effective, on-going liaison.
Construction, operational and, decommissioning	Commercial Fisheries EIA	Chapter 21	Safety issues for fishing vessels	Implementation and adherence to standard offshore safety procedures. Involvement of the SFF for liaison and information distribution.
Construction, operational and decommissioning	Commercial Fisheries EIA	Chapter 21	Interference to fishing activities	Construction/ maintenance vessels using existing shipping routes. On-going liaison informing skippers of construction/

				maintenance vessels schedules and routes.
Construction and decommissioning	Commercial Fisheries EIA	Chapter 21	Increased steaming times to fishing grounds	Transitory, short term exclusion areas around construction activities within the site. Limited numbers of potentially impacted vessels.
Construction and decommissioning	Commercial Fisheries EIA	Chapter 21	Presence of seabed obstacles and obstructions	Contractors are required by contract to report and recover any accidentally dropped objects. Seabed obstructions and spoils identified during post-construction monitoring, which might represent a hazard to fishing, would be rectified. Any scour protection rock placement would be adjacent to wind turbine bases.
Operational	Commercial Fisheries EIA	Chapter 21	Damage to fishing gear/vessels from exposed cables	Cable burial to at least 0.6 m depth.
Operational	Commercial Fisheries EIA	Chapter 21	Damage to fishing gear/vessels from exposed cables	Implementation and adherence to standard offshore safety procedures.
Operational	Commercial Fisheries EIA	Chapter 21	Damage to fishing gear/vessels from exposed cables	Cable route surveys.
Operational	Commercial Fisheries EIA	Chapter 21	Damage to fishing gear/vessels from exposed cables	Temporary exclusion zones until issues are rectified.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 8.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

None at the time of writing.

4. Further Information

None at the time of writing.

OUTLINE BRIEFING NOTE 9: SALMON AND SEA TROUT**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

Scottish salmon populations are recognised as being of national and international importance. In addition to their ecological value, salmon and sea trout are species of importance from a socioeconomic perspective.

The majority of impacts have been assessed as having negligible impact although it is possible that construction activities could have a negligible to minor impact following mitigation. Mitigation is likely to include specific scheduling of construction periods so that peak times of salmon entering or exiting local rivers are not affected. Further consultation will be held with statutory consultees and salmon fisheries boards when construction methods and timing are considered further.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below.

Table 9.1 Obligations outlined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction	Salmon and Sea Trout EIA	Chapter 22	Noise, Direct Impact	Soft-start piling.
Construction	Salmon and Sea Trout EIA	Chapter 22	Noise, Disturbance/ Delay/Barrier to Migration	Mitigation to be agreed if required.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 9.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

Appropriate and relevant monitoring will be assessed through discussion with relevant stakeholders and regulators.

4. Further Information

None at the time of writing.

OUTLINE BRIEFING NOTE 10: COMMERCIAL SHIPPING AND NAVIGATION**Contents:**

1. Background and Context
2. Mandatory Actions
3. Monitoring Survey Requirements
4. Further Information

1. Background and Context

A Navigational Risk Assessment (NRA) has been carried out for the proposed EOWDC. A number of potential impacts were identified, the majority of these are considered to be negligible or to cause no impact. Compared to the marine accident risk levels in the UK, the increase in risk to both people and the environment caused by the proposed EOWDC is low.

Extensive consultation with Aberdeen Harbour Board (AHB) and key consultees has resulted in a number of changes being made to the site layout. Recent consultation has indicated that the current site is acceptable and all hazards are identified to be low.

2. Mandatory Actions

Obligations from the European Offshore Wind Deployment Centre Environmental Statement 2010 are listed below. Table 12.1 below summarises the main risk mitigation measures identified within the NRA, it should be noted that discussions on other measures will continue both pre- and post-construction and during the life of the project with the MCA, Aberdeen Harbour Board and other relevant stakeholders.

Table 10.1 Obligations outlined in proposed EOWDC ES

Phase	Document	Chapter	Potential Impact	Obligation
Construction	Project Description	Chapter 3	Health and Safety/ Navigation	The EOWDC would be designed and constructed to satisfy the requirements of the Civil Aviation Authority (CAA) and the Northern Lighthouse Board (NLB).
Construction	Project Description	Chapter 3	Safety and Navigation	The construction area will be depicted on Admiralty Charts by the UK Hydrographic Office. Information pertaining to construction would be disseminated through the Notice to Mariners procedure together with regular communication with local and regional stakeholders.

Construction	Project Description	Chapter 3		The construction area and incomplete structures would be lit and marked in accordance with the protocol recommended by THLS.
All	Navigational Risk Assessment	Appendix 15.1	Safety and Navigation	Marked on Admiralty Charts: The EOWDC would be charted by the UK Hydrographic Office using the magenta wind turbine tower chart symbol found in publication "NP 5011 - Symbols and Abbreviations used in Admiralty Charts". Submarine cables associated with the project will also be charted on the appropriate scale charts.
All	Navigational Risk Assessment	Appendix 15.1		Information Circulation: Appropriate liaison to ensure information on the wind farm and special activities is circulated in Notices to Mariners, Navigation Information Broadcasts and other appropriate media.
All	Navigational Risk Assessment	Appendix 15.1		Marking and Lighting: Structures to be marked and lit in-line with NLB and IALA guidance.
All	Navigational Risk Assessment	Appendix 15.1		Wind Turbine Air Draught: Lowest point of rotor sweep at least 22 m above Mean High Water Springs as per RYA and MCA recommendations.
All	Navigational Risk Assessment	Appendix 15.1		Cable Protection: Cables to be buried to suitable depth based on cable protection study taking into account fishing and anchoring practices in Aberdeen Bay (but to at least 0.6 m). Periodic inspection of the cable to ensure it remains buried. Positions of cable routes notified to Kingfisher Information Services (KIS) for inclusion in cable awareness charts and plotters for the fishing industry.
All	Navigational Risk Assessment	Appendix 15.1		Compliance with MCA's Marine Guidance Notice (MGN) 371 including Annex 5: Annex 5 specifies "Standards and procedures for generator shutdown and other operational requirements in the event of a

				search and rescue, counter pollution or salvage incident in or around an Offshore Renewable Energy Installation.”
All	Navigational Risk Assessment	Appendix 15.1		Formulation of an Emergency Response Cooperation Plan (ERCoP) as per MCA Template: AOWFL will use the draft template created by the MCA to formulate an emergency response plan and site Safety Management Systems, in consultation with the MCA.

Any obligations outlined in the Section 36 Consent and Marine Licence would be listed below.

Table 10.2 Obligations outlined in Section 36 Consent and/ or Marine Licence

Phase	Document	Chapter	Potential Impact	Obligation

3. Monitoring / Survey Requirements

The Navigational Risk Assessment will be reviewed as required. The health and safety plan will include an incident/accident reporting system which will allow incidents and near misses to be recorded and reviewed to monitor the effectiveness of the risk control measures in place at the site. In addition to this any information gleaned from near misses/accidents at other offshore wind farm sites will be considered with respect to the control measures applied at the proposed EOWDC.

Whilst no radar monitoring of vessel movements has been proposed for the site, Automatic Identification System monitoring is being considered which can be used to monitor and record the movements of vessels around the proposed EOWDC site and associated export cables to shore, as well as company vessels working at the site.

4. Further Information

None at the time of writing.

PART 3

8 OUTLINE CONSTRUCTION METHOD STATEMENTS

- 8.1 What are Construction Method Statements
- 8.2 Outline Construction Method Statements
- 8.3 Other Outline Method Statements

8.1 What are Construction Method Statements

Construction method statements are considered an important part of engineering best practice by making sure that safety, timetable, environmental conditions and commitments for mitigation are integrated into the construction process. Information on construction method statement procedures normally forms part of the tender process and often acts to distinguish competitive bids (that is, demonstration of an understanding of the environmental objectives becomes a criterion in tender evaluation). In this regard, it is normal practice for the environmental practitioner to set the objectives, but for the design and construction engineers/contractors to meet those objectives in the most efficient and cost-effective manner.

It is considered impracticable and contrary to the objectives of continuous improvement to produce detailed construction method statements prior to consent approval.

8.2 Outline Construction Method Statements

Outline construction method statements would be included in the tender package to inform construction contractors and their engineers as to the requirements of the tender, and to enable them to develop the construction method statements.

Accordingly, the method statements do not provide:

- detailed final design
- detailed site specific construction methodologies

The method statements will be produced to recognise that the different construction activities would require different construction methods, all of which may vary due to the relative site sensitivities. Examples of likely outline construction method statements are as follows:

- OCMS – Introduction
- OCMS 01 - Temporary Compound
- OCMS 02 - Cable Installation
- OCMS 03 - Waste Management
- OCMS 04 - Wind Turbine Construction
- OCMS 05 – Traffic (Vessel) Management
- OCMS 06 – Scour Protection
- OCMS 07 – Foundation Installation
- OCMS 08 – Commissioning
- OCMS 09 – Connection
- OCMS 10 – Pre-Installation Survey

- OCMS 11 – Post-Installation Survey
- OCMS 12 – Landfall Construction

8.3 Other Outline Method Statements

Other outline method statements would include:

- Decommissioning

It is unlikely that operations and maintenance would have specific method statements. An Operations and Maintenance Plan would be in place to ensure adherence to environmental, health and safety policies and legislation.

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