Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

Outline Project Environmental Management Plan (Revision C) (Clean)

Revision C
Deadline 3
May 2023
Document Reference: 9.10
APFP Regulation: 5(2)(q)

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Title**:** **Sheringham Shoal and Dudgeon Offshore Wind Farm Extensions** **DCO Application** **Outline Project Environmental Management Plan (Revision C)**		
PINS document no.: 9.10		
Document no.: C282-RH-Z-GA-00122		
Date:	Classification	
May 2023	**Final**	
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Approved by: **Tom Morris, Equinor**	Date: May 2023	

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Glossary of Acronyms

CoCP	Code of Construction Practice
CRA	Chemical Risk Assessment
CSCB	Cromer Shoal Chalk Beds
CSCB	Cromer Shoal Chalk Beds
CSIMP	Cable Specification and Installation Management Plan
DCO	Development Consent Order
DEP	Dudgeon Extension Project
DML	Deemed Marine Licence
DOW	Dudgeon Offshore Wind Farm
EMF	Electromagnetic Fields
EMS	Environmental Management System
EPCI	Engineering, Procurement, Construction and Installation
EPS	European Protected Species
ES	Environmental Statement
FLO	Fisheries Liaison Officer
HE	Historic England
HSE	Health Safety and Environment
IMCA	International Marine Contractors Association
IMO	International Maritime Organisation
INNS	Invasive Non Native Species
IPMP	In Principal Monitoring Plan
Km	Kilometre
MCA	Maritime Coastguard Agency
MCZ	Marine Conservation Zone
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
MPCP	Marine Pollution Contingency Plan
NtM	Notice to Mariners
OPEMP	Outline Project Environmental Management Plan
OSP	Offshore Substation Platform
PEMP	Project Environmental Management Plan
ROV	Remotely Operated Vehicle

SAC	Special Area of Conservation
SEP	Sheringham Extension Project
SIP	Site Integrity Plan
SNCB	Statutory Nature Conservation Bodies
SOPEP	Shipboard Oil Pollution Emergency Response Plan
SOW	Sheringham Shoal Offshore Wind Farm
UK	United Kingdom
WSI	Written Scheme of Investigation

Glossary of Terms

Dudgeon Offshore Wind Farm Extension Project (DEP)	The Dudgeon Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.
DEP offshore site	The Dudgeon Offshore Wind Farm Extension consisting of the DEP wind farm site, interlink cable corridors and offshore export cable corridor (up to mean high water springs).
DEP onshore site	The Dudgeon Offshore Wind Farm Extension onshore area consisting of the DEP onshore substation site, onshore cable corridor, construction compounds, temporary working areas and onshore landfall area.
DEP North array area	The wind farm site area of the DEP offshore site located to the north of the existing Dudgeon Offshore Wind Farm
DEP South array area	The wind farm site area of the DEP offshore site located to the south of the existing Dudgeon Offshore Wind Farm
DEP wind farm site	The offshore area of DEP within which wind turbines, infield cables and offshore substation platform/s will be located and the adjacent Offshore Temporary Works Area. This is also the collective term for the DEP North and South array areas.
Infield cables	Cables which link the wind turbine generators to the offshore substation platform(s).
Interlink cables	Cables linking two separate project areas. This can be cables linking: 1) DEP South array area and DEP North array area 2) DEP South array area and SEP 3) DEP North array area and SEP 1 is relevant if DEP is constructed in isolation or first in a phased development. 2 and 3 are relevant where both SEP and DEP are built.
Interlink cable corridor	This is the area which will contain the interlink cables between offshore substation platform/s and the adjacent Offshore Temporary Works Area.

Landfall	The point at the coastline at which the offshore export cables are brought onshore, connecting to the onshore cables at the transition joint bay above mean high water.
Offshore cable corridors	This is the area which will contain the offshore export cables or interlink cables, including the adjacent Offshore Temporary Works Area.
Offshore export cable corridor	This is the area which will contain the offshore export cables between offshore substation platform/s and landfall, including the adjacent Offshore Temporary Works Area.
Offshore export cables	The cables which would bring electricity from the offshore substation platform(s) to the landfall. 220 – 230kV.
Offshore substation platform (OSP)	A fixed structure located within the wind farm site/s, containing electrical equipment to aggregate the power from the wind turbine generators and convert it into a more suitable form for export to shore.
Order Limits	The area subject to the application for development consent, including all permanent and temporary works for SEP and DEP.
Project Team	A multi-disciplinary team consisting of individuals from Equinor who are ultimately responsible for the construction, operation and maintenance and decommissioning phases of SEP and DEP, who are supported by a wider group of contractors and sub-contractors.
Sheringham Shoal Offshore Wind Farm Extension Project (SEP)	The Sheringham Shoal Offshore Wind Farm Extension onshore and offshore sites including all onshore and offshore infrastructure.
SEP offshore site	Sheringham Shoal Offshore Wind Farm Extension consisting of the SEP wind farm site and offshore export cable corridor (up to mean high water springs).
SEP onshore site	The Sheringham Shoal Wind Farm Extension onshore area consisting of the SEP onshore substation site, onshore cable corridor, construction compounds, temporary working areas and onshore landfall area.
SEP wind farm site	The offshore area of SEP within which wind turbines, infield cables and offshore substation platform/s will be located and the adjacent Offshore Temporary Works Area.

The Applicant	Equinor New Energy Limited. As the owners of SEP and DEP, Scira Extension Limited and Dudgeon Extension Limited are the named undertakers that have the benefit of the DCO. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of SEL and DEL as the undertakers of SEP and DEP.

1 Introduction

1.1 Revision C Updates at Deadline 3

1. **Section 5.1** has been updated to specify that the best practice protocol for minimising disturbance to red-throated diver applies to the construction phase as well as the operation and maintenance phase. This is in accordance with the Project Environmental Management Plan (PEMP) Condition 13(d) of Schedules 10 and 11 and Condition 12(d) of Schedules 12 and 13 of **Draft DCO (Revision F)** [document reference 3.1]. In addition, the protocol wording has been updated to align with that provided by Natural England to Hornsea Project Four[1].

1.2 Revision B Updates at Deadline 1

2. Following comments received from Natural England within Appendix D Marine Mammals of their Relevant Representation [RR-063], Section 5.3 was updated to incorporate a Vessel Good Practice and Code of Conduct to Avoid Marine Mammal Vessel Collisions which was originally contained within Annex I of the **Draft Marine Mammal Mitigation Protocol (MMMP)** [APP-288]. The **Draft MMMP (Revision B)** [document reference 9.4] was updated to remove the vessel good practice and code of conduct to avoid marine mammal vessel collisions. This ensures that the measures are secured in the event that piled-foundation options are not taken forward, since the MMMP is only required in that instance.

1.3 Project Background

3. The Sheringham Shoal Offshore Wind Farm Extension Project (SEP) and Dudgeon Offshore Wind Farm Extension Project (DEP) are proposed extensions to the existing Sheringham Shoal Offshore Wind Farm (SOW) and Dudgeon Offshore Wind Farm (DOW). When operational, SEP and DEP would have the potential to generate renewable power for approximately 785,000 United Kingdom (UK) homes from up to 23 wind turbines at SEP and up to 30 wind turbines at DEP. The Applicant is seeking a Development Consent Order (DCO) for SEP and DEP.
4. As the owners of SEP and DEP, Scira Extension Limited (SEL) and Dudgeon Extension Limited (DEL) are the named undertakers that have the benefit of the DCO. References in this document to obligations on, or commitments by, 'the Applicant' are given on behalf of SEL and DEL as the undertakers of SEP and DEP.
5. The SEP wind farm site covers an area of 97.0km^2 and is located approximately 15.8km from the North Norfolk coastline. SEP would be connected to the onshore electricity grid by an offshore export cable installed within the same offshore export cable corridor as has been identified for DEP, making landfall to the east of Weybourne, Norfolk, with onshore cables of approximately 60km in length in the same onshore export cable corridor as DEP to the onshore project substation located near to Norwich Main, Norfolk.

[1] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010098/EN010098-002246-Natural%20England%20SoS%20Consultation%20Response.pdf

6. The DEP wind farm site covers an area of 114.75km^2 and is located approximately 24.8km from the North Norfolk coastline. DEP would be connected to the onshore electricity grid by an offshore export cable installed within the offshore cable corridor making landfall to the east of Weybourne, Norfolk. From there, onshore cables would transport power over approximately 60km to the onshore project substation located near to Norwich Main, Norfolk.

7. Once built, SEP and DEP would have offshore components comprising:

- Wind turbines;
- Offshore substation platform/s (OSPs);
- Infield (array) cables;
- Interlink cables; and
- Export cables.

8. Construction of SEP and DEP is anticipated to commence at the earliest in 2025.

1.4 Purpose of this Document

9. There are potential environmental sensitivities associated with an offshore wind farm development, which need to be identified and considered before construction takes place.

10. These potential effects are outlined in the SEP and DEP Environmental Statement (ES) [document reference 6.1], including embedded mitigation through project design and where necessary any additional mitigation to be adhered to during the construction and operation phases.

11. This Outline Project Environmental Management Plan (OPEMP) is provided by Equinor New Energy Limited ('the Applicant') as part of the DCO application. The purpose of this document is to set out a framework for the PEMP required under Condition 13 of Schedule 10 and 11 (the Generation Deemed Marine Licences (DMLs)), Condition 12 of Schedules 12 and 13 (the Transmission DMLs) (**Draft DCO (Revision F)** [document reference 3.1]), including the measures that are proposed to manage the environmental risks associated with the construction and operation of the offshore components of SEP and DEP. The document is based on the SEP and DEP ES, industry good practice and relevant legislation (at the time of preparation).

12. The PEMP will be prepared following post-consent detailed design as required under the conditions of the DMLs included within the DCO:

"a project environmental management plan (in accordance with the outline project environmental management plan) covering the period of construction and operation"

2 Scope

13. Condition 13(d) of Schedules 10 and 11 and Conditions 12(d) of Schedules 12 and 13 (the PEMP condition) of the DMLs (**Draft DCO (Revision F)** [document reference 3.1]) state that the PEMP will include the following scope:

(d) a project environmental management plan (in accordance with the outline project environmental management plan) covering the period of construction and operation to include details of—

(i) a marine pollution contingency plan to address the risks, methods and procedures to deal with any spills and collision incidents during construction and operation of the authorised project in relation to all activities carried out;

(ii) a chemical risk assessment, including information regarding how and when chemicals are to be used, stored and transported in accordance with recognised best practice guidance;

(iii) waste management and disposal arrangements;

(iv) the appointment and responsibilities of a fisheries liaison officer;

(v) a fisheries liaison and coexistence plan (which accords with the outline fisheries liaison and co-existence plan) to ensure relevant fishing fleets are notified of commencement of licensed activities pursuant to condition 4 and to address the interaction of the licensed activities with fishing activities; and

(vi) procedures, which must be adopted within vessel transit corridors to minimise disturbance to red-throated diver during the period 1 November to 31 March (inclusive), which must be in accordance with the best practice protocol for minimising disturbance to red throated diver;

14. The PEMP will be produced prior to construction providing the information requested in the above DML Conditions, and setting out the controls and processes that are to be adopted to mitigate environmental impacts of SEP and DEP in line with this outline PEMP. The PEMP is an iterative document that will be developed and refined as SEP and DEP progress through the detailed design process, procurement and construction.

15. A series of Engineering, Procurement, Construction and Installation (EPCI) contractors will be responsible for the detailed design, construction and installation of the main infrastructure associated with SEP and DEP, including wind turbine foundations, turbine erection, offshore cable laying, OSP/s and landfall. These may be managed as individual contracts or as a framework.

16. Requirements within the PEMP will be communicated to contractors, as required, to discharge the relevant licence conditions and to communicate project environmental requirements and standards to facilitate incorporation into their Environmental Management Plans. The PEMP must be the responsibility of the SEP and DEP Project Manager to manage in close working with the Contractors.

17. It should be noted that a Code of Construction Practice (CoCP) (Requirement 19, Schedule 2 Part 1 of the **Draft DCO (Revision F)** [document reference 3.1]), which includes environmental management requirements, will also be developed for the onshore elements of SEP and DEP and will be subject to agreement with relevant Local Planning Authorities. Therefore, the onshore components of SEP and DEP are not included within the PEMP.

18. Additional information with regard to environmental management requirements and project specific requirements are set out in the ES, DCO requirements and DML conditions, and in Equinor's Energy Transition Plan (Equinor, 2022a) and the Equinor Book (Equinor 2022b).

19. The Applicant operates an Environmental Management System (EMS) based on the requirements of ISO 14001:2015, which describes the processes and procedures by which the Applicant will identify and manage significant risks associated with its operations. The EMS is a primary mechanism by which environmental policy commitments, such as compliance with relevant legislation and standards, pollution prevention and continual improvement in environmental performance are delivered. The Applicant will be compliant with the requirements of the EMS.

20. The PEMP will include the following information, as required by the DCO:

- A Marine Pollution Contingency Plan (**Section 4.1**);
- Chemical Risk Assessment (**Section 4.2**);
- Waste management and disposal arrangements (**Section 4.3**);
- Fisheries Liaison and coexistence plan (**Section 4.4**); and
- Procedures to be adopted within vessel transit corridors to minimise disturbance to red-throated diver during operation and maintenance activities (**Section 5.1**).

21. The PEMP will also include the following information relevant to Environmental Management:

- Archaeological Written Scheme of Investigation (**Section 4.5**);
- Management of other key environmental issues (**Section 5**);
- Communication and Reporting (**Section 6**);
- Monitoring and Vessel Inspections (**Section 7**);
- Training and Awareness (**Section 8**); and
- Subcontractor Management (**Section 9**).

22. Outline content for each section is described in **Sections 3** to **9**.

3 Project Description and Environmental Sensitivities

23. **Chapter 4 Project Description** [APP-090]) of the ES outlines the project description based on a design envelope. Following final detailed design of SEP and DEP, this section of the PEMP will set out information with regard to the detailed design and the associated environmental sensitivities. In particular, sensitive ecological, archaeological or human receptors, such as protected habitats, protected wrecks, constraints from other infrastructure, site layout plans, and the scope of works to be undertaken, would be considered.

24. The relevant EPCI contractors for SEP and DEP will be expected to have their own Aspect and Impacts Register as part of their internal EMS.

4 Plans and Documentation

4.1 Marine Pollution Contingency Plan

25. The Marine Pollution Contingency Plan (MPCP) provides guidance to the Project Team personnel, its contractors and subcontractors on the actions and reporting requirements in the event of spills and collision incidents (including oil, chemical and grout spills) during construction and operation of SEP and DEP. The requirement for this is secured through the PEMP condition quoted in **Section 2**.

26. The MPCP will focus on Tier 1 oil spills which are operational in nature and occur near an operator's own facilities as a consequence of their own operational activities. Reporting procedures for Tier 2 and Tier 3 oil spills will also be set out.

4.2 Chemical Risk Assessment

27. The Chemical Risk Assessment (CRA) will be produced for SEP and DEP, with the aim of minimising the risk of pollution incidents occurring by assessing the risks of spills occurring, stating how the chemicals should be stored and transported and ensuring best practice techniques are used when handling all chemicals used at SEP and DEP. The requirement for this is secured through the PEMP condition quoted in **Section 2.**

28. It is the responsibility of each contractor to have in place adequate controls for the delivery, storage and use of fuels, oils and chemicals on vessels and other materials as required. The contractors must ensure they are complying with the relevant regulations and best practice guidance, including checks that chemicals can be used offshore.

29. Oils and chemicals must be clearly labelled and each contractor should retain an up-to-date hazardous substance register. Activities involving the handling of large quantities of hazardous materials, such as deliveries and refuelling, should have detailed method statements in place and be undertaken by designated and trained personnel.

30. Oil and fuel storage tanks must be robust and provide adequate secondary containment and be located in designated areas taking into account security, the location of sensitive receptors and pathways, and safe access and egress for plant and manual handling.

31. Spill response materials should be provided nearby and be readily accessible, with local project personnel trained in spill response.

4.3 Waste Management and Disposal

32. The PEMP condition quoted in **Section 2** secures waste management and disposal arrangements.

33. Prior to disposal, any waste should be considered for reuse, recycle or recovery where it is practical and economically feasible.

34. Each contractor is responsible for the collection, storage and disposal of any waste produced during construction and operation of SEP and DEP. Vessel operators are required to liaise with port operators to facilitate appropriate storage, transfer, segregation and disposal of waste.

4.4 Fisheries Liaison and Coexistence Plan

35. A fisheries liaison and coexistence plan will be prepared in accordance with the **Outline Fisheries Liaison and Coexistence Plan** [APP-295] with an aim of ensuring relevant fishing fleets are notified of the commencement of licensed activities. The requirement for this is secured through the PEMP condition quoted in **Section 2**.

36. The fisheries liaison and coexistence plan will include the following:

- Timely and efficient Notice to Mariners (NtMs), Kingfisher notifications and other navigational warnings (of the position and nature of works including offshore cable corridor crossings) would be issued to the fishing community;
- Appropriate liaison would be undertaken with all relevant fishing interests to ensure that they are informed of development planning, construction and maintenance activities and any items which may accentuate risk such as UXOs, unburied cables cut and weighted cables, etc (as required, in the case of exposure of cables, under Condition 7(12) of Schedule 10 and 11, Condition 6(12) of Schedule 12 and 13 of the DML (**Draft DCO (Revision F)** [document reference 3.1]);
- A Fisheries Liaison Officer (FLO) will be appointed throughout the construction, operation and decommissioning phases of SEP and DEP. The FLO will establish and maintain effective communication between the Project Team, contractors and fishermen, ensuring that information is provided in a timely manner to minimise disruptions to fishing activities.
- Information on the location of areas of cable protection would be communicated to the fishing industry.

4.5 Archaeological Written Scheme of Investigation

37. The Archaeological Written Scheme of Investigation (WSI) (Offshore) will be produced in accordance with the **Outline WSI (Offshore)** [APP-298] and will set out the commitment that the Applicant has made for the investigation, mitigation and recording of any archaeological remains encountered, or suspected, during construction, operation and decommissioning of SEP and DEP. It comprises the following:

- An outline of the development options and a summary of the potential impacts associated with the development;
- Details of any archaeological exclusion zones;
- Details of agreed recommended mitigation and monitoring requirements;
- An outline of responsibilities and communication requirements;

- Details of the agreed protocol for archaeological discoveries; and
- A scheme of investigation for further archaeological works.

38. The WSI (Offshore) will be monitored and updated throughout the pre-construction and construction phase to ensure that the scheme of investigation is appropriate to the final design. The requirement for this is secured through Condition 13(e) of Schedules 10 and 11 and Condition 12(f) of Schedules 12 and 13 of the DMLs (**Draft DCO (Revision F)** [document reference 3.1]).:

(e) an archaeological written scheme of investigation in relation to the offshore Order limits seaward of MHWS, which must accord with the outline written scheme of investigation (offshore) and industry good practice, in consultation with the statutory historic body to include—

(i) details of responsibilities of the undertaker, archaeological consultant and contractor;

(ii) a methodology for further site investigation including any specifications for geophysical, geotechnical and diver or remotely operated vehicle investigations;

(iii) archaeological analysis of survey data, and timetable for reporting, which is to be submitted to the MMO within four months of any survey being completed;

(iv) delivery of any mitigation including, where necessary, identification and modification of archaeological exclusion zones;

(v) monitoring of archaeological exclusion zones during and post construction;

(vi) a requirement for the undertaker to ensure that a copy of any agreed archaeological report is deposited with the National Record of the Historic Environment, by submitting a Historic England OASIS (Online Access to the Index of archaeological investigations) form with a digital copy of the report within six months of completion of construction of the authorised scheme, and to notify the MMO that the OASIS form has been submitted to the National Record of the Historic Environment within two weeks of submission;

(vii) a reporting and recording protocol, including reporting of any wreck or wreck material during construction, operation and decommissioning of the authorised scheme; and

(viii) a timetable for all further site investigations, which must allow sufficient opportunity to establish a full understanding of the historic environment within the offshore Order limits and the approval of any necessary mitigation required as a result of the further site investigations prior to commencement of licensed activities;

4.6 Method Statement and Risk Assessment

39. It is the responsibility of the contractors to have in place method statements and risk assessments approved by the Project Team for works being carried out on-site. Where relevant, the method statement should cross reference applicable environmental risk assessments.

40. The risk assessments should identify environmental hazards and outline subsequent control measures. Control measures should be developed, implemented and monitored to ensure that any impact on the environment is avoided or minimised. Approval for these method statements with the relevant authorities may be required.

41. A tool box talk should be presented by the contractor to key personnel involved in the work activities. This will consist of a method statement outlining the risks involved and the control measures personnel are expected to comply with. Individuals must sign a method statement attendance briefing record sheet, providing acknowledgment of their presence at the briefing. The contractor will retain these records. Tool box talks are an opportunity for the contractor to disclose any other environmental sensitivities that the contractors must be aware of.

5 Management of other Key Environmental Issues

42. This section provides an overview of the controls and procedures to be adopted to mitigate the environmental impacts associated with SEP and DEP. Further details will be provided in the final PEMP following detailed design.

43. This section covers the following items:

- Offshore Ornithology;
- Benthic Ecology;
- Marine Mammals;
- Invasive Non Native Species (INNS);
- Marine archaeology and cultural heritage;
- Dropped object in the marine environment;
- Wastewater discharges; and
- Emissions to air.

44. A brief overview of some of the potential key issues for each item is provided below. However, it should be noted that the list of issues identified above is not exhaustive and would be specific to the final design of SEP and DEP.

45. An **Offshore In Principle Monitoring Plan (IPMP)** [APP-289] and a Schedule of Mitigation (document reference 6.5) are provided with the DCO application, outlining the approach to monitoring and mitigation for SEP and DEP based on the outcomes of the offshore impact assessments detailed in Chapters 6 to 16 of the ES.

46. The final PEMP will include the mitigation measures to be adopted. This will enable communication of awareness of any sensitive areas and potential protected features, such as reefs, to the designated members of the Project Team. The procedures to be adopted in the event of an incident in proximity to these features will also be set out in the PEMP.

5.1 Offshore Ornithology

5.1.1 Best Practice Protocol for Minimising Disturbance to Red-Throated Diver

47. The PEMP will include the final procedures to be adopted within vessel transit corridors to minimise disturbance to red-throated diver during construction, operation and maintenance activities in accordance with Condition 13(d)(vi) of Schedules 10 and 11 and Condition 12(d)(vi) of Schedules 12 and 13 (**Draft DCO (Revision F)** [document reference 3.1]).

48. Potential impacts on red-throated diver during construction, operation and maintenance works will be mitigated through:

- Where possible avoid works during the over winter period 1st November to 31st March (inclusive);
- Selecting routes that avoid known aggregations of birds;
- Restricting (to the extent possible) vessel movements to existing navigation routes (where the densities of red-throated divers are typically relatively low);
- Maintaining direct transit routes (to minimise transit distances through areas used by red-throated diver);
- Avoidance of over-revving of engines (to minimise noise disturbance); and
- Briefing of vessel crew on the purpose and implications of these vessel management practices (through, for example, tool-box talks).

49. The Project Team would make maintenance vessel operators aware of the importance of the species and the associated mitigation measures through tool box talks.

5.2 Benthic Ecology

50. Pre-construction surveys will be undertaken in advance of any cable and foundation installation works (as secured through DML condition 18(4) of Schedules 10 and 11 and Condition 17(4) of Schedules 12 and 13 of the **Draft DCO (Revision F)** [document reference 3.1]). The methodology of the pre-construction surveys would be agreed with Marine Management Organisation (MMO) and Natural England.

51. Pre-construction surveys will be undertaken to determine if potential Annex I / UK BAP Priority Habitat *S. spinulosa* reef and UK BAP priority habitat 'peat and clay exposures with piddocks' are present within the proposed wind turbine locations or offshore cable routes. Should any Annex I biogenic reefs be identified in the proposed wind turbine locations and/or cable routes during the pre-construction surveys, micro-siting would be undertaken where possible, to minimise potential impacts.

52. The Applicant has committed to minimising external cable protection within the Cromer Shoal Chalk Beds (CSCB) Marine Conservation Zone (MCZ) as far as possible (see the **Outline CSCB MCZ Cable Specification and Installation Management Plan (CSIMP)** [APP-291]). All external cable protection systems used within the CSCB MCZ will be designed to be removable (i.e. no loose rock) with a commitment to remove it at decommissioning if it is deemed to be required at that time (as secured through Part 1, Schedule 2, Requirement 8 of the **Draft DCO (Revision F)** [document reference 3.1]). It is possible that external cable protection systems may be available on the market that are manufactured from non-plastic material and would be recoverable where necessary after the lifetime of the wind farm. Selection of the appropriate system for use at SEP and DEP will be completed at the pre-construction stage once the requirements are better understood.

53. All sea bed material arising from the Cromer Shoal Chalk Beds MCZ during cable installation will be placed back within the MCZ (see **Disposal Site Characterisation Report** [APP-291] using an approach, to be agreed with SNCBs and the MMO. Sediment would not be disposed in or nearby known sensitive benthic habitats and where possible will be redeposited within areas of similar sediment type, further detail of this mitigation is provided in the **Disposal Site Characterisation Report** [APP-291].

54. The Applicant will make all reasonable endeavours to bury offshore export cables, thereby reducing Electromagnetic Fields (EMF) and the need for surface cable protection. An **Outline CSCB MCZ CSIMP** [document reference 9.7] has been submitted with DCO Application which details the anticipated export cable protection requirements within the MCZ reflecting lessons learned from the SOW and DOW export cable installations in the same area. **Appendix 1 Interim Cable Burial Study** [APP-292] and **Appendix 2 Export Cable Burial Risk Assessment** [APP-293] of the **Outline CSCB MCZ CSIMP** have been submitted with the DCO application and will be updated at the pre-construction phase to reflect the detailed design of SEP and DEP. As part of the final CSIMP a detailed cable laying plan, incorporating a burial risk assessment and a cable and scour protection plan providing details of the need, type, sources, quantity and installation methods for scour protection and cable protection for all designated sites where cable protection is required will also be provided.

5.2.1 Invasive Non Native Species

55. The risk of spreading INNS will be mitigated by the following relevant regulations and guidance:

- International Convention for the Prevention of Pollution from Ships (MARPOL). The MARPOL sets out appropriate vessel maintenance;
- The Environmental Damage (Prevention and Remediation (England) Regulations 2015, which set out a polluter pays principle where the operators who cause a risk of significant damage or cause significant damage to land, water or biodiversity will have the responsibility to prevent damage occurring, or if the damage does occur will have the duty to reinstate the environment to the original condition;

- The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which provide global regulations to control the transfer of potentially invasive species.

5.3 Marine Mammals

56. A construction method statement will be produced (as secured through DML Condition 13(c) of Schedules 10 and 11 and Condition 12(c) of Schedules 12 and 13 (**Draft DCO (Revision F)** [document reference 3.1]) following final design to detail the procedures for soft start and ramp up of piling activity, in accordance with those assessed in **Chapter 10 Marine Mammals** [APP-096] of the ES.

57. A Marine Mammal Mitigation Protocol (MMMP) for piling in accordance with the **Draft MMMP** [APP-288] submitted with the DCO application (and as secured through Condition 13(h) of Schedules 10 and 11 and Conditions 12(i) of Schedules 12 and 13 (**Draft DCO (Revision F)** [document reference 3.1]) will detail the proposed mitigation measures to reduce the risk of any physical or permanent auditory injury to marine mammals during all piling operations. This will also include details of the embedded mitigation, for the soft-start and ramp-up.

58. In addition to the MMMP for piling, a SEP and DEP Site Integrity Plan (SIP) for the Southern North Sea (SNS) Special Area of Conservation (SAC) in accordance with the **In Principle SIP for the SNS SAC** [APP-290] submitted with the DCO application will be produced in the pre-construction phase (as secured through Condition 14 of Schedules 10 and 11 and Condition 13 of Schedules 12 and 13 (**Draft DCO (Revision F)**, document reference 3.1)). This document will provide such mitigation as is necessary to avoid adversely affecting the integrity of the site. It sets out the approach for the Applicant to deliver the required mitigation measures for SEP and DEP to ensure the avoidance of significant disturbance of harbour porpoise in relation to the Southern North Sea SAC site Conservation Objectives.

59. It is likely that a risk assessment for European Protected Species (EPS) (cetaceans) will be incorporated into the PEMP and an EPS licence(s) applied for where applicable.

60. Further assessment will be conducted prior to construction, based on the foundation type and installation method, to determine if there is the risk of significant disturbance to marine mammals. This will then be used to determine if further mitigation measures which reduce sound propagation and disturbance are required. If they are required, then a review will be conducted to determine what is the most appropriate and effective method based on the latest and available methods prior to construction. This will include a review of all suitable noise abatement measures at that time.

5.3.1 Vessel Good Practice and Code of Conduct to Avoid Marine Mammal Collisions

61. Embedded mitigation to reduce vessel collision risk with marine mammals includes that vessel movements, where possible, will follow set vessel routes and hence areas where marine mammals are accustomed to vessels, in order to reduce any increased collision risk. All vessel movements will be kept to the minimum number that is required to reduce any potential collision risk.

62. Operators of all vessels will be made aware of the risk and measures to avoid marine mammal collisions during mobilisation briefings. In order to reduce the risk of collisions, meetings will be undertaken with all vessel operators to promote collision awareness and avoidance, including code of conduct.

63. Code of conduct for vessel operators will be produced and issued to reduce the risk of collision with marine mammals across all phases of the Projects.

64. The code of conduct for good practice will be developed prior to construction based on the latest information and guidance.

65. The code of conduct for good practice to avoid marine mammal collisions with vessels will include, but not be limited to:

- Avoid deliberately approaching marine mammals when sighted.
- Avoid abrupt changes to course or speed should marine mammals approach the vessel or bow-ride.
- Where possible, vessels will maintain a steady speed, and direction, to allow any marine mammal to predict where the vessel may be headed, and to move out of the way or avoid surfacing in the path of the vessel.
- Additionally, where possible and safe to do so, transiting vessels will maintain distances of 600m or more off the coast, particularly in areas near known seal haul-out sites during sensitive periods. Protocol to report any collisions.

5.4 Dropped Objects in the Marine Environment

66. DML Condition 11(9) of Schedules 10 and 11 and Condition 10(9) of Schedules 12 and 13 of the **Draft DCO (Revision F)** [document reference 3.1] states:

> *(9) All dropped objects must be reported to the MMO using the Dropped Object Procedure Form as soon as reasonably practicable and in any event within 24 hours of the undertaker becoming aware of an incident. On receipt of the Dropped Object Procedure Form the MMO may require relevant surveys to be carried out by the undertaker (such as side scan sonar) if reasonable to do so and the MMO may require obstructions to be removed from the seabed at the undertaker's expense if reasonable to do so.*

67. The final PEMP will outline procedures to follow in the case of both floating and non-floating objects. It should detail who to report the incident to, where to document the incident, and methods for recovery. Designated members of the Project Team and the Regulator must review the procedure before contractors may begin work.

5.5 Waste Water Discharges

68. Controls for any waste water discharges (such as effluent discharges, ballast waters, bilge waters, and deck runoff) will be included in the final PEMP, in accordance with the latest legislation, regulatory limits and good practice.

69. Monitoring records in relation to the disposal of foul water, bilge water or ballast water during the construction phase must be retained.

5.6 Emissions to Air

70. Vessel emissions associated with SEP and DEP would comply with MARPOL Annex VI requirements in relation to ozone depleting substances regulations, nitrogen oxide, sulphur oxide and particulate and volatile organic compounds. Where relevant, vessels must have a valid International Air Pollution Prevention (IAPP) certificate.

6 Communication and Reporting

6.1 Environmental Management Structure and Responsibility

71. Environmental Management roles and responsibilities for the Project Team will be documented. This section of the final PEMP will set out the environmental responsibilities, including identification of key site staff, their environmental management responsibilities and how these link with other members of the Project Team, such as the Project Manager, the Project Health Safety and Environmental Manager(s) and / or Advisors along with environmental specialists such as Environmental Liaison Officer, FLO, Ornithologists, Marine Mammal Observers or Archaeologists. The contact details for the key individuals listed should also be included in the PEMP.

72. Interactions with stakeholders such as Statutory Nature Conservation Bodies (SNCBs) and the MMO will also be covered in this section.

73. It is expected that the Applicant would employ a Principal Contractor who would be responsible for environmental management on site, including the preparation of environmental documentation.

6.2 Associated Documentation

74. This section will refer to relevant associated EMS and project/site specific documentation that requires to be considered when developing the final PEMP. Examples include, but are not limited to:

- Contract requirements (such as environmental standards);
- Contractors' EMS requirements;
- Project Emergency Response Plan;
- Project Health and Safety Plan;
- Project Environmental Statement;
- DCO requirements;
- DML conditions;
- Risk registers; and
- Legal registers.

6.3 Meetings

75. Regular environmental meetings and debriefs must be held local to the site. Frequent health, safety and environment (HSE) meetings must take place on all construction and maintenance vessels with representatives from the Project Team, the Principal Contractor, and key sub-contractors. Minutes of meetings will be recorded, and standard agenda items will include status of outstanding items, reports of environmental incidents or complaints, stakeholder engagement, tool box talks issued/delivered, and key findings of environmental inspections and audits.

76. The Principal Contractor and Project Team are expected to host regular meetings whereby important environmental information will be shared with the wider Project Team, contractor and subcontractor group members to raise awareness of environmental issues.

6.4 Community Complaints

77. The Applicant values its relationship with the communities that surround SEP and DEP. All work would be carefully planned to minimise disturbance to neighbouring communities.

78. Contractors must ensure that any complaints are reported to the designated members of the Project Team and investigated promptly.

79. The final PEMP will detail the procedure in place to report public complaints in relation to offshore works.

6.5 Fisheries Liaison

80. As discussed in **Section 4.4**, a FLO will be appointed for the duration of the construction, operation and decommissioning works.

6.6 Stakeholders

81. Reference should be made to any reporting requirements in relation to stakeholders set out under the DCO and / or DMLs.

6.7 Environmental Incident Response

6.7.1 Offshore Safety Management

82. In accordance with Condition 16 of Schedules 10 and 11, and Condition 15 of Schedules 12 and 13 of the DML (**Draft DCO (Revision F)** [document reference 3.1]), all recommendations as appropriate within MGN654 “Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response Issues” (or any equivalent guidance that replaces or supersedes it) and its annexes should be adequately addressed.

83. As stated in **Section 4.1** for the offshore activities, the MPCP, will also be developed for SEP and DEP.

6.7.2 Reporting

84. All environmental incidents (including dropped objects into the marine environment) and near misses must be reported, investigated and recorded to the designated members of the Project Team.

85. Contractors are required to produce monthly reports for the designated members of the Project Team to record health, safety and environmental performance.

6.7.3 Lessons Learned / Incident Follow-Up

86. If an environmental incident occurs, it must be thoroughly investigated by the relevant contractor to establish the root cause and prevent any recurrence. Dependent on the severity of the incident, the Project Team may wish to manage or assist with the investigation process.

7 Environmental Audits, Monitoring and Vessel Inspections

87. A programme of performance and compliance monitoring must be established for the Projects, this should be documented in the final PEMP and include, but not necessarily be restricted to, the following items (**Sections 7.1** to **7.3**), where relevant.

7.1 Environmental Audits

88. Environmental audits should comprise both internal audit and external audits.

89. The Applicant's audit programme includes a requirement to audit construction sites on a periodic basis. An audit checklist will be used by the Applicant to ensure that a standard approach is applied consistently. Environmental audits would be carried out by experienced auditors, either from within the Project Team, or via delegated specialists.

7.2 Vessel Inspections and Audits

90. Environmental vessel inspections should be based on the International Marine Contractors Association (IMCA) standards, IMCA M 189/S 004 (Marine Inspection Check List for Small Boats) or IMCA M 149 (Common Marine Inspection Document). A log of all vessel audits and associated close out actions should be maintained. This will be the approach adopted by the Project Team.

7.3 Environmental Monitoring

91. An **Offshore IPMP** [APP-289] has been submitted with the DCO application. It is recognised that monitoring is an important element in the management and verification of the actual project impacts for certain receptors. The requirement for, and appropriate design and scope of monitoring, will be agreed with the Regulator and appropriate stakeholders prior to construction works commencing.

8 Training and Awareness

8.1 Project / Vessel Inductions

92. The overarching project induction must include reference to compliance with the relevant requirements and conditions of the Projects including those specific to vessel management practices.

93. A vessel induction must take place with all vessel personnel present. It must include an environmental component. The Contractor's project team should nominate designated personnel to be responsible for the preparation and delivery of site induction and maintaining attendee records.

94. The environmental component of the vessel induction is expected to include reference to environmental management contacts, site specific environmental sensitivities, waste management arrangements, hazardous material management, fuel, oil, and chemical management; environmental emergency response, reporting of incidents and complaints.

8.2 Tool Box Talks

95. Tool box talks are an effective method for the dissemination of information relating to work activities. The contractor must deliver environmental tool box talks to all on-site personnel when required. Attendee records must be kept by the contractor as they are likely to be inspected as part of environmental audits.

8.3 Emergency Response

96. The Contractor must ensure that all staff, including any sub-contractors, are trained in the SEP and DEP environmental emergency response procedures. This is to ensure that they are able, and prepared, to respond to an incident promptly and effectively.

9 Sub-Contractor Management

97. The final PEMP must set out how the Principal Contractor manages their sub-contractors. This may range from the selection and assessment processes through to the assessment of performance on the vessel.

98. For example, expectations of Contractors working on behalf of the Applicant are primarily detailed in the final PEMP and the following documents:

- Contract Schedules including specific environmental requirements;
- Environmental Policy; and
- Environmental Statement.

10 References

Equinor (2022a). Equinor Energy Transition Plan. Available at: [redacted]

Equinor (2022b). The Equinor Book. Available at: [redacted]