

# **RWE Renewables UK Dogger Bank South (West) Limited**

# **RWE Renewables UK Dogger Bank South (East) Limited**

# **Dogger Bank South Offshore Wind Farms**

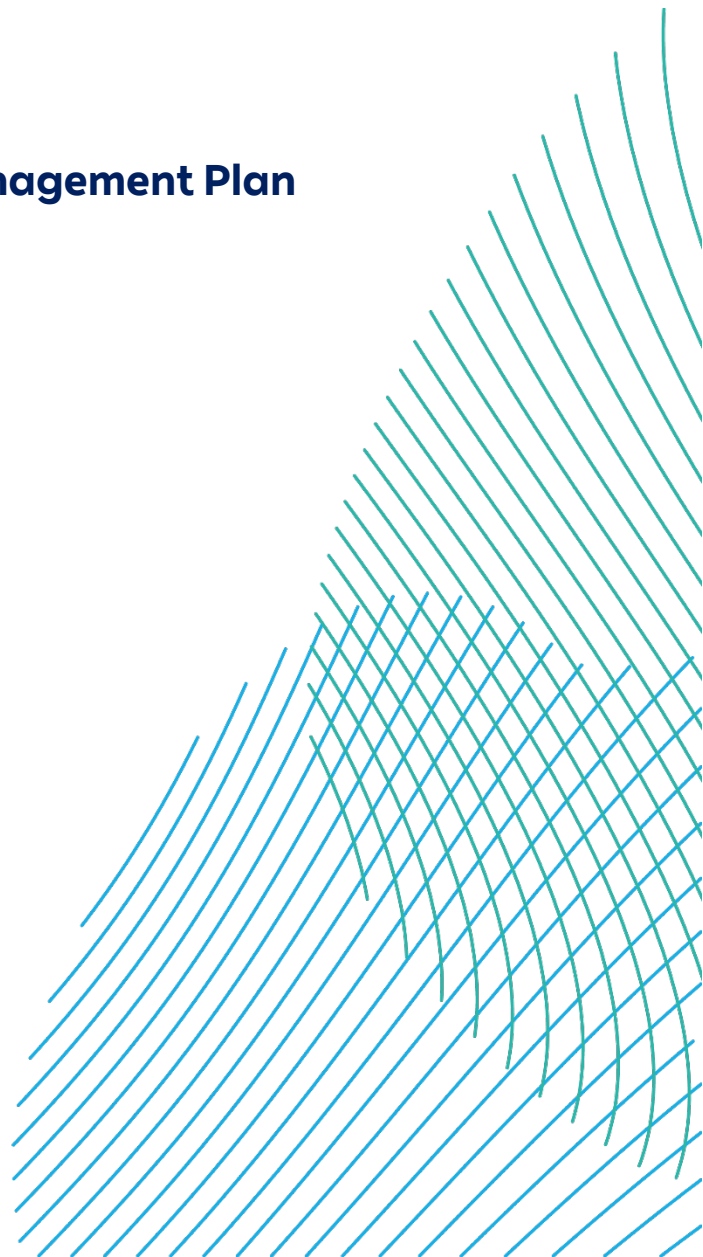
## **Outline Project Environmental Management Plan Volume 8**

**June 2024**

**Application Reference: 8.21**

**APFP Regulation: 5(2)(q)**

**Revision: 01**





Company:	<b>RWE Renewables UK Dogger Bank South (West) Limited and RWE Renewables UK Dogger Bank South (East) Limited</b>	Asset:	<b>Development</b>
Project:	<b>Dogger Bank South Offshore Wind Farms</b>	Sub Project/Package:	<b>Consents</b>
Document Title or Description:	Outline Project Environmental Management Plan		
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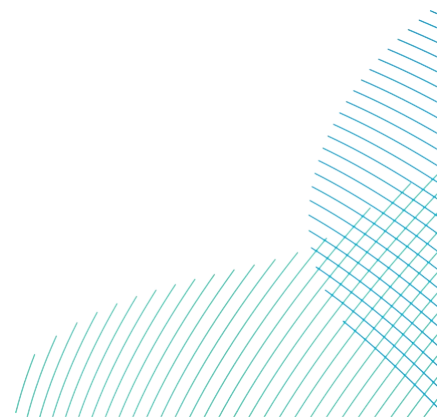
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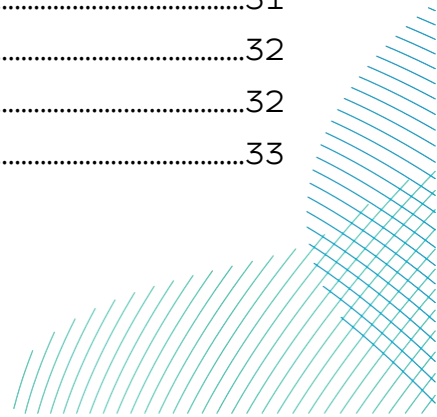
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## Contents

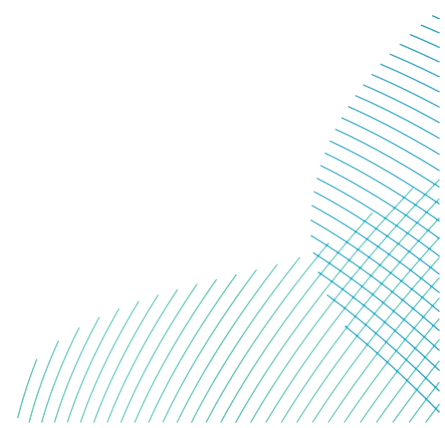
1	Introduction.....	11
1.1	The Purpose of this Document.....	11
1.2	Project Background.....	13
1.3	Scope.....	16
1.4	Review Process.....	17
2	Project Description and Environmental Sensitivities.....	18
3	Environmental Management System and Roles & Responsibilities.....	19
3.1	Environmental Management Structure and Responsibility.....	19
3.2	Environmental Management System.....	19
4	Associated Documents.....	20
5	Plans and Documentation.....	21
5.1	Marine Pollution Contingency Plan.....	21
5.2	Chemical Risk Assessment.....	22
5.3	Waste Management and Disposal.....	22
5.4	Fisheries Liaison and Coexistence Plan.....	23
5.5	Archaeological Written Scheme of Investigation.....	23
5.6	Method Statements and Risk Assessments.....	24
5.7	Workforce Management Plan.....	25
6	Management of other Key Environmental Issues.....	26
6.1	Offshore Ornithology.....	26
6.1.1	Best Practice Protocol for Minimising Disturbance to Red-throated Diver.....	26
6.2	Benthic and Intertidal Ecology.....	27
6.3	Invasive Non Native Species.....	28
6.4	Marine Mammals.....	28
6.4.1	Vessel Good Practice and Code of Conduct to Avoid Marine Mammal Collisions.....	29
6.4.2	Working in Proximity to Wildlife in the Marine Environment Code of Conduct.....	30
6.5	Climate Change.....	30
6.6	Dropped Objects in the Marine Environment.....	31
6.7	Waste Water Discharges.....	32
6.8	Emissions to Air.....	32
7	Personnel, Training and Induction.....	33



7.1	Training and Competence.....	33
7.1.1	Sub-Contractor Management.....	33
7.2	Environmental Induction and Training.....	34
7.2.1	Vessel Inductions.....	34
7.2.2	Toolbox Talks.....	35
8	Communication and Reporting.....	36
8.1	Internal Communication.....	36
8.2	External Communication.....	36
8.2.1	External Meetings.....	36
8.2.2	Community Complaints.....	36
8.2.3	Fisheries Liaison.....	36
8.2.4	Stakeholders.....	37
8.3	Environmental Incident Response.....	37
8.3.1	Offshore Safety Management.....	37
8.3.2	Reporting.....	37
8.3.3	Lessons Learned / Incident Follow-Up.....	37
9	Documentation and Records Management.....	38
9.1	Documented Information.....	38
9.2	Records.....	38
10	Environmental Audits, Monitoring and Vessel Inspections.....	39
10.1	Environmental Audits.....	39
10.2	Vessel Inspections and Audits.....	39
10.3	Environmental Monitoring.....	39
	References.....	40

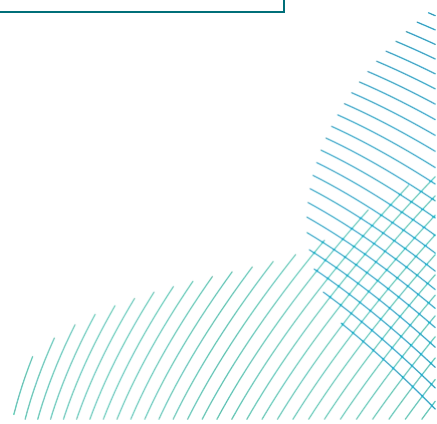
## Figures

Figure 1-1	Location of the Projects' Offshore Development Area.....	15
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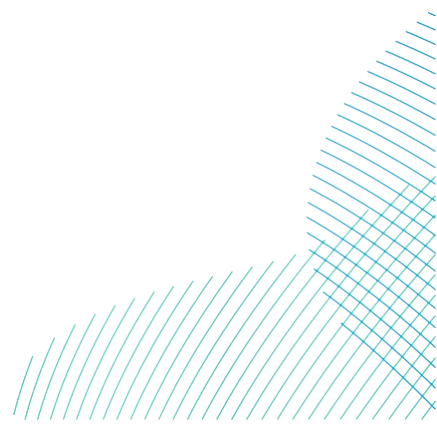


## Glossary

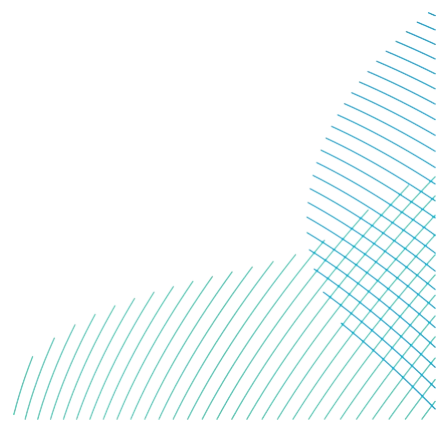
Term	Definition
Accommodation Platform	An offshore platform (situated within either the DBS East or DBS West Array Area) that will provide accommodation and mess facilities for staff when carrying out maintenance activities for the Projects.
Array Area	The DBS East and DBS West offshore Array Areas, where the wind turbines, offshore platforms and array cables will be located. The Array Areas do not include the Offshore Export Cable Corridor or the Inter-Platform Cable Corridor within which no wind turbines are proposed. Each area is referred to separately as an Array Area.
Array cables	Offshore cables which link the wind turbines to the Offshore Converter Platform(s).
Aspects and Impacts Register	A tool used to identify, assess, summarise and prioritise the risks and impacts that a proposed project activity might have on the environment and create a plan for mitigating these potential impacts.
Collector Platforms (CPs)	Receive the AC power generated by the wind turbines through the array cables, collect it and transform the voltage for onward transmission to the Offshore Converter Platforms (OCPs).
Collision	The act or process of colliding (crashing) between two moving objects.
Concurrent Scenario	A potential construction scenario for the Projects where DBS East and DBS West are both constructed at the same time.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for one or more Nationally Significant Infrastructure Project (NSIP).
Development Scenario	Description of how the DBS East and/or DBS West Projects would be constructed either in isolation, sequentially or concurrently.



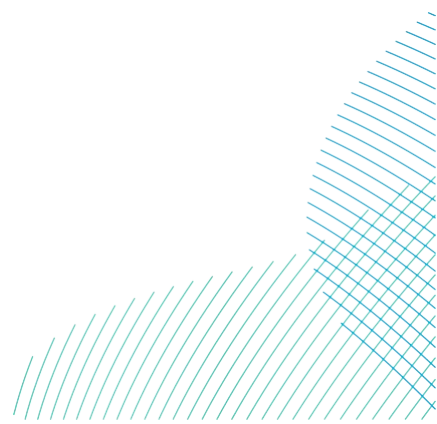
Term	Definition
Electrical Switching Platform (ESP)	The Electrical Switching Platform (ESP), if required would be located either within one of the Array Areas (alongside an Offshore Converter Platform (OCP)) or the Export Cable Platform Search Area.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.
European Site	Sites designated for nature conservation under the Habitats Directive and Birds Directive. This includes candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas, and is defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017.
In Isolation Scenario	A potential construction scenario for one Project which includes either the DBS East or DBS West array, associated offshore and onshore cabling and only the eastern Onshore Converter Station within the Onshore Substation Zone and only the northern route of the onward cable route to the proposed Birkhill Wood National Grid Substation.
Inter-Platform Cable Corridor	The area where Inter-Platform Cables would route between platforms within the DBS East and DBS West Array Areas, should both Projects be constructed.
Inter-Platform Cables	Buried offshore cables which link offshore platforms.
Landfall	The point on the coastline at which the Offshore Export Cables are brought onshore, connecting to the onshore cables at the Transition Joint Bay (TJB) above mean high water.



Term	Definition
Offshore Converter Platforms (OCPs)	The OCPs are fixed structures located within the Array Areas that collect the AC power generated by the wind turbines and convert the power to DC, before transmission through the Offshore Export Cables to the Project's Onshore Grid Connection Points.
Offshore Export Cable Corridor	This is the area which will contain the offshore export cables (and potentially the ESP) between the Offshore Converter Platforms and Transition Joint Bays at the landfall.
Offshore Export Cables	The cables which would bring electricity from the offshore platforms to the Transition Joint Bays (TJBs).
Offshore Fisheries Liaison Officer (OFLO)	Responsible for providing liaison between fishing vessels and offshore Project vessels. Role typically performed by someone with local knowledge and fisheries experience to encourage co-operation between all parties, and to manage any areas of conflict and/or dispute.
Principal Contractor	A contractor appointed under Regulation 5(1) (b) of the Construction (Design and Management) Regulations 2015. They have control over the construction phase of a project, including several contractors.
Project Team	A multi-disciplinary team consisting of individuals from RWE who are ultimately responsible for the construction, operation and maintenance and decommissioning phases of DBS East and DBS West, who are supported by a wider group of contractors and sub-contractors.
Scour Protection	Protective materials to avoid sediment erosion from the base of the wind turbine foundations and offshore substation platform foundations due to water flow.
Sequential Scenario	A potential construction scenario for the Projects where DBS East and DBS West are constructed with a lag between the commencement of construction activities. Either Project could be built first.



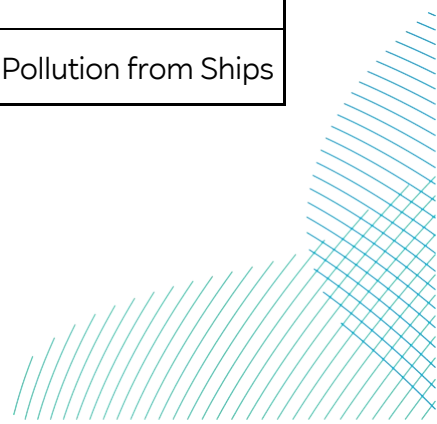
Term	Definition
The Applicants	The Applicants for the Projects are RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited. The Applicants are themselves jointly owned by the RWE Group of companies (51% stake) and Masdar (49% stake).
The Projects	DBS East and DBS West (collectively referred to as the Dogger Bank South Offshore Wind Farms).
Wind Turbine	Power generating device that is driven by the kinetic energy of the wind.



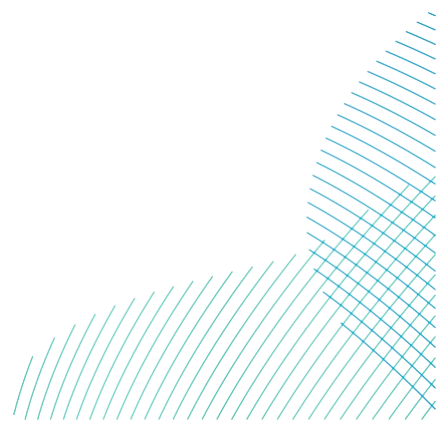


## Acronyms

Term	Definition
CoCP	Code of Construction Practice
COLREGs	Convention on the International Regulations for Preventing Collisions at Sea
CP	Collector Platform
CRA	Chemical Risk Assessment
CTV	Crew Transfer Vessel
DBS	Dogger Bank South
DCO	Development Consent Order
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EPS	European Protected Species
ES	Environmental Statement
ESP	Electrical Switching Platform
IAPP	International Air Pollution Prevention
IMCA	International Marine Contractors Association
IMO	International Maritime Organization
INNS	Invasive Non Native Species
IPMP	In Principle Monitoring Plan
MARPOL	International Convention for the Prevention of Pollution from Ships



<b>Term</b>	<b>Definition</b>
MMO	Marine Management Organisation
MPCP	Marine Pollution Contingency Plan
NtM	Notice to Mariners
OCP	Offshore Converter Platforms
OFLO	Offshore Fisheries Liaison Officer
OREI	Offshore Renewable Energy Installation
PEMP	Project Environmental Management Plan
SAC	Special Area of Conservation
SNCB	Statutory Nature Conservation Bodies
SNS	Southern North Sea
UK	United Kingdom
UXO	Unexploded Ordnance
WSI	Written Scheme of Investigation

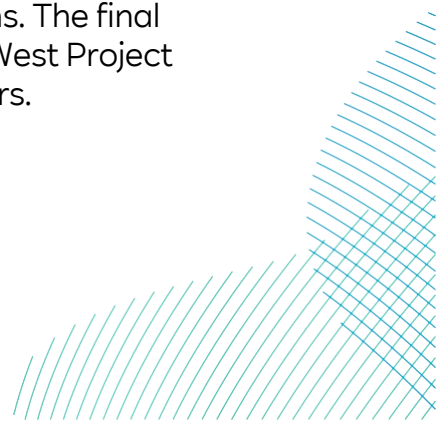


## 1 Introduction

### 1.1 The Purpose of this Document

1. There are potential environmental sensitivities associated with an offshore wind farm development which need to be identified and considered before construction takes place. These potential effects are outlined in the Dogger Bank South (DBS) East and DBS West Offshore Wind Farms (herein 'the Projects') Environmental Statement (ES) (**Volume 7, Chapters 1 to 30 (application ref: 7.1 to 7.30)**), including embedded mitigation through project design and where necessary any additional mitigation to be adhered to during the construction, operation and maintenance and decommissioning phases.
2. This Outline Project Environmental Management Plan (PEMP) is provided as part of the Development Consent Order (DCO) application to demonstrate the linkages between the impact assessment for the offshore components of the Projects (detailed in **Volume 7, Chapter 8 Marine Physical Environment to Chapter 17 Offshore Archaeology and Cultural Heritage (application ref: 7.8 to 7.17)**), offshore development activities, and conditions of the Deemed Marine Licences (DMLs) imposed as part of the DCO. This Outline PEMP is the primary document for the offshore aspects of the Projects' environmental management system (EMS) and is accompanied by associated parent documentation outlined in section 4.
3. Other key documents in the Projects' EMS include:
  - An **Outline Code of Construction Practice (Volume 8 (application ref: 8.9))** (Requirement 18 of the **Draft DCO (Volume 3 (application ref: 3.1))**), which includes environmental management requirements, will also be developed for the onshore elements of the Projects and will be subject to agreement with relevant Local Planning Authorities. Therefore, the onshore components of the Projects are not included within the PEMP; and
  - **Volume 8, In Principle Monitoring Plan (application ref: 8.23)** and **Volume 8, Commitments Register (application ref: 8.6)** are provided with the DCO application, outlining the approach to monitoring and mitigation for the Projects based on the outcomes of the offshore impact assessments detailed in **Volume 7, Chapters 8 to 17 (application ref: 7.8 to 7.17)** of the ES.

4. The purpose of this Outline PEMP is to set out a framework for the final PEMP(s) required under conditions of **Volume 3, Draft DCO (application ref: 3.1)**, including the measures that are proposed to manage the environmental risks associated with the construction of the offshore components of the Projects. This document is based on the Projects' ES (**Volume 7, Chapters 1 to 30 (application ref: 7.1 to 7.30)**), industry good practice and relevant legislation (at the time of preparation). The objectives of this Outline PEMP are:
  - To enable construction activities to take place as required by the Projects in an environmentally responsible manner; and
  - To provide staff and contractors with clear, concise, and practical environmental management measures.
5. **Volume 3, Draft DCO (application ref: 3.1)** provides for five DMLs, each of which is subject to a condition requiring a final PEMP to be prepared in accordance with this Outline PEMP. Up to five separate PEMPs may therefore be developed.
6. The final PEMP(s) will be submitted 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 offshore environmental impacts of the Projects in line with this Outline PEMP. The Projects' final PEMP is an iterative document that will be developed and refined as the Projects progress through the construction, operation and maintenance and decommissioning phases. The final PEMP(s) may require further amendment and re-approval prior to the operation and maintenance and decommissioning phases of the Projects to ensure it remains relevant for those phases.
7. A series of contractors will be responsible for the detailed design, construction and installation of the main infrastructure associated with the Projects, including wind turbine foundations, wind turbine erection, offshore cable laying, offshore platforms and landfall. These may be managed as individual contracts or as a framework. Project Manager(s) will be appointed who will have responsibility for updating the final PEMP(s) and distributing to relevant contractors.
8. Requirements within the final PEMP(s) will be communicated to contractors, as required, to discharge the relevant DML conditions and to communicate project environmental requirements and standards to facilitate incorporation into their Environmental Management Plans. The final PEMP(s) must be the responsibility of DBS East and DBS West Project Managers to manage in close working with the contractors.

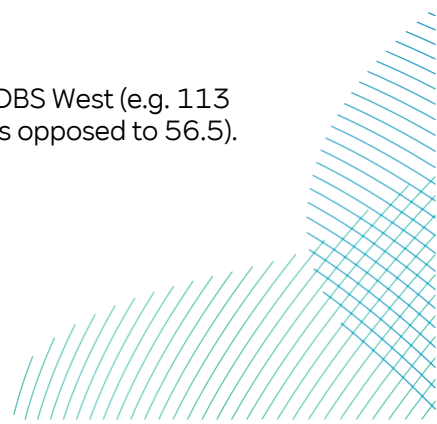


## 1.2 Project Background

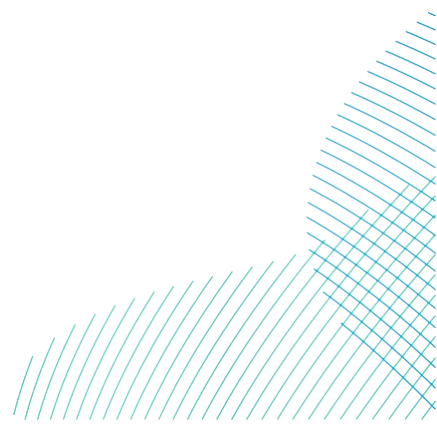
9. The Projects are located off the east coast of the United Kingdom (UK) in the Dogger Bank region of the southern North Sea. The Projects are being developed by RWE Renewables UK Dogger Bank South (East) Limited and RWE Renewables UK Dogger Bank South (West) Limited (“the Applicants”) and a DCO is sought for the Projects.
10. Whilst the Projects are the subject of a single DCO application (with a combined Environmental Impact Assessment (EIA) process and associated submissions), each Project is assessed individually, so that mitigation is Project specific (where appropriate). As such, the assessments cover the following three Development Scenarios:
  - DBS East or DBS West are developed In Isolation;
  - Both DBS East and DBS West are developed Concurrently; or
  - Both DBS East and DBS West are developed Sequentially.
11. Between 113 and 200 wind turbines would be installed across both Projects. For assessment purposes, it is assumed that between 57 and 100 wind turbines may be installed for DBS East or DBS West in isolation<sup>1</sup>. The locations of the Projects’ Array Areas and Offshore Export Cable Corridor are shown on **Figure 1-1**.
12. The DBS East Array Area covers an area of 349km<sup>2</sup> and is located approximately 122km from the coast, whereas the DBS West Array Area covers an area of 355km<sup>2</sup> and is located approximately 100km from the coast. Both Projects would make landfall on the East Riding of Yorkshire coastline near Skipsea to a maximum of two newly constructed Onshore Converter Stations before onward onshore cable routing to the proposed Birkhill Wood National Grid Substation, to the south of Beverley.

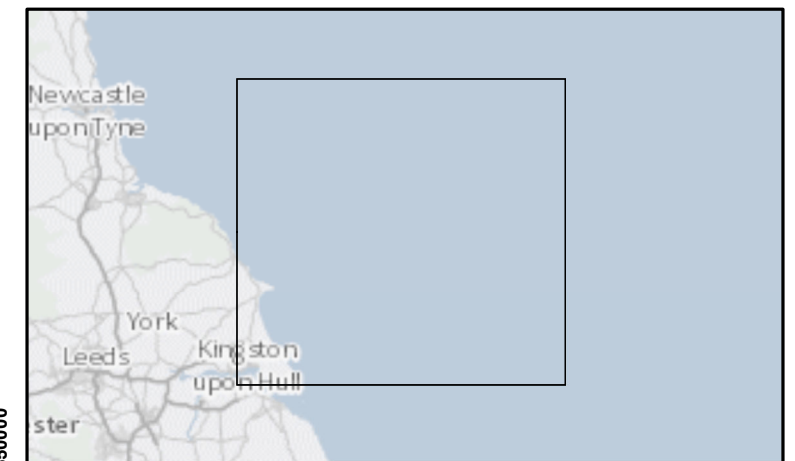
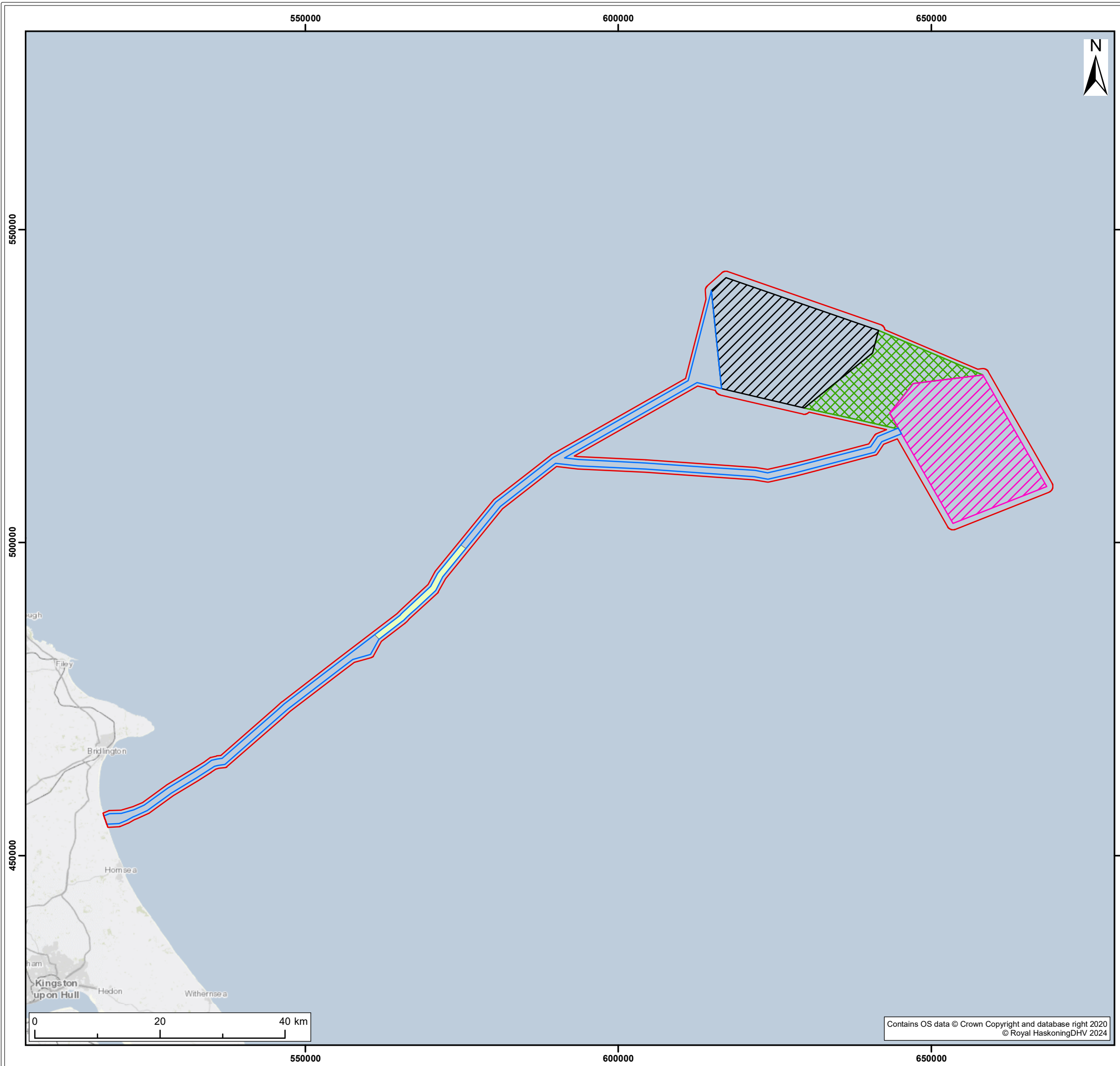
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<sup>1</sup> In situations where a number does not divide equally between DBS East and DBS West (e.g. 113 large turbines), they are rounded up to higher number (e.g. 57 large turbines as opposed to 56.5).



13. The key offshore components comprise:
  - Wind turbines;
  - Offshore platforms including: Offshore Converter Platforms (OCPs), Collector Platforms (CPs), an Electrical Switching Platform (ESP) and an Accommodation Platform (hereafter collectively referred to as 'offshore platforms' unless specified);
  - Foundation structures for wind turbines and offshore platforms;
  - Array cables;
  - Inter-Platform Cables;
  - Offshore Export Cables from the Array Areas to the landfall; and
  - Scour / cable protection (where required).
14. Construction of the Projects is anticipated to commence at the earliest in 2026.





Legend:

- Offshore Development Area
- Export Cable Platform Search Area
- Offshore Export Cable Corridor
- DBS East Array Area
- DBS West Array Area
- Inter-Platform Cable Corridor

S2	P01	28/03/2024	Suitable for Information	JH	SB	RF
SUI	REV	DATE	DESCRIPTION	DRW	CHK	APR

Title:  
**Offshore Development Area**

Figure: 1-1      Drawing No: PC2340-RHD-OF-ZZ-DR-Z-0853

Co-ordinate system: WGS 1984 UTM Zone 31N	Page Size: A3	Scale: 1:600,000
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Project: <b>Dogger Bank South Offshore Wind Farms</b>	Report: <b>Project Environmental Management Plan (PEMP)</b>
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## 1.3 Scope

15. The conditions of the Draft DMLs (**Volume 3, Draft DCO (application ref: 3.1)**) state that the final PEMP(s) will include the following scope:

*“a project environmental management plan (in accordance with the outline project environmental management plan) covering the period of construction 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 of the authorised scheme 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 7 and to address the interaction of the licensed activities with fishing activities;*
- (vi) a code of conduct for vessel operators to reduce risk of injury to mammals; and*
- (vii) 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.”*

16. The final PEMP(s) will include the following information, as required by the DCO:

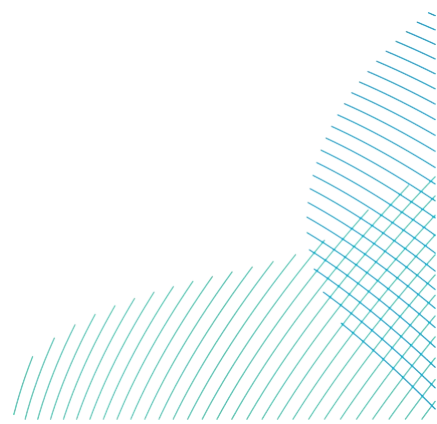
- A Marine Pollution Contingency Plan (MPCP) (section 5.1);
- Chemical Risk Assessment (CRA) (section 5.2);
- Waste management and disposal arrangements (section 5.3); and
- Fisheries Liaison and Coexistence Plan (section 5.4).



17. The final PEMP(s) will also include or make reference to the following information relevant to Environmental Management:
- Archaeological Written Scheme of Investigation (WSI) (section 5.5);
  - Management of other key environmental issues (section 5.7);
  - Communication and Reporting (section 7);
  - Monitoring and Vessel Inspections (section 9);
  - Training and Competence (section 7.1); and
  - Subcontractor Management (section 7.1.1).
18. Outline content for each section is described in sections 1.4 to 7.1.1.

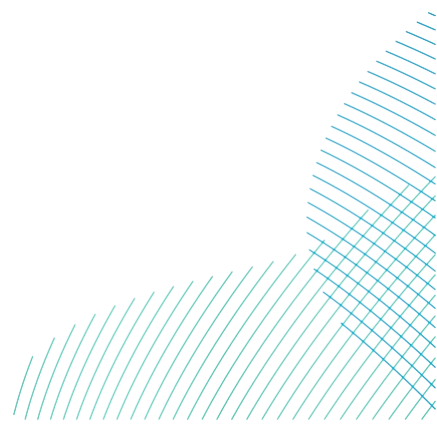
## **1.4 Review Process**

19. This Outline PEMP will be formally reviewed and updated at least three months prior to construction commencing and will be submitted to the Marine Management Organisation (MMO) for approval. It will also be reviewed within three months of any significant changes. Significant changes may include:
- Progression of the Project(s) into the operation and maintenance or decommissioning phases;
  - Changes in roles and responsibilities of the Project Team;
  - Changes in legislative or other requirements; and
  - Changes to processes within the Projects' EMS or associated parent documentation.



## 2 Project Description and Environmental Sensitivities

20. **Volume 7, Chapter 5 Project Description (application ref: 7.5)** of the ES outlines the project description based on a design envelope. Following final detailed design of the Projects, this section of the final PEMP(s) 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.
21. The relevant contractors for the Projects will have their own Aspects and Impacts Register as part of their internal EMS.



## 3 Environmental Management System and Roles & Responsibilities

### 3.1 Environmental Management Structure and Responsibility

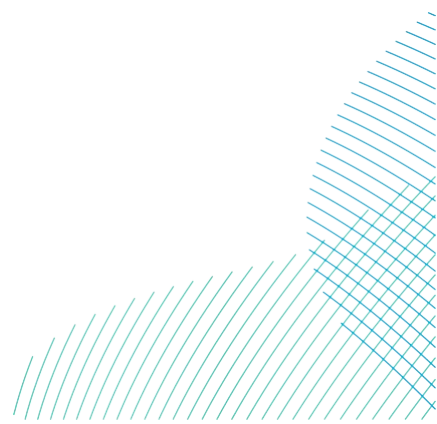
22. Environmental Management roles and responsibilities for the Project Team and their contractors will be documented in the final PEMP(s). This section of the final PEMP(s) will set out the environmental responsibilities, including identification of key site staff, their environmental management responsibilities 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, Fisheries Liaison Officer, Ornithologists, Marine Mammal Observers or Archaeologists.
23. Interactions with stakeholders such as Statutory Nature Conservation Bodies (SNCBs) and the MMO will also be covered in this section.

### 3.2 Environmental Management System

24. The Applicants operate an EMS based on the requirements of ISO 14001:2015, which describes the processes and procedures by which the Applicants 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 Applicants will be compliant with the requirements of the EMS. The final PEMP(s) are the primary documents within the DBS environmental documentation and are linked to the wider RWE Management System. Key documents of the RWE Management System include:

- RWE We Care Management System; and
- RWE Renewables Environmental Aspects.

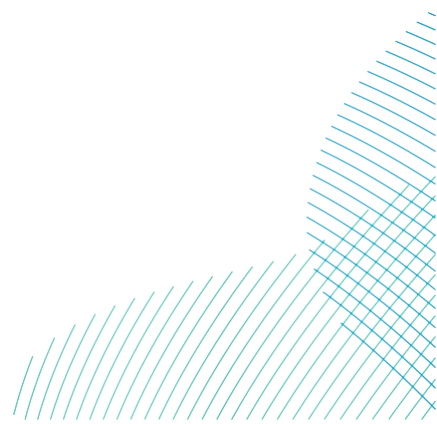
This Outline PEMP, together with the RWE EMS documents address environmental aspects, impacts and other factors that could influence the Projects' environmental performance.



## 4 Associated Documents

25. This section will refer to the relevant associated EMS and project / site specific documentation that is required to be taken into consideration by the Applicants when developing the final PEMP. The references would be intended for use by contractors but can be made available as appropriate upon request, following approval by the Project Manager. Examples include, but are not limited to:

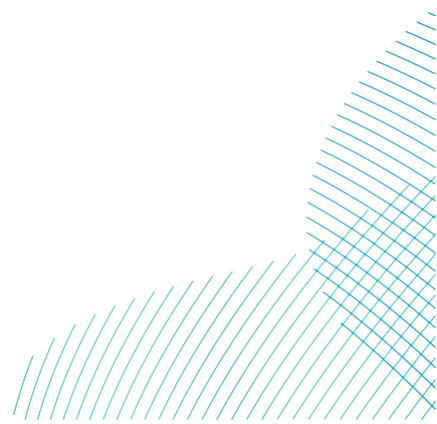
- Contract requirements (such as environmental standards);
- Contractors' EMS requirements;
- Projects Emergency Response Plan;
- Projects Health and Safety Plan;
- Projects Environmental Statement;
- DCO requirements;
- DML conditions;
- Risk registers; and
- Legal registers.



## 5 Plans and Documentation

### 5.1 Marine Pollution Contingency Plan

26. Due to the presence and movements of construction, operation and maintenance vessels / equipment there is the potential for spills and leaks which could result in changes to water quality. All vessels involved will be required to comply with the International Convention for the Prevention of Pollution from Ships (MARPOL) 73/78.
27. The 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 of the Projects. The requirement for an MPCP is secured through the PEMP condition quoted in section 1.3.
28. Pollution incidents are classified according to the response levels they are most likely to require based on the severity of the spill and therefore the resources required to respond to the spill. The three tiers used to define spills are as follows:
  - Tier 1- is the lowest response level and can be dealt with using resources that are available locally, e.g. on site.;
  - Tier 2- is for larger incidents where resources available on site are insufficient to deliver a proper response and resources from a regional centre may be required to assist with monitoring and clean up; and
  - Tier 3- is for very large pollution incidents where national resources may be required to assist with monitoring and clean up.
29. The MPCP will include the following:
  - An outline of the roles of regulatory bodies;
  - An identification of pollution types and sources;
  - An assessment of the likelihood of the three tiers of pollutants from wind farm vessels and wind farm structures;
  - Incident response procedures, including an incident response matrix;
  - Reporting procedures for Tier 2 and Tier 3 oil spills; and
  - Waste management plans.

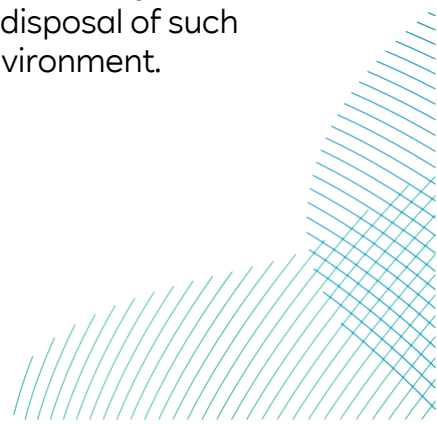


## 5.2 Chemical Risk Assessment

30. The CRA will be produced for the Projects, with the aim of minimising the risk of pollution incidents occurring by assessing the risks of spills occurring, stating how the chemicals will be stored and transported and ensuring best practice techniques are used when handling all chemicals used at the Projects. The requirement for this is secured through the PEMP condition quoted in section 1.3.
31. Contractors must consider the delivery, storage and handling of hazardous materials, including oils and fuels. Applicable legal requirements and best practice guidelines (for example Guidance note for the Control of Pollution (Oil Storage) (England) Regulations (Defra, 2001) must be followed. This includes selecting chemicals that have limited impacts to the environment.
32. Furthermore, all chemicals used (including paints) would be certified for use in the marine environment (unless otherwise agreed with the MMO) to ensure that there would be no risk anticipated to arise from normal operations of the Projects. The Principal Contractor will ensure that full justification is provided for the proposed use of any non-environmentally friendly products.
33. Oils and chemicals must be clearly labelled and each contractor will retain an up-to-date hazardous substance register. Activities involving the handling of large quantities of hazardous materials, such as deliveries and refuelling, would have detailed method statements in place and be undertaken by designated and trained personnel. 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.
34. Spill response materials will be provided nearby and be readily accessible, with local project personnel trained in spill response.

## 5.3 Waste Management and Disposal

35. The PEMP condition quoted in section 1.3 secures waste management and disposal arrangements.
36. Prior to disposal, any waste would be considered for reuse, recycling or recovery where it is practical and economically feasible. Where practical, waste management and disposal will follow Defra's waste hierarchy (Defra, 2011) to ensure that there is minimal waste and that the disposal of such waste will have no significant detrimental effect on the environment.



37. The Principal Contractor would be responsible for the overall management of the site. In compliance with the DBS Waste Management Plan, each contractor would be required to be responsible for the collection, storage and disposal of any waste produced during construction of the Projects. Vessel operators are required to liaise with port operators to facilitate appropriate storage, transfer, segregation and disposal of waste.

## 5.4 Fisheries Liaison and Coexistence Plan

38. A final Fisheries Liaison and Coexistence Plan will be prepared in accordance with **Volume 8, Outline Fisheries Liaison and Coexistence Plan (application ref: 8.28)** with an aim of ensuring relevant fishing fleets are notified of the commencement of licensed activities and to address the interaction of the Projects' construction activities with fishing activities. The requirement for this is secured through the PEMP condition quoted in section 1.3.
39. The Fisheries Liaison and Coexistence Plan will include the following:
- Timely and efficient Notice to Mariners (NtM), 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 unexploded ordnance (UXOs), unburied cables, locations of any cable protection, cut and weighted cables, etc (as required, in the case of exposure of cables, secured in conditions attached to the DMLs in **Volume 3, Draft DCO (application ref: 3.1)**; and
  - Appointment of a Fisheries Liaison Officer (FLO) to establish and maintain effective communication between the Project Team, contractors and fishers, ensuring that information is provided in a timely manner to minimise disruptions to fishing activities.

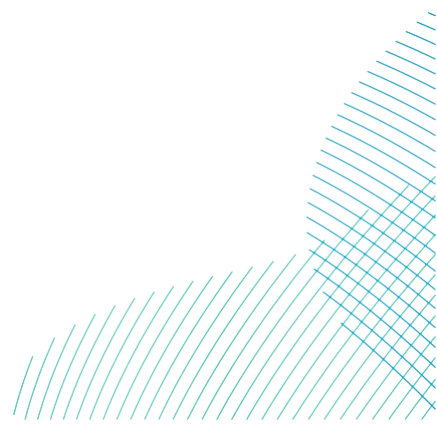
## 5.5 Archaeological Written Scheme of Investigation

40. The Archaeological WSI (Offshore) will be produced in accordance with **Volume 8, Outline WSI (Offshore) (application ref: 8.22)** and will set out the commitment that the Applicants have made for the investigation, mitigation and recording of any archaeological remains encountered, or suspected, during construction of the Projects.

41. 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 in conditions attached to the DMLs (see **Volume 3, Draft DCO (application ref: 3.1)**).
42. Archaeological requirements for the operations and maintenance, and decommissioning phases of the Projects would be determined based on the outcomes of the approach for the preceding phases.

## **5.6 Method Statements and Risk Assessments**

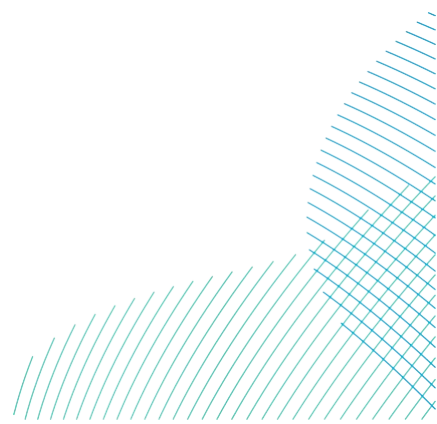
43. It is the responsibility of the Principal Contractor to ensure that method statements and risk assessments are in place before the commencement of relevant works. The contractors have a responsibility to develop and comply with the method statements and risk assessments which should cross reference applicable environmental risk assessments.
44. The risk assessments will identify environmental hazards and outline subsequent control measures. Control measures would be developed, implemented and monitored to ensure that any impact on the environment is avoided or minimised.
45. A hazard workshop would 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. Hazard workshops are an opportunity for the contractor to disclose any other environmental sensitivities that the contractors must be aware of.





## 5.7 Workforce Management Plan

46. This section details the Workforce Management Plan which would include appropriate communicable disease prevention measures to safeguard the project workforce and the public in line with relevant Government guidance at the time, including in relation to vessel crews, and commitment to appropriate occupational health services.



## 6 Management of other Key Environmental Issues

47. This section provides an overview of the controls and procedures to be adopted to mitigate the environmental impacts associated with the Projects. Further details will be provided in the final PEMP following detailed design.
48. This section covers the following items:
- Offshore Ornithology;
  - Benthic and Intertidal Ecology;
  - Invasive Non Native Species (INNS);
  - Marine Mammals;
  - Marine Archaeology and Cultural Heritage;
  - Dropped objects in the marine environment;
  - Wastewater discharges; and
  - Emissions to air.
49. 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 the Projects.
50. 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 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 final PEMP(s).

### 6.1 Offshore Ornithology

#### 6.1.1 Best Practice Protocol for Minimising Disturbance to Red-throated Diver

51. There is potential for vessel traffic to disturb red-throated diver *Gavia stellata* within the Greater Wash Special Protection Area (SPA) dependent upon the location of construction ports. In addition, a short section of the Offshore Export Cable Corridor crosses the Greater Wash SPA. This area of the SPA has low densities of red-throated diver recorded, and the nearshore sections (relevant to the landfall) were not identified as within the species' distribution (Natural England and JNCC, 2016).
52. The PEMP(s) will include procedures to be adopted within vessel transit corridors to minimise disturbance to red-throated diver during construction in accordance with conditions attached to the DMLs (see **Volume 3, Draft DCO (application ref: 3.1)**).

53. Potential impacts on red throated diver during construction will be mitigated where practicable through:
- Selecting routes that avoid known aggregations of birds;
  - Restricting 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);
  - Considering the potential for crew transfer vessels (CTVs) to travel in convoy en route to the wind farm sites and seeking to do so where it is considered practicable;
  - 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, toolbox talks).
54. The Project Team would make vessel operators aware of the importance of the species and the associated mitigation measures through toolbox talks.

## 6.2 Benthic and Intertidal Ecology

55. Pre-construction surveys will be undertaken in advance of any cable and foundation installation works (as secured through conditions attached to the DMLs (see **Volume 3, Draft DCO (application ref: 3.1)**). The methodology of the pre-construction surveys would be agreed with the MMO and Natural England.
56. The Offshore Export Cable Corridor was selected in consultation with key stakeholders to select route options which minimised impacts on designated sites, such as minimising its length within the Dogger Bank Special Area of Conservation (SAC), The Applicants have also committed to minimising external cable protection, where possible, along the entirety of the Offshore Export Cable Corridor.
57. Any seabed material arising from the activities within the Dogger Bank SAC will be placed back within the Array Areas (see **Volume 8, Disposal Site Characterisation Report (application ref: 8.18)**). Sediment would not be disposed in or near known sensitive benthic habitats and, where possible, will be redeposited within areas of similar sediment type, further detail of this mitigation is provided in **Volume 8, Disposal Site Characterisation Report (application ref: 8.18)**.

58. The Applicants will make all reasonable endeavours to bury Offshore Export Cables, thereby reducing Electromagnetic Fields (EMF) and the need for surface cable protection. **Volume 8, Cable Statement (application ref: 8.20)**, including an Outline Cable Burial and Specification, Installation and Monitoring Plan (CSIMP), Cable Burial Risk Assessment and Cable Protection Plan has been submitted with DCO application which details the anticipated export cable protection requirements. As part of the final CSIMP a detailed cable laying plan providing details of the need, type, sources, quantity and installation methods for scour protection and cable protection (where required) will also be provided.

### 6.3 Invasive Non Native Species

59. The risk of spreading INNS will be mitigated by compliance with 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; and
  - 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.

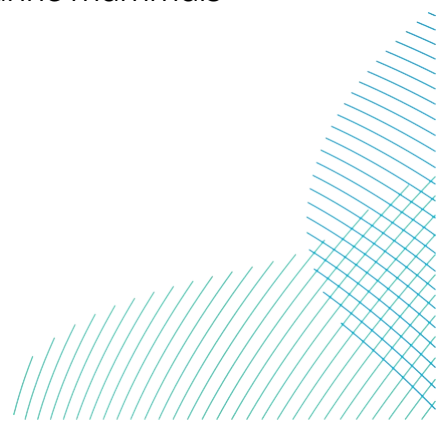
### 6.4 Marine Mammals

60. A construction method statement will be produced (as secured through conditions attached to the DMLs, see **Volume 3, Draft DCO (application ref: 3.1)**) following final design, which will reference the embedded mitigation for the soft-start and ramp-up of piling activities as detailed in **Volume 8, Outline Marine Mammal Mitigation Protocol (application ref: 8.25)** submitted with the DCO application (and as secured through conditions attached to the DMLs, see **Volume 3, Draft DCO (application ref: 3.1)**).
61. **Volume 8, Outline Marine Mammal Mitigation Protocol (application ref: 8.25)** will be updated and agreed in its final form prior to the start of construction, and will detail the proposed mitigation measures to reduce the risk of any physical or permanent auditory injury to marine mammals during all piling operations and UXO clearance.

62. In addition to the Marine Mammal Mitigation Protocol for piling and UXO clearance, a Site Integrity Plan for the Southern North Sea (SNS) SAC in accordance with **Volume 8, In Principle Site Integrity Plan for the Southern North Sea Special Area of Conservation (application ref: 8.26)** submitted with the DCO application will be produced in the pre-construction phase (as secured in conditions attached to the DMLs, see (see **Volume 3, Draft DCO (application ref: 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 Applicants to deliver the required mitigation measures for the Projects to ensure the avoidance of significant disturbance of harbour porpoise in relation to the SNS SAC site Conservation Objectives.
63. It is likely that a risk assessment for European Protected Species (EPS) (cetaceans) would be required for piling and / or UXO clearance and an EPS licence(s) applied for where applicable.
64. Further assessment will be conducted prior to construction, based on the final foundation type(s) and installation method(s), 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.

#### **6.4.1 Vessel Good Practice and Code of Conduct to Avoid Marine Mammal Collisions**

65. 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.
66. 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 between the contractors and the vessel operators to promote collision awareness and avoidance, including code of conduct.
67. Code of conduct for vessel operators will be produced and issued to all relevant contractors to reduce the risk of collision with marine mammals across all phases of the Projects.



68. The code of conduct for good practice will be developed prior to construction based on the latest information and guidance, but is anticipated to include, but not be limited to:

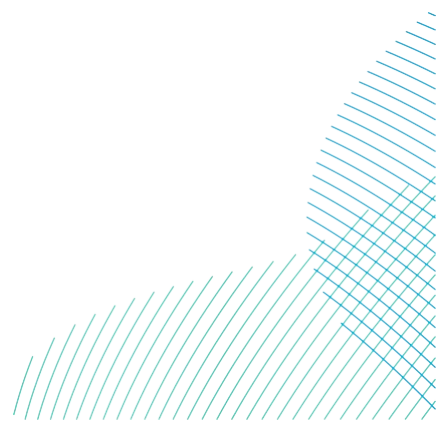
- Avoid deliberately approaching marine mammals when sighted;
- Avoid abrupt changes to course or speed should marine mammals approach the vessel or bow-ride;
- Where possible, vessels will maintain a steady speed, and direction, to allow any marine mammals to predict where the vessel may be headed, and to move out of the way or avoid surfacing in the path of the vessel;
- Where possible and safe to do so, transiting vessels will maintain distances of 1km distance from the coast, particularly in areas near known seal haul-out sites when outside official shipping channels; and
- Include a protocol to report any collisions.

#### **6.4.2 Working in Proximity to Wildlife in the Marine Environment Code of Conduct**

69. The operation phase PEMP(s) will include the RWE 'Working in Proximity to Wildlife in the Marine Environment Code of Conduct' which all operational sites are required to follow. It would set out guidelines for working in proximity to wildlife, following best practice guidelines to reduce and minimise injury and collision to wildlife.

### **6.5 Climate Change**

70. Climate change resilience measures which are embedded into the Projects' design, are based on standard industry practice and occupational health and safety regulations and standards. This will ensure the design is resilient to climate change and able to withstand all foreseeable weather conditions during the operational life of the Projects. The design will use quality materials that are resilient to climate change to avoid deterioration and minimise the need for maintenance.



71. The final PEMPS(s) will account for exposure of site workers and construction plant to extreme weather events and ensure appropriate preparation and response measures are in place to minimise their impacts. These measures include, but are not limited to, the following:
- Scheduling construction activities based on seasonality and timely weather forecasts;
  - Monitoring of on-site weather conditions and severe weather alert services;
  - Incorporating a severe weather protocol into construction management plans and assigning clear responsibilities in the event of an emergency;
  - Requiring contractors to include additional provisions in their management plans based on weather conditions at the time of works such as additional rest breaks during heatwaves, securing stored equipment and material during high wind events and specifying de-icing equipment during cold spells;
  - The resilience of offshore structures against more challenging conditions resulting from climate change is implicitly addressed in the limit state analyses for the Projects. These analyses, specifically the Ultimate Limit State analyses, consider extreme weather events, including those caused by climate change, such as heightened wave heights. The design of offshore structures incorporates an estimated sea level rise attributed to climate change, which is factored into the analyses. Furthermore, the mobility of the seabed at the offshore wind farm is considered throughout the design lifespan; and
  - Regular inspections and maintenance of offshore components of the Projects will be carried out over the Projects operational lifetime to identify and remediate any damage and to ensure optimal working conditions.

## 6.6 Dropped Objects in the Marine Environment

72. The conditions attached to the DMLs within **Volume 3, Draft DCO (application ref: 3.1)** state:

*“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."*

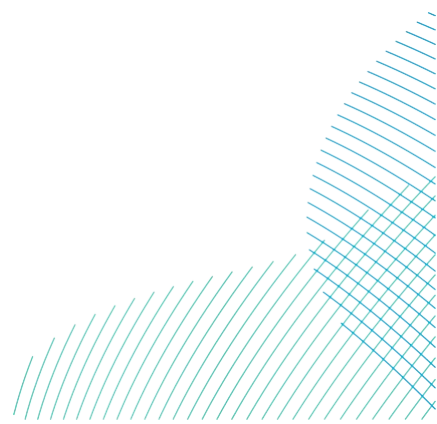
73. The final PEMP(s) will outline procedures to follow in the case of both floating and non-floating objects. It will detail who to report the incident to, where to document the incident, and methods for recovery. Designated members of the Project Team and the Regulator must review the procedure before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

## **6.7 Waste Water Discharges**

74. Controls for any waste water discharges (such as effluent discharges, ballast waters, bilge waters, and deck runoff) will be included in the final PEMP(s), in accordance with the latest legislation, regulatory limits and good practice.
75. Monitoring records in relation to the disposal of foul water, bilge water or ballast water during the construction phase must be retained.

## **6.8 Emissions to Air**

76. Vessel emissions associated with the Projects 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.





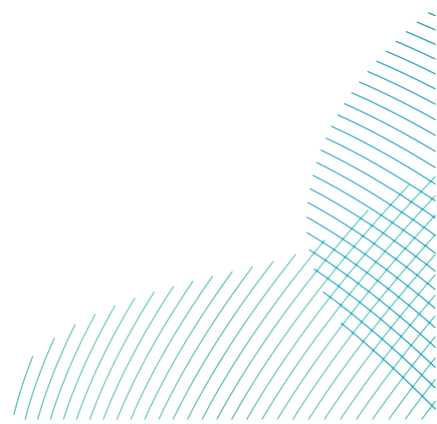
## 7 Personnel, Training and Induction

### 7.1 Training and Competence

77. All offshore contractors, subcontractors and their suppliers will be required to observe the relevant provisions of the final PEMP and provide evidence on how they will ensure its requirements are implemented and monitored through their own Environmental Management Plans.
78. Compliance with this Outline PEMP and the final PEMP(s) will not absolve the Principal Contractor(s) or subcontractors from the obligation of compliance with all legislation and byelaws relating to their construction activities.
79. All offshore construction staff employed on the Projects will receive training from the Principal Contractor(s) on their responsibilities for minimising the risk to the environment and implementing the measures set out in this Outline PEMP and the final PEMP(s).
80. The Principal Contractor(s) will ensure that contractors employ an appropriately qualified and experienced workforce and will be responsible for identifying the training needs of their personnel. The training will include site briefings and toolbox talks as necessary to equip the workforce with the relevant knowledge on health, safety and environmental topics.

#### 7.1.1 Sub-Contractor Management

81. The final PEMP(s) will set out how the Principal Contractor manages their sub-contractors.
82. For example, expectations of contractors working on behalf of the Applicants are primarily detailed in the final PEMP(s) and the following documents:
  - Contract Schedules including specific environmental requirements;
  - Environmental Policy; and
  - The ES (**Volume 7, Chapters 1 to 30 (application ref: 7.1 to 7.30)**).

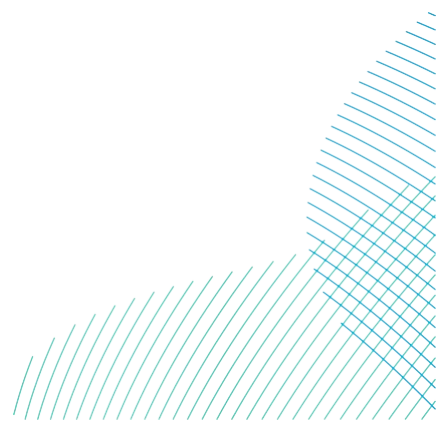


## 7.2 Environmental Induction and Training

83. All employees and contractors will receive an appropriate induction and training to ensure that they are aware of their environmental responsibilities and are competent to carry out the work. Environmental requirements will be explained to employees during the Projects' induction, on-going training via toolbox talks, briefings and notifications as required. Records will be made to demonstrate competence and training of employees; this includes maintaining copies of certificates in personnel files and sign off sheets for toolbox talks and other awareness programmes. Records will be managed in line with data protection legislation.
84. The HSE Induction will be integrated into the Projects' induction and as a minimum will include:
- The RWE Renewables HSE policy statement and We Care Management System;
  - The significant environmental aspects and potential impacts of their work;
  - How to submit environmental improvement ideas, near misses and incidents;
  - Emergency response procedures;
  - The implications of not complying with environmental requirements; and
  - Environmental site rules and requirements.

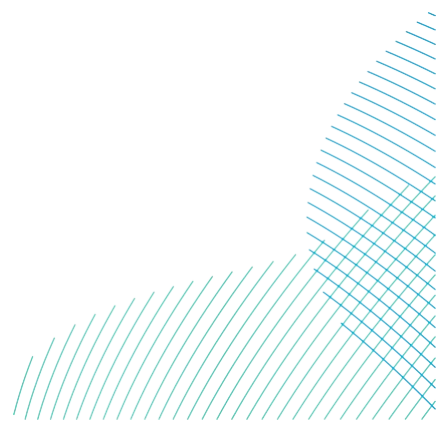
### 7.2.1 Vessel Inductions

85. The overarching project induction will include reference to compliance with the relevant requirements and conditions of the Projects including those specific to vessel management practices.
86. A vessel induction will take place with all vessel personnel present and include an environmental component. The contractor's project team will nominate designated personnel to be responsible for the preparation and delivery of site induction and maintaining attendee records.
87. 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.



## 7.2.2 Toolbox Talks

88. Toolbox talks are an effective method for the dissemination of information relating to work activities. The contractor must deliver environmental toolbox 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 Communication and Reporting

### 8.1 Internal Communication

89. To ensure that the environmental requirements of the Projects are met, the Environment Manager will act as a single point of contact between all internal stakeholders for all matters relating to environmental issues.

### 8.2 External Communication

90. The Environment Manager will ensure all relevant stakeholders are consulted at appropriate times during the pre-construction and construction phases and effective dissemination of information to the identified points of contact.

#### 8.2.1 External Meetings

91. Environmental meetings and debriefs must be held locally to the Offshore Development Area. Health, safety and environment meetings must take place on all construction 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, toolbox talks issued / delivered, and key findings of environmental inspections and audits.
92. The Principal Contractor and Project Team are expected to host meetings whereby important environmental information will be shared with the wider Project Team, contractor and subcontractor group members to raise awareness of environmental issues.

#### 8.2.2 Community Complaints

93. The Applicants value their relationship with the communities that surround the Projects. All work would be carefully planned to minimise disturbance to neighbouring communities.
94. Contractors must ensure that any complaints are reported to the designated members of the Project Team and investigated promptly.
95. The final PEMP will detail the procedure in place to report public complaints in relation to offshore works.

#### 8.2.3 Fisheries Liaison

96. As discussed in section 5.4, a FLO will be appointed for the duration of the construction works.

## 8.2.4 Stakeholders

97. Reference will be made in the final PEMP(s) to any reporting requirements in relation to stakeholders set out under the DCO and / or DMLs.

## 8.3 Environmental Incident Response

### 8.3.1 Offshore Safety Management

98. Project vessels will ensure compliance with Flag State regulations including the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs) (International Maritime Organization (IMO), 1972/77) and International Convention for the Safety of Life at Sea (SOLAS) (IMO, 1974).
99. In accordance with conditions attached to the DMLs (see **Volume 3, Draft DCO (application ref: 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”* would be adequately addressed unless otherwise agreed with the MCA and Trinity House.
100. As stated in section 5.1 for the offshore activities, the MPCP, will also be developed for the Projects.

### 8.3.2 Reporting

101. 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, in line with the HSE Conditions of the Contract and Project Specific Incident Notification Procedure.
102. Contractors are required to produce monthly reports. A KPI Template will be provided in the final PEMP(s) for the designated members of the Project Team to record health, safety and environmental performance.

### 8.3.3 Lessons Learned / Incident Follow-Up

103. If an environmental incident occurs, it must be thoroughly investigated by the relevant contractor, in line with the Project Specific Incident Notification Procedure, 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, or escalate to the relevant authorities, as required.

## 9 Documentation and Records Management

### 9.1 Documented Information

104. Suitable and sufficient documentation would be produced to ensure that compliance to legal and other obligations, including those set within consent conditions, permits, licences and authorisations. Documentation will be produced that provides evidence of compliance against the statements written within procedures, management plans and other EMS documentation and as required by the final PEMP(s).
105. As a minimum, documentation will include the title, date, author, reference number, EcoDoc number & version history. The author shall select the most appropriate format, language and media; and the documentation will be protected from damage, loss of data and breaches in confidentiality. Documents will be located conveniently for use (if applicable) for example Risk Assessments and Method Statements located at the worksite. Compliance obligations such as those within licences, may require documentation to be displayed in specific locations. If there are specific requirements for the display or access to documentation, this will be written within relevant management plans and communicated to the relevant Projects employees, contractors, or other relevant persons.

### 9.2 Records

106. The contractor shall retain all relevant HSE records relating to its work, in line with relevant legislation access shall be given to these records on request. Some examples of records include:
- Risk assessments;
  - Training records;
  - Evidence of consultation / communication with stakeholders;
  - Maintenance records (proactive & reactive);
  - Marine licence acknowledgement forms;
  - Monitoring and measuring results;
  - Incidents, near misses and observations;
  - Audit results;
  - Management review outputs; and
  - Corrective actions reports.

## 10 Environmental Audits, Monitoring and Vessel Inspections

107. A programme of performance and compliance monitoring must be established for the Projects, this will be documented in the final PEMP and include, but not necessarily be restricted to, the following items (sections 10.1 to 10.3), where relevant.

### 10.1 Environmental Audits

108. Environmental audits may comprise both internal audit and / or external audits.

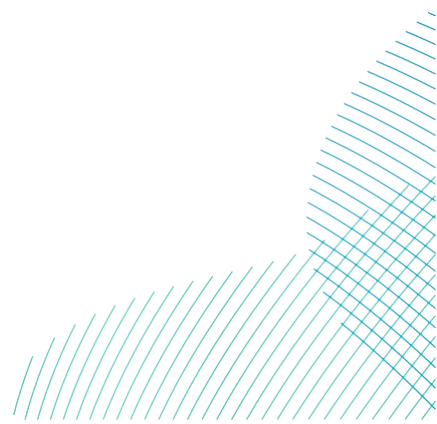
109. The Project Team audit programme includes a requirement to audit construction sites on a periodic basis. An audit checklist will be used by the Applicants to ensure that a standard approach is applied consistently. Environmental audits would be carried out by experienced auditors, either from within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

### 10.2 Vessel Inspections and Audits

110. Environmental vessel inspections would 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 would be maintained. This will be the approach adopted by the Project Team.

### 10.3 Environmental Monitoring

111. **Volume 8, In Principle Monitoring Plan (application ref: 8.23)** has been submitted with the DCO application. It is recognised that monitoring is an important element in the management and verification of the actual Projects' 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.



## References

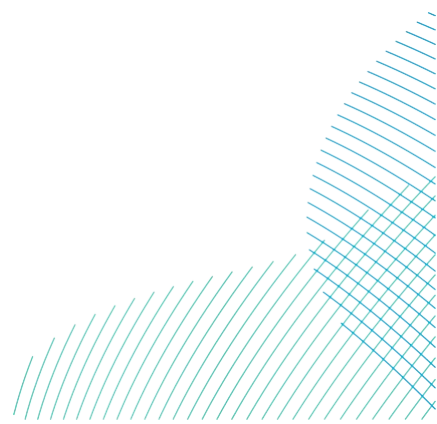
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**RWE Renewables UK Dogger  
Bank South (West) Limited**

**RWE Renewables UK Dogger  
Bank South (East) Limited**

**Windmill Hill Business Park  
Whitehill Way  
Swindon  
Wiltshire, SN5 6PB**

