XLINKS' MOROCCO-UK POWER PROJECT

Outline Offshore Construction Environmental Management Plan

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Contents

Glossary

Term	Meaning
Benthic	Associated with or occurring on the bottom of the seabed.
Bipole	A Bipole system is an electrical transmission system that comprises two Direct Current conductors of opposite polarity.
CDM regulations	Construction (Design and Management) Regulations 2015.
HVDC Cables	The High Voltage Direct Current (HVDC) cables which would bring electricity to the UK converter stations from the Moroccan converter stations.
Landfall	The proposed area in which the offshore cables make landfall in the United Kingdom (come on shore) and the transitional area between the offshore cabling and the onshore cabling. This term applies to the entire landfall area at Cornborough Range, Devon, between Mean Low Water Springs and the Transition Joint Bay inclusive of all construction works, including the offshore and onshore cable routes, and landfall compound(s).
Xlinks' Morocco UK Power Project	The overall scheme from Morocco to the national grid, including all onshore and offshore elements of the transmission network and the generation site in Morocco (referred to as the 'Project').
Proposed Development	The element of Xlinks' Morocco-UK Power Project within the UK. The Proposed Development covers all works required to construct and operate the offshore cables (from the UK Exclusive Economic Zone to Landfall), Landfall, onshore Direct Current and Alternating Current cables, converter stations, and highways improvements.

Acronyms

Acronym	Meaning
AIS	Automatic Identification Systems
ALDFG	Abandoned, Lost or Discarded Fishing Gear
BWM	International Convention for the Control and Management of Ships' Ballast Water and Sediments
CEMP	Construction Environmental Management Plan
COLREGS	International Regulations for Preventing Collisions at Sea
DCO	Development Consent Order
DML	Deemed Marine Licence
EA	Environment Agency
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ERP	Emergency Response Plan
ES	Environmental Statement
FLO	Fisheries Liaison Officer
FOC	Fibre Optic Cable
HDD	Horizontal Directional Drill
HSEQ	Health, Safety, Environmental and Quality
HVDC	High Voltage Direct Current
IAPP	International Air Pollution Prevention
IFCA	Inshore Fisheries and Conservation Authority

Acronym	Meaning
IMCA	International Marine Contractors Association
JNCC	Joint Nature Conservation Committee
KPI	Key Performance Indicators
MMO	Marine Management Organisation
MPCP	Marine Pollution Contingency Plan
NE	Natural England
NSVMP	Navigational Safety and Vessel Management Plan
OOS	Out Of Service
PAD	Protocol for Archaeological Discoveries
PEMP	Project Environmental Monitoring Plan
PLONOR	Pose Little or No Risk to the Environment
SHEQ	Safety, Heath, Environment and Quality
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
TBT	Toolbox Talk
WSI	Written Scheme of Investigation

1 OUTLINE OFFSHORE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

1.1 Introduction

1.1.1 This document forms document 7.9: Outline Offshore Construction Environmental Management Plan (Outline Offshore CEMP) prepared for the application for development consent for the United Kingdom (UK) elements of Xlinks' Morocco-UK Power Project (the 'Project'). For ease of reference, the UK elements of the Project are referred to as the 'Proposed Development, which is the focus of this Outline Offshore CEMP. The Outline Offshore CEMP has been prepared alongside the Environmental Statement (ES) for the Proposed Development, which presents the findings of the Environmental Impact Assessment (EIA) process.

1.1.2 This Outline Offshore CEMP sets out the framework for the Pre-Construction Offshore CEMP, including necessary mitigation measures to reduce or prevent potential effects upon the offshore environment and associated sensitive receptors during the construction phase of the development.

1.1.3 A separate Outline Onshore CEMP is provided as part of the Development Consent Order (DCO) application (document reference 7.7).

1.1.4 Preparation of the Pre-Construction Offshore CEMP will be the responsibility of the appointed offshore Principal Contractor (referred to as the Principal Contractor within this Outline Offshore CEMP). The Principal Contractor is likely to have internal management system requirements (with regards e.g. pollution prevention), specific plant knowledge, and CEMP templates, so the Pre-Construction Offshore CEMP may vary from what is set out within this outline document.

1.1.5 This Outline Offshore CEMP is based on industry good practice and relevant legislation (at the time of preparation). This Outline Offshore CEMP constitutes the Applicant's minimum requirements, which will be required as part of the Principal Contractor procurement process.

1.1.6 The Pre-Construction Offshore CEMP will be agreed with the relevant host authority in advance of works starting. The deemed Marine Licence (DML) conditions the approval of the Pre-Construction Offshore CEMP by the Marine Management Organisation, MMO; a draft DML is presented as a Schedule to the DCO at application. Once agreed, as a minimum, the Pre-Construction Offshore CEMP will be formally reviewed: every four months by the Contractor's Health, Safety, Environmental and Quality (HSEQ) team, or within a week following a high potential environmental incident; and approved by the Applicant (Xlinks 1 Ltd) prior to reissue. Compliance with the Applicant's environmental management requirements will be audited as part of the Applicant's annual environmental audit programme.

1.2 Scope of Offshore CEMP

1.2.1 The Pre-Construction Offshore CEMP will set out the controls and processes that are to be adopted by the Principal Contractor (including any subsequent sub-

contractors or suppliers involved in the works) to mitigate environmental impacts throughout the offshore construction phase of the Proposed Development. The Pre-Construction Offshore CEMP is considered to be an iterative document that develops throughout the construction phases of a project. This Outline Offshore CEMP sets the framework for and represents the initial iteration of the plan.

1.2.2 The objectives of the Pre-Construction Offshore CEMP are to:

- Provide a mechanism for ensuring that measures to avoid, minimise or mitigate potentially adverse environmental impacts are implemented;
- Ensure that environmental best practice is adopted throughout the construction phase of the Project;
- Ensure a prompt response if any unacceptable adverse impacts are identified, with the provision of appropriate additional mitigation measures as required;
- Provide a means for mitigating impacts that may not be anticipated or become apparent until construction is underway;
- Provide assurance to consultees and other stakeholders that requirements with respect to environmental mitigation are being addressed;
- Provide a mechanism for compliance auditing to ensure mitigation measures are being effectively implemented and maintained during construction;
- Implement a policy of waste control and minimisation that is aligned to the waste management hierarchy; and
- Enable full compliance to be maintained with all relevant legislation.

1.2.3 Construction activities would be undertaken in line with the Pre-Construction Offshore CEMP and with appropriate health and safety guidance, including consideration of weather conditions and extreme weather events.

1.2.4 The Pre-Construction Offshore CEMP will include the following, with outline content for each section described in this document:

- Project Description and Environmental Sensitivities (**section 1.3**);
- Environmental Management Structure and Responsibilities (**section 1.4**);
- Associated Documentation (**section 1.5**);
- Management of Key Environmental Issues (**section 1.6**);
- Environmental Incident Response (**section 1.7**);
- Monitoring and Site Inspections (**section 1.9**);
- Legislative and Regulatory Compliance (**section 1.10**);
- Training and Awareness (**section 1.11**);
- Communication and Reporting (**section 1.12**);
- Sub-contractor Management (**section 1.13**);
- Sustainable Construction (**section 1.14**); and
- Further Commitments (**section 1.15**).

1.2.5 Plans to be prepared by the Principal Contractor to accompany the Pre-Construction Offshore CEMP include the following:

- Offshore Waste Management Plan;

- Marine Pollution Contingency Plan (MPCP);
- Dropped Objects Procedure;
- Detailed Bentonite Breakout Plan (responsibility of the HDD contractor; an outline Bentonite Breakout Plan is presented as document ref. 7.20);
- Navigational Safety and Vessel Management Plan (NSVMP) – an outline NSVMP is presented as Volume 3, Appendix 5.2 of the ES;
- Offshore Biosecurity Plan – an outline Offshore Biosecurity Plan is presented as application document ref. 7.19; and
- Shipboard Oil Pollution Emergency Plan (SOPEP) templates.

1.2.6 The above plans will be submitted to the marine licencing authority (either as standalone plans or integrated as part of the Pre-Construction Offshore CEMP) for approval prior to construction.

1.3 Project Description and Environmental Sensitivities

1.3.1 The ES outlines the offshore project description (Volume 1, Chapter 3 of the ES) based on a design envelope. Following final design acceptance of the project (including micro-routing of the cable and any associated mitigation development – as a result for example of the offshore Written Scheme of Investigation (WSI)) - this section of the Pre-Construction Offshore CEMP will set out information with regards to the detailed design and the associated environmental sensitivities.

Design Parameters

1.3.2 Maximum / critical design parameters for the Proposed Development are set out in **Table 1**. Where exceptions to these parameters are identified, MMO agreement will be required prior to works being undertaken.

Table 1: Maximum / critical design parameters for the Proposed Development

Authorised scheme offshore element	Key Parameter	Maximum / Critical Design Parameter
Offshore Cable Design	Number of High Voltage Direct Current (HVDC) marine power cables	4
	Number of Fibre Optic Cables (FOCs)	2
	Number of cable bundles or Bipoles	2
	Number or FOC repeaters and associated cable spurs	Up to 5 per bundle
HDD Marine Works	Number of HDD boreholes	4
	Number of offshore exit pits	4
	Sediment clearance around each exit pit	Approximately 15 m x 15 m
Route Preparation	Width of grapnel hook for removal of seabed debris	Approximately 1 m
	Max penetration depth of grapnel hook	Approximately 1 m

Authorised scheme offshore element	Key Parameter	Maximum / Critical Design Parameter
	Swath width of 'pre-lay plough' for boulder clearance (where required) and pre-lay trenching (where required)	Up to 15 m
Cable Installation	Cable installation working hours	24 hours / 7 day basis
	Number of cable trenches	2
	Cable burial depth	Target 1.5 m (approx max 1.6 m)
	Trench width	Up to approx 1.5 m
	Maximum number of cable crossing structures	50 (25 x 2 Bipoles)
	Maximum footprint of crossing structures	Approximately 3,500 m^2 (500 m length; 7 m wide)
	Rock berm height (relative to seabed level)	Up to approximately 1 m
	Rock berms at crossings height (relative to seabed level)	Up to approximately 1.4 m

1.3.3 Rock placement volume estimates will be included as part of the Pre-Construction Offshore CEMP, informed by the Pre-construction Cable Burial Risk Assessment (CBRA) (an outline CBRA is presented as Volume 1, Appendix 3.4: Outline Cable Burial Risk Assessment of the ES (Document ref. 6.1.3.4)), and consistent with the design parameters set out in this outline CEMP (c.f. **Table 1** above).

Environmental Sensitivities

1.3.4 The Pre-Construction Offshore CEMP should duly summarise the results of the environmental impact assessment, listing in particular, sensitive ecological, archaeological or human receptors, such as protected habitats, protected wrecks, constraints from other infrastructure, site layout plans. The scope of works and the environmental mitigations afforded by the Pre-Construction Offshore CEMP should adequately provision for the levels of protection that are deemed necessary (by the ES and any final approvals from the inspectorate) to suitably minimise impacts on all sensitive receptors.

1.3.5 The Principal Contractor for the construction of the offshore Project will be expected to have their own Aspect and Impacts Register as part of their Environmental Management System (EMS).

1.4 Environmental Management Structure and Responsibilities

1.4.1 Environmental Management roles and responsibilities for the offshore Proposed Development are required to be documented. This section of the Pre-Construction Offshore CEMP will set out the environmental responsibilities for the offshore Project, 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 and Safety / Environmental

Manager(s) and / or Advisors and environmental specialists such as Environmental Liaison Officer, Fisheries Liaison Officer, or Archaeologists.

1.4.2 Interactions with stakeholders such as the Marine Management Organisation (MMO), Joint Nature Conservation Committee (JNCC), Natural England (NE), Environment Agency (EA) and the Local Planning Authority will also be covered in this section.

1.4.3 An organisational chart depicting the environmental management arrangements will be provided as a useful mechanism to illustrate the Offshore Project's environmental management structure. The contact details for the individuals listed will also be included in this section or attached as an appendix to the Pre-Construction Offshore CEMP. At this stage it is anticipated that the Applicant will employ a Principal Contractor who will be responsible for managing Safety, Heath, Environment and Quality (SHEQ) issues, including the preparation of associated environmental documentation. It is assumed that the Proposed Development (offshore) will be a notifiable project for the purposes of the Construction (Design and Management) Regulations 2015 (CDM regulations). The aim of the CDM Regulations is to improve health and safety for all personnel and roles in the construction sector.

1.4.4 The Pre-Construction Offshore CEMP will require compliance with the CDM regulations and will require that all personnel involved in the construction process follow their relevant SHEQ standards and risk management procedures. (The requirements of the Pre-Construction Offshore CEMP will be considered inherent to the Principal Contractor's SHEQ requirements when working on the Proposed Development.)

1.5 Associated Documentation

1.5.1 This section of the Pre-Construction Offshore CEMP will refer to relevant associated EMS and proposed development / site specific documentation that is required to be taken into consideration in developing the Pre-Construction Offshore CEMP. Examples include, but are not limited to:

- Contract requirements (such as environmental standards; as outlined in e.g. the final ES);
- Principal Contractor's EMS requirements;
- Proposed Development Emergency Response Plan;
- Proposed Development Health and Safety Plan;
- Proposed Development Environmental Statement;
- Project Environmental Monitoring Plan (PEMP) or similar environmental monitoring plan(s) produced by the Principal Contractor prior to commencement of each construction and / or operational phases;
- Development Consent Order / DML conditions (a draft DML is presented as a Schedule to the DCO at application);
- Risk registers; and
- Legal registers.

1.6 Management of Key Environmental Issues

1.6.1 This section will set out details of the controls and procedures to be adopted to mitigate the environmental impacts associated with the Proposed Development.

1.6.2 It is anticipated that the Pre-Construction Offshore CEMP will cover the following issues:

- Noise and vibration;
- Management of sediment disturbance;
- Marine and coastal water ecology;
- Marine and coastal water invasive species;
- Marine and coastal water archaeology and cultural heritage;
- Dropped object(s) in the marine environment and coastal waters;
- Marine and coastal water pollution prevention;
- Waste management;
- Vessel management;
- Emissions to air; and
- Method Statements and Risk Assessments.

1.6.3 The controls and procedures associated with the topics above will be focused on the offshore environment, including coastal waters, as per the following summary sections.

1.6.4 A brief overview of some of the key issues for each item is provided below. However, it must be noted that the list of issues identified above is not exhaustive and will be specific to the final design of the offshore Project (should that be subject to any change). Furthermore, the key issues will be re-examined following the DCO determination period. The Pre-Construction Offshore CEMP will include the mitigation measures to be adopted during construction.

1.6.5 A separate Outline Onshore CEMP is submitted as part of the DCO application (document reference 7.7) which is focused on the onshore environment.

Noise and Vibration

1.6.6 There is the potential for noise and vibration to be generated during the construction process. Measures may be required to be implemented on site to minimise any potential effects.

1.6.7 The ES identifies receptors that are potentially sensitive to noise and vibration impacts together with mitigation measures (where required), which must be implemented.

1.6.8 Mitigation measures will include implementation of a NSVMP (outline NSVMP presented as Volume 3, Appendix 5.2 of the ES) which dictate the rules for appropriate vessel movements, including transit routes and speeds.

1.6.9 The Pre-Construction Offshore CEMP will also include commitment to undertake any post-consent activities that may have potential for noise and vibration impacts, in an appropriate and responsible manner (e.g. adhering to Joint Nature Conservation Committee (JNCC)) guidelines for minimising the risk of injury to

marine mammals). Post-consent activities with potential for noise and vibration impacts include pre-construction, contractor led geophysical surveys, and also Unexploded Ordnance (UXO) removal (if required).

1.6.10 Note, notifications (or marine licence application as required) would be made for any targeted unexploded ordnance (UXO) geophysical survey, and marine licence application made separately for any resultant UXO removal/detonation. Any UXO investigation and clearance works would be undertaken ahead of the main construction activities and thus, may be addressed separately (in advance and by separate contractors where relevant) to the Pre-Construction Offshore CEMP.

1.6.11 A Project Environmental Monitoring Plan (PEMP) will be prepared, as required, setting out requirements and responsibilities and may include noise and vibration monitoring, although it is noted that the ES does not require any specific noise and vibration monitoring in the offshore environment.

Dredging / Management of Sediment Disturbance

1.6.12 A Dredging Management Plan will be produced post consent by the Contractor and form part of the Pre-Construction Offshore CEMP to limit seabed disturbance and suspended sediment concentrations and control the generation of sediment plumes.

1.6.13 Note, there will be no dredge 'arisings' as part of the Proposed Development i.e. no collection and movement of dredged material within the marine environment. In the context of the Proposed Development, the Dredging Management Plan will cover all construction phase activities with potential to disturb benthic sediments such as cable lay activities (including mechanical trenching) and clearance of HDD exit pits. The Pre-Construction Offshore CEMP should set out deployment guidelines (e.g. maximum trenching speeds) designed to minimise sediment disturbance where possible.

Marine and Coastal Water Ecology

1.6.14 The ES identifies areas of conservation / protection and sensitivities associated with e.g. benthic ecology, fisheries and marine mammal receptors, and sets out measures for avoiding or minimising potential for impact as appropriate. The Pre-Construction Offshore CEMP will include any mitigation measures to be adopted. This will enable communication of awareness of any sensitive areas and potentially sensitive features to 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 Pre-Construction Offshore CEMP.

1.6.15 Where the cable cannot be fully buried, including at cable crossings, cable protection in the form of a rock berm or concrete mattresses will be required. The placement of such cable protection can result in the change or loss of seabed habitat and long-term change to a new seabed type. The requirement for such protection measures will be carefully planned to minimise the area of seabed affected at each location and protection measures will only be deployed where considered necessary for the safe operation of the Proposed Development and other marine users. Measures to accurately map and record the 'as-laid' cable protection measures will be implemented through the Pre-Construction Offshore CEMP.

Marine and Coastal Water Invasive Species

1.6.16 Measures to prevent the introduction and spread of marine and coastal water invasive non-native species (INNS) will be implemented through the Pre-Construction Offshore CEMP and associated Offshore Biosecurity Plan (an Outline Offshore Biosecurity Plan is presented with the application for DCO, at document reference 7.19).

1.6.17 A Biosecurity Risk Assessment has been undertaken as part of the Outline Offshore Biosecurity Plan (document reference 7.19) to identify potential pathways of introduction, and critical control points for preventing the spread of marine INNS, with this information to be included as part of the Pre-Construction Offshore CEMP.

1.6.18 All project vessels transiting between international waters will operate in compliance with the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), the requirements of which are implemented in the UK by the Merchant Shipping (Control and Management of Ships' Ballast Water and Sediments) Regulations 2022.

Marine and Coastal Water Archaeology and Cultural Heritage

1.6.19 The ES identifies sites of potential archaeological importance. Archaeological Exclusion Zones (AEZs) will be implemented during construction around known sites of archaeological significance. The size of the AEZs will be dependent on the particular feature (e.g. 100 m AEZs around the extents of known wreck sites), as set out in Volume 3, Chapter 7 of the ES: Marine Archaeology & Cultural Heritage, and in the Commitments register presented as Volume 1, Appendix 3.1 of the ES.

1.6.20 Additional unknown or unexpected cultural heritage and marine heritage receptors identified during construction will be reported utilising the project specific Protocol for Archaeological Discoveries (PAD) (Volume 3, Appendix 7.6 of the ES).

1.6.21 The Pre-Construction Offshore CEMP will include information from the PAD on the approach to the reporting and subsequent treatment of unexpected archaeological discoveries encountered during site investigation, construction and installation work (when it is not practical or safe for an archaeologist to be present).

1.6.22 The Pre-Construction Offshore CEMP will reference the Proposed Development's Written Scheme of Investigation (WSI), which will outline e.g. the protocols to be followed on reporting and recording should archaeological features be identified during construction.

1.6.23 Micro-routing of the cable will be undertaken where possible and archaeological exclusion zones applied to avoid direct impacts on cultural heritage assets identified as part of the EIA process. All other measures and protocols required by the Proposed Development's WSI will be referenced in this section as appropriate. At ES stage an outline WSI is provided as Volume 3, Appendix 7.2 of the ES.

Dropped Object(s) in the Marine Environment and Coastal Waters

1.6.24 Objects dropped overboard during construction activities can pose a significant hazard to the marine and coastal environment and other marine users. The potential for objects to be dropped or otherwise accidentally deposited will be minimised as far as reasonably practicable.

1.6.25 A dropped objects procedure will be produced post consent by the Contractor(s) within the Pre-Construction Offshore CEMP, detailing the requirements and procedures for vessel operators to identify, record, notify the MMO and, where possible, recover dropped objects. The production of this plan is a requirement of the deemed Marine Licence (DML) (a draft DML is submitted with the application for DCO) and the plan will be submitted to the marine licencing authority for approval prior to construction.

Marine and Coastal Water Pollution Prevention

1.6.26 The Pre-Construction Offshore CEMP will include the following plans, produced post consent by the Contractor, to limit the potential for pollution incidents to the marine environment and coastal waters:

- MPCP; and
- an expected template for SOPEP (for vessels greater than 400 GT).

1.6.27 The production of the above plans is a requirement of the DML (a draft DML is submitted with the application for DCO) and will be submitted to the marine licencing authority (MMO) for approval prior to construction. The MPCP outlines procedures to protect project personnel and to safeguard the marine environment in the event of an accidental pollution event arising from offshore operations relating to the Proposed Development. The MPCP will include the following information as part of the Pre-Construction Offshore CEMP:

- A risk assessment of the potential sources and likelihood of a pollution incident;
- Oil spill response procedures and actions; and
- Background and supporting information to support the response procedures, including response strategy guidelines.

1.6.28 In accordance with MARPOL regulations, all vessels greater than 400 GT are required to have a SOPEP in line with International Maritime Organization (IMO) and Maritime and Coastguard Agency (MCA) guidelines.

1.6.29 The SOPEP template may be combined if appropriate within the overarching MPCP. Each applicable vessel's (>400 GT) SOPEP will be a Shipboard document (carried on board) which will be specific to the vessel. The SOPEP template included with the Pre-Construction Offshore CEMP will specify expectations and minimum requirements, whilst maintaining the flexibility for vessel specific application. The SOPEP template will require the following information as part of each SOPEP:

- The steps to be taken when an oil pollution incident has occurred, or a ship is at risk of not containing a discharge of oil into the sea;

- The duty of each crew member at the time of the spill, including emergency muster and actions;
- Authorities to contact and reporting requirements in case of an oil spill;
- The location and inventory of the ship's equipment / materials provided for pollution prevention and management; and
- Drawings of fuel/oil lines.

1.6.30 All project vessels will have control measures and shipboard plans in place (including SOPEP where applicable). In addition, project vessels will be compliant with the requirements of the following international agreements:

- International Convention for the Prevention of Pollution from Ships (MARPOL Convention);
- International Regulations for the Prevention of Collisions at Sea (COLREGS);
- International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention, which is implemented in the UK by the Merchant Shipping (Control and Management of Ships' Ballast Water and Sediments) Regulations 2022).

1.6.31 Drilling fluids required for HDD operations will be carefully managed to minimise the risk of unplanned breakouts into the marine environment. The use of best practice drilling fluids such as bentonite (OSPAR PLONOR list substance) will be prioritised.

1.6.32 A detailed Bentonite Breakout Plan will be completed by the final Horizontal Directional Drill (HDD) contractor, and should form part of the Pre-Construction Offshore CEMP. A separate HDD activities CEMP may be issued, if appropriate, given different contractors and/or schedules, however clear reference would be made across documents, with all offshore construction CEMPs submitted for approval to the MMO in advance of construction works. The detailed Bentonite Breakout Plan will set out the measures that would be adopted in the event of a Breakout during the Landfall HDD. An outline Bentonite Breakout Plan is presented at document reference 7.20.

1.6.33 Any hazardous materials will be required to be stored and managed in accordance with best practice guidance.

1.6.34 No sanitary discharges will be made from project vessels, with no anticipated route to effect designated bathing waters on the Devon coast or beyond.

1.6.35 Pre-cast concrete mattresses may include small quantities of integrated plastic. These plastic components may be used as handles / fixing points and are standard design features for concrete mattresses used in the marine environment. The type of plastic will be suitably robust and resistant to deterioration i.e. appropriate for long-term deployment (50+ years minimum) in the marine environment. Mattresses will be covered with rock protection or sediments, which will further reduce potential for deterioration. The potential for associated risks to water quality are considered (and scoped out) within the ES (Volume 3, Chapter 8: Physical Processes of the ES).

Waste Management

1.6.36 Prior to cable installation, a pre-lay grapnel run may be required along portions of the Offshore Cable Corridor to clear the seabed of debris. Debris will be retrieved onboard the vessel for later, responsible onshore disposal.

1.6.37 In the case of marked abandoned, lost or discarded fishing gear (ALDFG), these will be returned to the MMO / relevant Inshore Fisheries and Conservation Authority (IFCA) for return to the owner of the marked gear. Unmarked gear and other debris retrieved on deck will be disposed of onshore at appropriate disposal facilities.

1.6.38 At out of service (OOS) cable crossings, a section of the OOS cable will be cut and removed. The cut section will be recovered onboard the vessel and transported ashore for disposal at an appropriate onshore facility. As a worst case it is assumed for the purposes of the ES that up to 5 OOS cable will not be cut and removed but rather will require crossings.

1.6.39 The majority of HDD drill arisings and used fluid from HDD will be collected and disposed of responsibly from the landward drill entry site. It should be noted that a small volume of drill fluid will be lost when the HDD breaks through the seabed. As above, drill fluids such as bentonite (OSPAR PLONOR list substance) will be utilised (c.f. outline Bentonite Breakout Plan, document reference 7.20).

1.6.40 The above measures will be confirmed and implemented via the Pre-Construction Offshore CEMP and an embedded Offshore Waste Management Plan, produced post consent by the Contractor. The production of this plan is a requirement of the DML (a draft DML is presented as a Schedule to the DCO at application) and will be submitted to the marine licencing authority for approval prior to construction.

1.6.41 The Offshore Waste Management Plan will:

- Identify personnel with waste management responsibilities;
- Outline the key legal requirements with regards to waste management and control within the UK;
- Outline opportunities for waste minimisation/reuse in line with the requirements of the waste hierarchy;
- Review any outline decisions taken to minimise the amount of waste produced on site;
- Provide a forecast of waste types and estimated arisings and outline how they will be managed;
- Set out Key Performance Indicators (KPIs) for works to minimise waste production and/or landfill diversion; and
- Contain a declaration that materials will be handled efficiently, and waste managed appropriately.

1.6.42 It is also noted that under the MARPOL Convention vessels are required to prevent pollution and the discharge of sewage and garbage at sea.

Vessel Management

1.6.43 The installation of the cables during the construction phase will require various vessels including:

- pre installation survey vessels;
- small tugs;
- cable laying vessels (CLVs);
- guard vessels;
- trenching support vessels;
- rock placement vessels; and
- jack up vessels.

1.6.44 To ensure the safe navigation and operation of project vessels and the safety of other marine users, an outline NSVMP has been produced at ES stage (Volume 3, Appendix 5.2 of the ES). The final NSVMP will be produced by the appointed (offshore) Principal Contractor (conditioned as part of the Pre-Construction Offshore CEMP).

1.6.45 A specific lighting and marking plan is not anticipated to be required (at application stage) given no anticipated operation & maintenance phase lighting and marking requirements (beyond marine chart requirements as set out in the outline NSVMP – Volume 3, Appendix 5.2 of the ES). Any temporary lighting and marking of the HDD exit points, if required during the construction phase, will be agreed in consultation with Trinity House and the MCA (as set out in the outline NSVMP – Volume 3, Appendix 5.2 of the ES).

1.6.46 The Pre-Construction Offshore CEMP will align with (and where relevant include measures from) the final NSVMP such as the following, which are taken from the outline NSVMP that has been prepared at application stage:

- The implementation of safe passage zones - passing vessels will be requested to maintain a "safe" distance (<500m) from installation vessels restricted in manoeuvrability. This will be monitored by guard vessels that will alert third-party vessels to the presence of the installation activity and provide support in the event of an emergency.
- Appropriate notification of activities to other marine users - advance warning and accurate location details of construction operations, associated safety / clearance zones and advisory passing distances will be given via Notices to Mariners (NtMs), supported by Radio Navigational Warnings, Navigational Telex (NAVTEX) and / or broadcast warnings as appropriate. Details are set out in the outline NSVMP.
- A clear process of marine coordination of all project vessels and vessel activity including vessel transit planning - the appointed company Fisheries Liaison Officer (FLO) will support ongoing liaison and ensure clear communication between the Applicant and commercial fisheries during the construction phase. Good practice guidance on the approach to fisheries liaison and mitigation shall be implemented. A procedure for the claim of loss of fixed fishing gear deployment potential will be developed (outside of the scope of the Offshore CEMP).
- Appropriate marking and lighting of vessels - cable installation vessels and support vessels will display appropriate lights and marks at all times, and where possible, broadcast their status on Automatic Identification Systems (AIS). This will include indication of the nature of the work in progress and highlight their restricted manoeuvrability.

- Project vessels and third-party vessels will be compliant with international legislation during construction, including the International Regulations for Preventing Collisions at Sea (COLREGs) and the International Convention for the Safety of Life at Sea (SOLAS).
- Where vessel anchoring is required, designated anchoring areas and protocols will be employed during offshore construction activities to minimise physical disturbance of the seabed.

Emissions to Air

1.6.47 For offshore construction, vessel emissions must 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 shall have a valid International Air Pollution Prevention (IAPP) certificate.

Method Statements and Risk Assessments

1.6.48 It is the responsibility of the Principal Contractor to have in place approved method statements and risk assessments for works being carried out on-site. Where relevant, the method statement will cross reference applicable environmental risk assessments. The risk assessments will identify environmental hazards and outline subsequent control measures. Control measures will 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.

1.6.49 Key personnel involved in the work activities will be given a method statement briefing by the Principal Contractor, e.g. in the form of a toolbox talk (TBT); **section 1.11**.

1.7 Fisheries Liaison measures

1.7.1 A dedicated project FLO will be appointed by the Applicant prior to any offshore works and for the duration of the construction phase. The FLO will engage with local fishers to minimise potential disruption.

1.7.2 Contact details of the FLO will be provided in the Pre-Construction Offshore CEMP.

1.7.3 Any claim of loss of / or damage to fishing gear will be processed, in line with protocols laid out within the guidance produced by the Fishing Liaison with Offshore Wind and Wet Renewables Group (FLOWW) and "Recommendations for Fisheries Liaison: Best Practice", in particular section 9: Dealing with claims for loss or damage of gear.

1.8 Environmental Incident Response

1.8.1 It is essential that any environmental incidents (including dropped objects into the marine environment) are reported and managed correctly to allow their impact to be reduced to a minimum and to decrease the risk of the incident re-occurring. All

reporting will be undertaken as stated in Health, Safety, Environmental and Quality (HSEQ) minimum requirements documentation.

Emergency Response Plan

1.8.2 The Principal Contractor will be required to have an environmental offshore Emergency Response Plan (ERP), which will detail the emergency planning and response control measures to be implemented during the construction phase. This will be in addition to individual management plans already in place for day-to-day operations. The plan will include a response flow chart and detail how to report and respond to an environmental incident, including the measures available to contain / clean up an incident (e.g. spill recovery or dispersal actions), manage dropped objects in the marine environment and offsite emergency response resources. The ERP will be produced by the construction contractor ahead of commencement of offshore construction activities and will likely form part of the Pre-Construction Offshore CEMP

1.8.3 The Pre-Construction Offshore CEMP would include clear and defined reporting pathways, including escalation and notification procedures, to ensure that the Environment Agency are promptly informed in the event of an environmental incident to coastal waters or designated bathing waters. This would ensure the Environment Agency are fully appraised at the earliest opportunity and can subsequently warn and inform the public of any risks.

Reporting of Environmental Incidents

1.8.4 All environmental incidents (including dropped objects into the marine environment) and near misses must be reported, investigated and recorded to the project Team and the Health and Safety Executive.

1.8.5 The Principal Contractor will be required to produce monthly reports for the project team to record health, safety and environment performance.

Lessons Learned / Incident Follow-up

1.8.6 If an environmental incident were to occur, it will be thoroughly investigated by the Principal 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.

1.9 Monitoring and Site Inspections

1.9.1 The establishment of a programme of performance and compliance monitoring will be established for the offshore Project and documented in the Pre-Construction Offshore CEMP (which should be considered a live document).

Site / Vessel Inspections

1.9.2 The Principal Contractor, or appointed delegate, will undertake site / vessel inspections on at least a weekly basis. These site inspections will include an environmental component which will, as a minimum and where relevant, cover the key issues outlined within this document. Weekly inspections will be

complimented by a combination of daily/monthly inspections, to be established as routine good practice.

1.9.3 The Principal Contractor is responsible for ensuring the close out of any actions identified during the inspections. Records of the inspections carried out will be retained onsite/onboard by the Principal Contractor and a copy provided to the Applicant; any remedial actions required must also be recorded.

1.9.4 Vessel inspections will 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 will be maintained.

Environmental Audits

1.9.5 Environmental audits will comprise both internal and external audits.

1.9.6 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. The Applicant's environmental audits are carried out by experienced auditors, either from within the Applicant's environmental team, or via delegated specialists.

1.9.7 All actions raised from the Applicant's audits will be logged within a central system. Progress of audit actions will be tracked, and a closing date assigned when the action is complete.

Environmental Monitoring

1.9.8 A programme of environmental monitoring such as for scour may be required as part of final consent conditions. This will be recorded within the PEMP, which may be appended to, or in some cases, combined with the Pre-Construction Offshore CEMP. In any event, it is recognised that effective construction phase environmental management and environmental monitoring are inherently linked.

1.9.9 Where appropriate, the scope of monitoring shall be agreed prior to construction with the appropriate authority.

1.10 Legislative and Regulatory Compliance

1.10.1 The proposed development will be consented by the UK government (Secretary of State) via a DCO issued by the Planning Inspectorate. The DCO determination process will include consultation with statutory agencies, including the MMO, JNCC, NE and the EA. Some licences may be 'deemed' as part of the approved DCO, with a draft deemed Marine Licence presented as part of the application.

1.10.2 The DCO and the deemed marine licence (DML) with their associated conditions, will be the key permissions to be adhered to for the offshore elements of the Proposed Development. Production of, and adherence to an agreed Pre-Construction Offshore CEMP will be a requirement of the DML.

1.10.3 The Principal Contractor must ensure that all relevant planning conditions for the offshore Proposed Development are complied with. Planning (DCO and DML) conditions, including those embedded within the Pre-Construction Offshore CEMP will be reviewed by the Project team on a periodic basis to ensure that the conditions are being complied with.

1.10.4 Key reference material in this section of the Pre-Construction Offshore CEMP will include the following:

- Register of relevant DCO Planning Consent / DML / Permit Conditions;
- Project Legal Register; and
- Good Practice Guidance / Industry Standards such as Pollution Prevention Guidance Notes.

Legal Register

1.10.5 It is the Applicant's policy to minimise the impact of its construction activities on the environment by complying with all relevant environmental legislation and good practice. To ensure that the Applicant maintains awareness of the requirements of current environmental legislation and good practice, an Environmental and Planning Legal Register will be maintained by the Applicant's Environmental Team.

1.10.6 The Legal Register details relevant requirements regarding environmental legislation and guidelines for the business and includes details of associated control measures.

1.10.7 The Principal Contractor will be required to ensure that all relevant environmental legislation and good practice are complied with on site. Adequate records of environmental information and audits to demonstrate compliance with both legal and Project environmental requirements, will be required to be maintained by the Principal Contractor.

1.10.8 The Principal Contractor will be responsible for applying for and obtaining any permits / licences related to their activities.

1.10.9 The Applicant will assess compliance with relevant environmental legislation as part of the Applicant's environmental audit programme.

1.11 Training and Awareness

1.11.1 A range of mechanisms are used for training and raising awareness of project environmental issues; these include environmental inductions, toolbox talks (TBTs), environmental notice boards (may be virtual), and environmental bulletins and alerts.

1.11.2 The Principal Contractor must ensure that all staff including any sub-Contractors are trained in the offshore Proposed Development's environmental emergency response procedures, so that they are able and prepared to respond to an incident promptly and effectively on-site. Where appropriate, the Applicant may request environmental emergency response plans to be tested on-site by the Principal Contractor. All vessels will carry relevant plans (e.g. MPCP) on board in hard copy.

Site / Vessel Inductions

1.11.3 All site personnel will be required to have a site / vessel induction that includes an environmental component. Designated on-site / vessel personnel from the Principal Contractor's team will be responsible for preparing and delivering the site / vessel induction and maintaining documented attendee records.

1.11.4 It is expected that the environmental management contents of site / vessel inductions will include reference to compliance with:

- relevant planning / licence conditions;
- environmental management contacts;
- site specific environmental sensitivities;
- waste management arrangements;
- water and wastewater management;
- hazardous material management;
- fuel, oil and chemical management;
- environmental emergency response; and
- reporting of incidents and complaints.

Toolbox Talks (TBTs)

1.11.5 TBTs are an effective method for the dissemination of information relating to work activities. Environmental TBTs will be required to be delivered by the Principal Contractor to on-site / vessel personnel as required. Toolbox talks are an opportunity for the Principal Contractor to disclose any other environmental sensitivities that the sub-Contractors must be aware of.

1.11.6 It is the responsibility of the Principal Contractor to ensure that all personnel attending the TBT have signed a TBT attendance sheet; TBT attendance sheets are likely to be inspected as part of environmental audits.

1.11.7 Daily check-in / vessel TBTs can be held via video conference where appropriate.

Environmental Notice Board

1.11.8 It is a requirement of the Applicant that all construction sites / vessels have an environmental notice board. The notice board must be displayed in an appropriate and prominent location and must be used to display copies of relevant environmental management information, including but not limited to the following:

- Environmental Policies;
- Key Contacts Details, including Principal Contractor's Environmental Management Representative;
- Environmental Bulletins;
- Offshore Project Location Plan showing ecologically / archaeologically sensitive areas, key management areas and location of contingency materials / features;
- Emergency Response Contact Details; and
- Emergency Response Flowchart.

1.12 Communication and Reporting

Meetings

1.12.1 Periodic HSEQ meetings are required to be held on all construction sites, including principal vessels (e.g. CLVs), and are likely to comprise representatives from the Applicant's project team, the Principal Contractor, and key sub-Contractors; meeting attendees may attend remotely (via teleconference). Minutes of meetings will be recorded, and standard agenda items will include status of outstanding items, reports of environmental incidents or complaints, stakeholder engagement, TBTs issued / delivered, and key findings of environmental inspections and audits. All reporting will be undertaken as stated in Health, Safety, Environmental and Quality minimum requirements documentation.

1.12.2 The Principal Contractor is required to convene regular project team meetings to convey environmental information to the project team, including sub-Contractors and to raise awareness of environmental issues.

Community

1.12.3 The Applicant values its relationship with the communities that surround the offshore Proposed Development. All work shall be carefully planned to minimise disturbance to the local communities.

1.12.4 Given the remote nature of the offshore Proposed Development, a public / community relations plan is not proposed for the offshore Proposed Development. Fisheries Liaison and Environment Liaison Officers will be appointed for the duration of the construction phase.

1.12.5 The Principal Contractor must ensure that any complaints are reported to the Project team and investigated promptly. Within the Pre-Construction Offshore CEMP, the Principal Contractor must have a procedure in place to report public complaints.

Stakeholders

1.12.6 Reference will be made within the Pre-Construction Offshore CEMP to any reporting requirements in relation to stakeholders set out under the DCO consent (and the DML).

1.13 Sub-contractor Management

1.13.1 The Pre-Construction Offshore CEMP (and associated documents produced by the Principal Contractor such as a PEMP) will set out how the Principal Contractor manages their sub-Contractors onsite. This may range from the selection and assessment processes through to the assessment and monitoring of performance on site.

1.13.2 For example, expectations of the Principal Contractor working on behalf of the Applicant should be detailed in the Pre-Construction Offshore CEMP and the following documents:

- Contract Schedules including specific environmental requirements;

- Environmental Policy; and
- Project Environmental Statement.

1.14 Sustainable Construction

1.14.1 Throughout the design phases of the Proposed Development (i.e. those phases completed and the pre-construction phase that includes the engagement of a Principal Contractor), sustainable construction will be considered. Sustainable construction will be integral to the construction phase activity planning.

1.14.2 For guidance, "Sustainable Construction", is described by the Institute of Environmental Management and Assessment as:

"*Application of sustainable development to the construction industry, whereby the construction and management of a development is based on principles of resource efficiency and the protection / enhancement of natural and built heritage. Sustainable construction comprises such matters as site planning and design, material selection, resource and energy use, recycling, and waste minimisation". (*Institute of Environmental Management and Assessment, 2008*).*

1.15 Further Commitments

1.15.1 The Applicant provides the following commitments that are inherent to the final environmental effects presented in the ES, and will be required to be adhered to by the appointed Offshore Principal Contractor (and included as part of the Pre-Construction Offshore CEMP):

- All construction activities undertaken on the seabed including boulder clearance activities (inclusive of the depositing of moved boulders) will remain entirely within the Offshore Cable Corridor, and a minimum distance of 20 m from any Marine Conservation Zone (MCZ) boundary.
- Micro-routing of the cables, within the constraints of the defined Works Plans coordinates set out in the DML, will be undertaken to minimise any potential damage to Annex I geogenic reef habitats (as set out in the ES), to avoid sand waves or large ripples (that would otherwise require pre-lay seabed flattening), and to avoid direct impacts where possible, on archaeology and cultural heritage assets and submerged land surfaces.
- All activities undertaken in Bideford Bay, with potential to disturb sediments, will avoid peak spring tides and significant wave activity. This commitment is made to limit the potential for sediment dispersal. Such activities would include the sediment clearance at the x4 (no.) HDD exit pits and trenching works within Bideford Bay.
- Geophysical survey and associated marine archaeological review of these data will be undertaken of the area to the east of blocks U28 and U29 where there are data gaps. (These data gaps were introduced following expansion of the Offshore Cable Corridor to allow flexibility and increased separation distance to potential future The Crown Estate (TCE) Project Development Area 3 (PDA3) infrastructure.) Final micro-routing in this area would rely on these post DCO application geophysical surveys. These geophysical surveys are likely to be combined with pre-construction UXO surveys (that do not form part of the Deemed Marine Licence).

1.16 Next steps

1.16.1 This Outline Offshore CEMP document sets out the framework for the Pre-Construction Offshore CEMP, including necessary mitigation measures to reduce or prevent potential effects upon the marine environment / coastal waters and associated sensitive receptors during the construction phase of the development.

1.16.2 This Outline Offshore CEMP is based on industry good practice and relevant legislation (at the time of preparation). This Outline Offshore CEMP is submitted as part of the DCO application, alongside the ES. It constitutes the Applicant's minimum requirements and expectations for construction environmental management, and it will be used as an active determinant of the Principal Contractor procurement process.

1.16.3 Preparation of the Pre-Construction Offshore CEMP will be the responsibility of the appointed Offshore Principal Contractor post consent (post application for Development Consent). The Pre-Construction Offshore CEMP will be agreed with the relevant host authority (MMO) prior to construction. The Pre-Construction Offshore CEMP will remain a live document and will be used as a framework for environmental audits and inspections throughout the construction phase.