

# **Preliminary Environmental Information Report Volume 2**

## **Appendix 2.2 Outline Offshore Construction Environmental Management Plan**

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**LionLink:**

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# 1 Background

## 1.1 Document purpose

1.1.1 This document describes the outline Offshore Construction Environmental Management Plan (oCEMP) for use in UK waters during all LionLink (hereafter referred to as 'the Proposed Offshore Scheme') construction phases. This oCEMP provides the principles to be followed for all construction activities. It is proposed that the Outline CEMP will the offshore installation of the horizontal directional drilling (HDD) to allow these enabling works to commence ahead of full construction, which will follow the principles set out within this document.

1.1.2 Contractors engaged in the Construction of the Proposed Offshore Scheme will be required to comply with the requirements of this oCEMP in full. Their own environmental management plans must reflect the objective and requirements set out in this document.

1.1.3 There are potential environmental effects associated with an offshore development which need to be identified and considered before construction takes place.

1.1.4 This oCEMP is provided as part of the Development Consent Order (DCO) application to demonstrate how commitments made with regards to environmental management are secured and will be taken forward for construction.

1.1.5 The purpose of this oCEMP is to set out the framework and principles for the CEMP produced for the construction phase of the Proposed Offshore Scheme. should there be a requirement to also include the operational phase this will be updated for the Environmental Statement (ES). This oCEMP includes the controls that are proposed to manage the environmental risks associated with the construction of the Proposed Offshore Scheme.

1.1.6 The scope of this oCEMP applies only to works associated with the offshore scheme below Mean High Water Springs (MHWS) and will be finalised prior to construction, setting out the controls and processes that are to be adopted to mitigate the offshore environmental impacts of the Proposed Offshore Scheme. It will also document the environmental measures set out to comply with consent conditions in the Deemed Marine Licence (DML).

1.1.7 A series of contractors will be responsible for the detailed design, construction and installation of the main infrastructure associated with the Proposed Offshore Scheme, all of whom must comply with the requirements set out within the final CEMP.

1.1.8 The Final CEMP will be produced by the main contractor, to discharge the relevant marine licence conditions and to communicate the environmental

requirements and standards that must be incorporated into their sub-contractors Environmental Management Plans and Risk Assessments and Method Statements (RAMS). All contractors (including subcontractors) shall comply with the CEMP in all works undertaken. The contractors (including subcontractors) management plans must be based on and comply with the requirements of the oCEMP and will be provided for approval in accordance with DCO Requirements.

## 1.2 Structure of the outline CEMP

1.2.1 The Final CEMP will include the following information:

- a. Details of relevant DML conditions;
- b. Overview of project activities to which the CEMP applies;
- c. Overview of relevant regulations and guidance;
- d. Details of the various plans and documents that interface with the CEMP and how they interface;
- e. Roles and responsibilities;
- f. Environmental objectives and targets;
- g. Environmental aspects and impacts;
- h. Training and awareness;
- i. Communication and stakeholder management;
- j. Documentation and records management;
- k. Arrangements for compliance monitoring and auditing;
- l. Approach to waste management;
- m. Approach to complaints and incident management;
- n. Arrangements and documentation for marine pollution contingency planning;
- o. Dropped objects protocol; and
- p. Arrangements for chemicals risk assessment and management (Chemical Risk Assessment).
- q. Details of the marine archaeology Written Scheme of Investigation (WSI) and Protocol for Archaeological Discovery (PAD).

**Table 1.1: Final oCEMP structure**

Section	Description
Section 1 & 2	Provides an overview of the Project. Sets out the purpose and scope of the CEMP, details environmental management framework, including document hierarchy and the process for making updates and amendments.
Section 3	Describes the roles and responsibilities of the various parties.
Section 4	Sets out the measures to be implemented for the management of environmental aspects and compliance obligations, including specific issues including (but not limited to) marine pollution, waste, dropped objects and underwater noise.

Section	Description
Section 5	Describes the processes to be followed to establish effective communication and reporting, including holding toolbox talks, recording environmental impacts and environmental auditing.
1.2.2	Subsequent updates, following the initial approval of the oCEMP by the Marine Management Organisation (MMO), will be provided to the MMO for information and to ensure that they hold an up-to-date copy.

## 1.3 Scope and objectives

1.3.1 The Final CEMP is a tool to set out the Project's commitment and approach to environmental management. It will ensure that the Licensing Authorities (and their advisers), as well as the Licence Holder and all and any Contractors (including sub-contractors) engaged during the pre-construction and construction phase of the Project, are advised of the responsibilities for licenses, consents discharge and environmental protection as well as the manner in which consents will be discharged.

1.3.2 The overarching objectives of the Final CEMP are:

- To ensure construction activities will be undertaken in an environmentally responsible manner; and
- To provide construction contractors with concise, clear and practical details of the environmental management measures and licence obligations that will be implemented and with which they must comply.

1.3.3 The Final CEMP may include the following:

- Outline the applicable licences and permissions.
- Highlight the mitigation that is required to comply with the licences and permissions.
- Provide the overarching framework for environmental management, highlighting the hierarchy of documentation that will be used to manage environmental impacts during the offshore construction works.
- Provide details of responsibilities in relation to environmental management.
- Detail how environmental compliance will be audited and reported.
- Ensure consistency in approach and performance of environmental management across the Applicant and its contractors during the offshore construction works.

## 2 Project Overview

### 2.1 Project description

2.1.1 The Project comprises a new interconnector (offshore hybrid asset) with a capacity of up to two gigawatts (GW) between the National Transmission Systems of Great Britain (GB) and the Netherlands, including a connection into a wind farm located in Dutch waters. The Project is located partly in the territory of GB and partly in the territory of the Netherlands. The portion of the Project within the territory of GB consists of a new converter station, and subsea and underground high voltage direct current cables. The Project is classified as a Nationally Significant Infrastructure Project (NSIP) under Section 15 (3) of the Planning Act 2008. Such projects require a DCO to be granted by the UK Secretary of State (SoS).

2.1.2 This oCEMP has been prepared for the portion of the Project within the inshore and offshore waters of the territory of GB only, which is the subject of the Deemed Marine Licence (referred to as the Proposed Offshore Scheme).

2.1.3 The extent of the Proposed Offshore Scheme is from the mean high water springs (MHWS) at the proposed Landfall Site at Walberswick, Suffolk to the border between the UK and Netherlands Exclusive Economic Zones (EEZs).

2.1.4 The construction programme of the Proposed Offshore Scheme will be set out by construction years rather specific calendar years e.g. Year 1, Year 2 rather than 2028, 2029. Therefore, the dates provided below are indicative only. The Project's construction programme is expected to take approximately 36 months from start to finish. The project is envisaged to commence offshore construction in 2028, with completion due in 2032.

2.1.5 The exact timing of the subsea cable installation works will be dependent upon the date of the contract award for the works, time required for detailed design and cable manufacture, availability of cable installation and other vessels and any restrictions to mitigate potential effects on features of conservation interest, fisheries or other sensitive receptors. It is anticipated that the construction of the Proposed Offshore Scheme will be split into multiple campaigns; **Table 2.1** presents the main activities to be undertaken within each construction campaign and provides an indicative schedule for each activity.

**Table 2.1: Scope and indicative schedule for marine works**

Activity	Description	Indicative Duration
<b>Route Preparation</b>		
Pre-construction Unexploded Ordnance (UXO) survey	<p>A magnetometer array would be used to undertake the specific pre-construction survey to characterise and investigate any anomalies that may be UXO in more detail. Magnetometers are passive devices which detect magnetic anomalies that may not be detected by standard geophysical survey equipment. The extent of the UXO survey would be nominally 25m either side of the proposed cable centreline (50m total); the route along which the cable will be laid and buried within the Order Limits. It is undertaken using a geophysical survey vessel(s).</p>	2 months
UXO identification	<p>Any UXO identified as a target for investigation would be surveyed in one of two ways:</p> <ol data-bbox="815 970 1410 1271" style="list-style-type: none"> <li data-bbox="815 970 1410 1144">Diver survey using a circular search pattern with handheld magnetometer to identify the position of the target and using a low-pressure water jet and dredge system; and / or</li> <li data-bbox="815 1152 1410 1271">Remote Operated Vehicle (ROV) equipped with magnetometer, dredge pump and sonar.</li> </ol> <p>A minimum 5m x 5m grid would be investigated around each target. This may</p>	2 months

Activity	Description	Indicative Duration
UXO clearance	<p>involve small excavations around the potential UXO to confirm its identity. Note UXO identification works would be consented via the DML.</p> <p>Should a target be confirmed as a UXO, then the decision-making hierarchy would be:</p> <ol style="list-style-type: none"> <li>Avoid clearance through micro-routeing;</li> <li>Lift and shift – move the UXO either to surface for disposal, or to a seabed position within the Draft Order Limits;</li> <li>In-situ clearance via low order detonation (deflagration); or</li> <li>In-situ clearance via high order detonation.</li> </ol> <p>UXO clearance would be undertaken following completion of the initial UXO identification survey and once all potential targets have been identified and where avoidance of targets, through micro routing, is not possible.</p> <p>Note UXO clearance works would be consented via separate marine licence outside the DCO.</p>	2 months
Route Preparation	<p>Activities that would be undertaken may include:</p> <ol style="list-style-type: none"> <li><i>Boulder clearance:</i> Geophysical data would be used to inform the requirement for boulder clearance within the Order Limits. It</li> </ol>	3 months

Activity	Description	Indicative Duration
	<p>may be possible to micro-route around boulders, however if there are large volumes present in the area, they would need to be cleared away from the cable route centreline so that burial equipment can operate. Where possible a grab would be used to individually target and move boulders. Boulders would be moved away from the cable centreline and positioned within the Order Limits. However, where there are high volumes of boulders, a SCAR plough or similar would be employed.</p> <p>b. <i>Pre-lay grapnel run (PLGR):</i> The PLGR vessel (typically a construction support vessel) tows a wire which has a string of specially designed hooks, or grapnels on it. It is towed along the centreline until it encounters debris. The grapnel is designed to capture debris on the surface and just below the surface of the seabed. Debris (such as scrap trawler warps, old cable, ghost fishing gear) caught with the grapnel would be recovered to the vessel for appropriate licensed disposal onshore.</p> <p>c. <i>Sandwave clearance:</i> In areas where mega ripples (wave heights &lt;1.5m) and sand waves (wave heights &gt;1.5m) are present along the cable route centreline, pre-sweeping may be undertaken. Two different techniques may be used; a controlled flow excavator or a trailing suction hopper</p>	

Activity	Description	Indicative Duration
	<p>dredger (seabed disturbance is typically narrower using the latter technique).</p> <p>d. <i>Preparation of infrastructure crossings:</i> The Proposed Offshore Scheme crosses over several types of third-party infrastructure which have been identified through desk top studies and the marine characterisation survey. The infrastructure identified that crosses the Proposed Offshore Scheme is as follows:</p> <ul style="list-style-type: none"><li>a. 13 x in service (IS) cables and pipelines (two cables are crossed twice)</li><li>b. 2 x proposed offshore wind farm export cables</li><li>c. 4 x abandoned pipelines</li><li>d. 15 x out of service (OOS) telecommunication cables.</li></ul> <p>A protective layer of aggregate (rock) or concrete mattresses would be laid down during seabed preparation to provide separation between the existing infrastructure and the Proposed Offshore Scheme.</p>	

Activity	Description	Indicative Duration
Horizontal Directional Drilling (HDD) site set up & HDD and Duct Installation	<p>Cable ducts are to be created using a trenchless solution such as HDD. The purpose of the HDD is to create a bore from above MHWS to below mean low water springs, through which a High-Density Polyethylene (HDPE) conduit/duct containing the fibre optic cable and the HVDC cables can be passed. Three ducts will be installed. The cable ducts would exit in the nearshore (between 5m and 9m lowest astronomical tide).</p> <p>Construction plans are not yet available, but the expectation would be that the HDD would start on land and be directed out to sea. Offshore support will likely be required as the duct is installed into the bore. A support vessel will be needed at the seaward end of the duct during the punch out at the exit point. The primary HDD activity that interacts with the marine environment is when the HDD breaks through the sediment (or punches out) onto the seabed.</p>	<p>Site set up: 2 months</p> <p>&amp;</p> <p>Installation: 1 month</p>
<b>Cable Lay and Burial</b>		
Pre-lay survey	<p>The pre-lay surveys would involve a range of marine survey techniques including:</p> <p>a. <i>Multi-Beam Echo Sounder (MBES)</i>: used to record water depth, prepare a three dimensional (3D) digital terrain model of the seabed, and to identify relevant bedforms and bathymetry.</p>	1 week

Activity	Description	Indicative Duration
	<p>b. <i>Side Scan Sonar (SSS)</i>: maps the seabed surface and is used for identification of sediment types, obstacles lying on the seabed, such as wrecks, debris, UXO, and surface-laid or exposed pipelines and cables that might affect cable installation.</p> <p>c. <i>Sub-Bottom Profiling (SBP)</i>: directs a pulse of acoustic energy into the seabed. Using reflections from the sub-surface geology it can assess the thickness, stratification, and nature of the seabed sediments.</p> <p>d. <i>Magnetometer</i>: passive detection of magnetic anomalies compared to the earth's magnetic field. Such anomalies can be caused by geological faults and buried metallic objects such as UXO, pipelines, cables and archaeological features.</p> <p>e. <i>Drop down video / camera</i>: is a piece of marine survey equipment that is typically comprised of an underwater camera and lights on a robust sled or frame which is able to stream live footage to the surface. It has built in depth sensors and lasers to provide a scale to estimate the field of view.</p> <p>f. <i>Grab sampling</i>: a technique of taking a sample of the seabed for testing e.g., to look at sediment composition and properties or to identify marine flora and</p>	

Activity	Description	Indicative Duration
	<p>fauna. Types of grabs include Hamon grab, dual Van Veen grab and shipek grab.</p> <p>g. <i>Diver led surveys:</i> for UXO target investigation, using handheld clearance tools.</p> <p>The pre-installation survey would typically be split into two elements: nearshore (&lt;10m of water) and offshore (&gt;10m of water), each requiring a survey vessel suitable for the different water depths.</p>	
<p>Cable pull in &amp; Cable lay</p>	<p>Following the completion of preparation activities, the cable would be ready to be laid. The cable lay vessel (CLV) would stand off a short distance from the HDD exit point. A winch rope would be floated out to the CLV from the HDD exit point. The rope would be attached to the cable and winched back in pulling the cable behind. Floats will be attached to the cable. When the cable reaches the HDD exit point, divers would start to remove the floats allowing the cable to enter the HDD.</p> <p>The cable pull would continue until the cable enters the transition joint bay at the HDD entrance. Once the cable is in position, the remaining floats would be removed and the cable will be allowed to sink to the seabed, monitored by divers.</p>	<p>Cable pull in: up to 1 month &amp; Cable lay: up to 1 month per campaign</p>

Activity	Description	Indicative Duration
Cable trenching	<p>Once the cables have been pulled through to shore, the CLV would proceed to move away from the Landfall along the cable route laying and burying the cable to the required depth of lowering.</p> <p>There are three possible configurations for cable installation:</p> <ul style="list-style-type: none"> <li>a. <i>Pre-cut trenching</i>: A pre-cut trenching vessel would tow a plough along the seabed creating a v-shaped trench. A separate cable lay vessel would follow, laying the cables directly into the trench. It would generally be followed by another construction support vessel towing a back-fill plough which would push the spoil heaps into the trench, covering the cables.</li> <li>b. <i>Simultaneous lay and burial</i>: This technique would simultaneously create a trench excavation and lay the cable into the trench at the same time. The cable lay vessel may tow the burial equipment or it would be deployed by another vessel following close behind, creating effectively a single large spread. The cables would be fed into the burial equipment directly from above and the cables would be buried as the spread progresses along the route.</li> <li>c. <i>Post-lay burial</i>: The cable lay vessel would lay the cables on the seabed and a post-lay burial vessel would follow later</li> </ul>	Up to 2 months per campaign

Activity	Description	Indicative Duration
	<p>to bury the cables. As the post-lay burial is a stand-alone operation, the post-lay burial vessel may operate with a longer separation distance from the cable lay vessel, so there would be two operations separated physically by distance and in time.</p>	
Infrastructure crossings	<p>Where the third-party infrastructure is no longer in service, agreements would be made to cut and remove a section of the asset to allow the Proposed Offshore Scheme to continue cable burial unimpeded. At the location of known OOS cables, a de-trenching grapple would be deployed to retrieve the OOS cable from the seabed. The section of the OOS cable blocking the subsea cable route would be cut away and removed, after having obtained approval from the asset owner.</p>	<p>2 months 1 month</p>

Activity	Description	Indicative Duration
	<p>risk of hooking behind the cable ends by, for instance, fishing gear. Clump weights may be buried in line with agreed mitigation.</p> <p>The clearance of OOS cables would be undertaken by a construction support vessel during the seabed clearance campaign.</p> <p>Where cables and pipelines are still in operation or cannot be removed, crossings will need to be made. These typically involve placing a protective material over the third-party asset, which would be placed at the same time as other route preparation activities. Once the cable has been laid over the protective material, a secondary layer of rock or matressing would be laid over the cables to protect them.</p>	
Jointing	<p>The Proposed Offshore Scheme system design means that the cable lengths are bundled in a configuration of 80 – 100km. Sections of offshore cables are connected by a cable joint. The cable system would require at least two joints within the Proposed Offshore Scheme. In line joints would be made where cable laying can be continued after the cable end has been picked up. Where the cable is laid towards the cable end, or where a repair is required in an existing cable, an omega joint is made. For this joint, both cable ends are brought on board the cable lay vessel, to make the joint. The process requires extra cable, approximately equal to twice the depth of</p>	Approximately 2 weeks

Activity	Description	Indicative Duration
	water to allow for the transition of each cable from the seabed to the surface to make the joint. When the cable is returned to the seabed the additional cable would be laid on the seabed to one side of the centreline in a loop. For both types of joint, the joint and cables would be buried (as the preference) or protected by external cable protection.	
Post lay survey	Geophysical surveys would be undertaken periodically to monitor cable burial and the status of external cable protection e.g., remedial or at infrastructure crossings. In areas of high seabed mobility, or if post-installation changes in the natural or manmade environment are perceived to have occurred (for example through an increase in adjacent dredging activity), additional survey of specific areas of the cable system may be initiated.	Up to 2 week

## 2.2 Environmental sensitivities

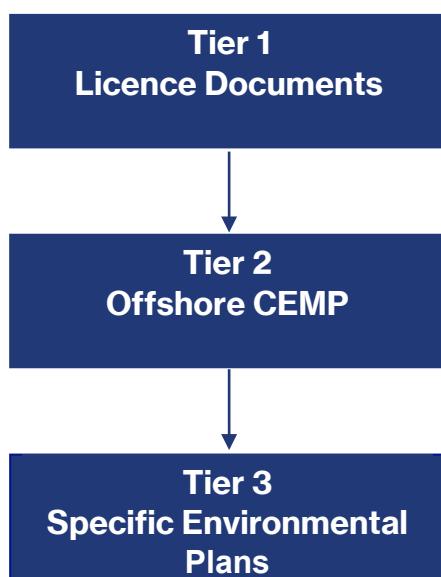
2.2.1 The environmental characteristics of the Proposed Offshore Scheme and environmental sensitivities are detailed in each of the technical chapters of this Preliminary Environmental Information Report (PEIR). **Appendix 29.1 Outline Schedule of Environmental Commitments and Measures** provides a preliminary list of all environmental measures being proposed for the Proposed Scheme.

2.2.2 The Final CEMP will set out the relevant controls and procedures to be adopted to mitigate the environmental impacts associated with the Proposed Offshore Scheme. These measures will be specific to the final design of the Proposed Offshore Scheme and subject to further stakeholder engagement.

## 2.3 Environmental management framework

### Offshore document hierarchy

2.3.1 A three-tiered hierarchy will be in place to ensure that environmental standards will be met and are maintained throughout the Project. The system is outlined in Inset 1-1 below:



#### Inset 1-1: Document hierarchy

2.3.2 The Final CEMP will be a Tier 2 document and will be supported by additional topic specific environmental management plans (Tier 3 documents). Once confirmed these will be detailed.

### Relevant tier 3 plans

2.3.3 The Tier 3 specific environmental plans that may support the Final CEMP include:

- Cable Burial Risk Assessment
- Marine Mammal Mitigation Plan

- c. Marine Pollution Contingency Plan
- d. Waste Management Plan
- e. Biosecurity Plan
- f. Fisheries Liaison and Co-Existence Plan
- g. WSI and PAD

### Relevant legislation and regulations

2.3.4 In addition to the project specific conditions that will be laid out in the consents, all Contractors (and their sub-contractors) are responsible for identifying and complying with all relevant UK legislation in place at the time of the activities occurring.

## 3 Roles and responsibilities

3.1.1 Responsibility for the Project in relation to the CEMP will be divided into two parts: responsibilities assigned to organisations and those assigned to individual roles. Organisational responsibilities are summarised in **Table 3-1** below, role-specific responsibilities will be outlined in the Final CEMP within a RACI (Responsible, Accountable, Consulted, Informed) matrix or similar.

**Table 3.1: Responsibilities**

Organisation	Responsibility	Contact Details
National Grid Ventures	<p>Licence Holder</p> <p>a. Licence holder to appoint a suitably competent Engineering Procurement Construction (EPC) Contractor to undertake the work, ensure and monitor compliance with licence conditions and submit notifications.</p>	TBC
Installation Contractor TBC	<p>EPC Contractor</p> <p>a. Responsible for the manufacture, transport and installation of the offshore power cables.</p> <p>b. Responsible for discharging environmental consent obligations on behalf of the Licence Holder (where required).</p> <p>c. Responsible for monitoring the environmental performance of all sub-contractors and ensuring that they remain compliant with the CEMP.</p> <p>d. Responsible for ensuring that environmental audits take place on a regular and planned basis and that all and any suspected breaches of environmental legislation, policy, best practice or guidance are fully investigated and reported, including reporting of spills.</p> <p>e. Responsible for ensuring that the CEMP is kept up-to-date and available for dissemination to all parties as necessary and appropriate.</p>	TBC
Sub-Contractors TBC	To comply with the requirements of the EPC Contractor's Environmental Management Plans	TBC

3.1.2 All contractors will also be required to produce RAMS and implement management controls as appropriate within their RAMS, which shall be reviewed by the Licence Holder. The RAMS will also make reference to the relevant elements of various guidance that will be implemented as part of their management controls.

# 4 Management of environmental impacts

## 4.1 Aspects and impacts

4.1.1 All Contractors undertaking works for the Proposed Offshore Scheme will be required to produce aspects and impacts registers related to the works. Such registers will include details of:

- Aspects associated with (but not limited to) emissions to air, water, land (insofar as it is relevant at the intertidal); waste production, storage and disposal; chemical use and management; transport; and use of amenities and utilities; and
- Details of potential impacts, legal and other requirements; and environmental management measures.

## 4.2 Environmental commitments and mitigations

4.2.1 Full details of all commitments and associated mitigations will be provided with the ES. A preliminary register of design measures is provided **Appendix 29.1 Outline Schedule of Environmental Commitments and Measures** of this PEIR.

4.2.2 The Final CEMP will detail the mitigations and other measures included in the various RAMS.

# 5 Communication and reporting

## 5.1 Communication methods

### Availability and update of documents

5.1.1 The CEMP will be updated at least six months prior to construction commencing or within the specified timescales within the DML, and submitted to the MMO, in consultation with relevant stakeholders for review and approval.

5.1.2 The CEMP will also be reviewed quarterly during construction. These reviews will focus on:

- changes in roles and responsibilities of the Project team;
- changes in legislative or other requirements;
- changes to processes or procedures; and
- changes in project phases - e.g., the plan will be updated prior to commencement of the operations and maintenance phase of the project.

5.1.3 Subsequent updates, following initial approval of the document by the MMO, will be provided to the MMO for information and to ensure they hold an up-to-date copy.

### Site inductions and training

5.1.4 All Contractors (including all sub-contractors) engaged in delivering the Proposed Offshore Scheme have a responsibility to ensure that the relevant environmental information is assessed and appropriately disseminated to site personnel. The key method by which this may be achieved is through the completion of site induction briefings, although additional methods may be employed to ensure industry leading practice is followed.

5.1.5 Site inductions should be held prior to commencement of the offshore construction activities to ensure that all personnel are familiar with the vessel, in particular the safety protocols and location of emergency equipment. Site inductions will typically be given by the Quality, Health, Safety and Environment department and will include environmental awareness and the requirements of this outline CEMP. The Masters of installation and support vessels will give a safety briefing on board the vessel prior to departure.

5.1.6 Contractors (and their sub-contractors) will provide specific toolbox talk briefings to personnel involved in construction activities prior to commencing work. These talks will detail the environmental risk assessments performed by the Contractor(s) and confirm control measures to implement and mitigate the likelihood of the work impacting upon the environment. Subjects for inclusion within toolbox talks may include, but will not be limited to:

- Environmental policy

- b. Dealing with oil and chemical spills including types of spill kits and their use
- c. Waste management including storage, separation and handling of waste
- d. Marine Invasive Non-Native Species (MINNS)
- e. Marine mammal mitigation procedures
- f. Dropped objects
- g. Archaeological compliance and reporting

## 5.2 Communication protocol

5.2.1 Table 5-1 details the communication protocol with regard to this outline CEMP. The Final CEMP will outline the communication protocols in more detail.

**Table 5.1: Communications protocol**

Issue	Communication Requirements
Change in construction method	<p>Contractor to advise the Licence Holder as soon as made aware.</p> <p>The Licence Holder to advise Contractor whether changes should be considered material and appropriate discussions be undertaken with Licensing Authority.</p>
Change to agreed mitigation	<p>Contractor to advise the Licence Holder as soon as made aware.</p> <p>The Licence Holder to advise Contractor whether changes should be considered material and appropriate discussions be undertaken with Licensing Authority. The Licence Holder to liaise with regulators and statutory consultees as appropriate.</p>
Major environmental non-compliance	<p>Contractor to advise the Licence Holder as soon as made aware.</p> <p>Contractor to advise the Licence Holder (within one hour) and Licensing Authority and other relevant bodies as outlined in the relevant Tier 3 document.</p> <p>For the avoidance of doubt, in the event of a major non-compliance incident, the Contractor should not delay in implementing appropriate and agreed mitigation measures and reporting the incident directly to the appropriate body.</p> <p>EPC Contractor Project Manager to record all environmental non-compliances in the non-conformance register.</p>
Minor environmental non-compliance	<p>Contractor to advise the Licence Holder as soon as aware of all incidents on non-compliance, and subsequent actions taken.</p> <p>EPC Contractor Project Manager to investigate all non-compliance incidents.</p> <p>EPC Contractor Project Manager to inform the Licence Holder of all minor non-compliance incidents within 2 hours.</p> <p>EPC Contractor Project Manager to record all environmental non-compliances in the non-conformance register.</p>
Waste disposal	Contractor to provide own Waste Management Plan.

Issue	Communication Requirements
Stakeholder communication	Consents and environmental related communication to be managed by either EPC Contractor or the Licence Holder as appropriate. Contractor(s) should not engage directly with statutory stakeholders on matters concerning licenses, consents or permissions without prior agreement from the Licence Holder (except in cases of emergency).

## 5.3 Monitoring environmental impacts

5.3.1 The EPC contractor will maintain all environmental registers required under the licence obligations and make available to the Licence Holder throughout the duration of the works.

5.3.2 Contractors (and their sub-contractors) shall document the results of compliance with the relevant environmental standards and the Final CEMP throughout the project via the Daily Progress Report and shall provide any supporting documentation on a regular basis (e.g., monthly). Each and any contractor(s) shall be responsible for appointing their own company Environmental Manager who shall manage, co-ordinate and check compliance with the Final CEMP throughout their involvement in the Project.

## 5.4 Recording and reporting environmental impacts

5.4.1 All Contractor(s) shall monitor and record environmental impacts related to their involvement during construction, including but not limited to:

- Waste types and amounts in accordance with their Waste Management Plan
- Audit and inspection results
- Compliance with consent conditions
- Reported incidents including near misses
- Environmental non-compliance

5.4.2 This information must be reported to the Licence Holder as part of the contractor's monthly progress report.

## 5.5 Auditing and inspection for environmental compliance

5.5.1 The EPC Contractor Client Representative onboard the vessel will monitor onboard activities to ensure compliance with the Final CEMP. The Final CEMP will also be reviewed after each construction and any lessons learned/actions identified during the review will be carried forward to an update.

# Topic Glossary

Acronym/ Phrase/ Abbreviation	Definition
3D	Three Dimensional
CEMP	Construction Environmental Management Plan
CLV	Cable Lay Vessel
DCO	Development Consent Order
dML	deemed Marine License
EPC	Engineering, Procurement and Construction
GB	Great Britain
GW	Giga Watt
HDD	Horizontal Directional Drilling
HDPE	High Density Polyethylene
HVDC	High Voltage Direct Current
ICPC	International Cable Protection Committee
IS	In Service
MBES	Multibeam Echo Sounder
MHWS	Mean High Water Spring
MINNS	Marine Invasive Non-Native Species
MMO	Marine Management Organisation
NGV	National Grid Ventures
NSIP	Nationally Significant Infrastructure Project
oCEMP	Outline Construction Environmental Management Plan
OOS	Out of Service
PAD	Protocol for Archaeological Discovery
PEIR	Preliminary Environmental Information Report
PLGR	Pre Lay Grapnel Run
RACI	Responsible, Accountable, Consulted, Informed
RAMS	Risk Assessments and Method Statements
ROV	Remote Operated Vehicle
SBP	Sub Bottom Profiler
SoS	Secretary of State
SSS	Side Scan Sonar

<b>Acronym/ Phrase/ Abbreviation</b>	<b>Definition</b>
The Applicant	National Grid Ventures
TSHD	Trailing Suction Hopper Dredger
UXO	Unexploded Ordnance
WSI	Written Scheme of Investigation

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