

**Liverpool Bay CCS Ltd**

# **HYNET CARBON DIOXIDE TRANSPORTATION AND STORAGE PROJECT - OFFSHORE**

**Environmental Statement**

**Volume 4, appendix R: Environmental Management Plan**



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Liverpool Bay CCS Limited  
Version Final  
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Offshore ES  
Environmental  
Management Plan

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Prepared by:

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Prepared for:

Liverpool Bay CCS Limited

## Glossary

Term	Meaning
The Applicant	This is Liverpool Bay CCS Ltd.
Environmental Impact Assessment	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).
Mitigation Measure	Measure which would avoid, reduce, or remediate an impact
Project	The HyNet Carbon Dioxide Transportation and Storage Project.
Project Design Envelope	Also known as the Rochdale Envelope, the PDE concept is routinely utilised in both onshore and offshore planning applications to allow for some flexibility in design options, particularly offshore, and more particularly for foundations and turbine type, where the full details of the project are not known at application submission but where sufficient detail is available to enable all environmental impacts to be appropriately considered during the EIA.
Proposed Development	The offshore components of the Project which are subject of this Environmental Statement, as described in Chapter 3: Proposed Development Description.

## Acronyms and Initialisations

Acronym/ Initialisation	Description
CCS	Carbon Capture and Storage
CLM	Community Liaison Manager
CMS	Construction Method Statement
CP	Construction Programme
CO <sub>2</sub>	Carbon dioxide
DSLP	Design Specification and Layour Plan
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
FLCP	Fisheries Liaison and Coexistence Plan
FLO	Fisheries Liaison Officer
HRA	Habitat Regulations Assessment
INNSMP	Invasive Non-Native Species Management Plan
LAT	Lowest Astronomical Tide
LBA CCS T&S	Liverpool Bay Carbon Capture and Storage Transport and Storage
LMP	Lighting and Marking Plan
MATs	Master Application Templates
MCAA	Marine and Coastal Access Act
MHWS	Mean High Water Springs
MMMP	Marine Mammal Mitigation Plan
MMO	Marine Management Organisation
MMV	Measurement and Verification
MPCP	Marine Pollution Contingency Plan
NRW	Natural Resources Wales
NRW-MLT	Natural Resources Wales Marine Licencing Team
NSTA	North Sea Transition Authority

Acronym/ Initialisation	Description
OFLO	Offshore Fisheries Liaison Officer
OGA	Oil and Gas Authority
OP	Offshore Platform
OPRED	Offshore Petroleum Regulator for Environment and Decommissioning
PAD	Protocol for Archaeological Discoveries
PD	Proposed Development
PDE	Project design envelope
PEMP	Project Environmental Monitoring Plan
PoA	Point of Ayre
RAMS	Risk Assessments and Method Statement
SATs	Subsidiary Application Templates
SEAR	Safety and Environmental Awareness Report
SEM	Stakeholder Engagement Manager
SPMP	Scour Protection Management Plan
VMP	Vessel Management Plan
WFD	Water Framework Directive
WSI	Written Scheme of Archaeological Investigation

## Units

Unit	Description
kV	Kilovolt (electrical potential)
Km	Kilometre (distance)
Km <sup>2</sup>	Squared kilometres (area)
m	Metre (distance)
nm	Nautical miles (distance)

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# 1 INTRODUCTION

## 1.1 Purpose and scope

The Applicant, Liverpool Bay CCS Limited (an Affiliate Group of Eni UK Limited) for the Hynet Carbon Dioxide Transportation and Storage Project (hereafter referred to as “the Project”). The Project is designed to transform a region of the UK into the world’s first low carbon industrial cluster by 2030. This Environmental Management Plan (EMP) provides a consolidated document that contains the various environmental commitments, identified during the Environmental Impact Assessment (EIA), required during the construction, operation, and maintenance phases of the offshore elements of the Project (hereafter referred to as the ‘Proposed Development’).

The aim of the EMP is to provide a tool to ensure all the mitigation measures and monitoring commitments made in the Offshore Environmental Statement (ES) are implemented. The EMP provides information on the Proposed Development, detailing the appropriate measures for the avoidance, minimisation, and control of any environmental impacts associated with the Proposed Development identified as part of the Offshore EIA; and provides a framework for monitoring the environment.

The EMP will be finalised and adopted prior to the construction phase of the Proposed Development and will also be reviewed and updated prior to being adopted for the operation and maintenance phase and similarly for the decommissioning phase.

During these updates, further environmental requirements, and management measures to be applied during these phases will be incorporated.

The EMP is a key construction document and will ensure all monitoring and mitigation commitments included as part of the Offshore ES, including those that are considered necessary to reduce potential impacts, are implemented. This outline EMP does not apply to the onshore infrastructure for the Project landward of Mean High Water Springs (MHWS).

## 1.2 Document structure

This EMP is structured as follows:

- Part I – Management, implementation, and communication. This section provides information on the management and implementation of the EMP, including roles and responsibilities, and lines of communication.
- Part II – Environmental impacts and control measures. This section includes a register of potential environmental impacts identified within the Offshore ES with associated control measures.
- Part III – Annexes included as part of the EMP including sub-plans to the EMP and reporting proformas. These sub-plans include:
  - Annex A – Marine Pollution Contingency Plan (MPCP);
  - Annex B – Invasive Non-Native Species Management Plan (INNSMP);
  - Annex C – Marine Mammal Mitigation Plan (MMMP); and
  - Annex D – Written Scheme of Archaeological Investigation (WSI) and Protocol for Archaeological Discoveries (PAD).

## 1.3 Other relevant documents

Once finalised, this EMP will form part of a suite of consent plans that will be required as a condition of the Section 36 Consent and associated Marine Licences for the Proposed Development. At this stage, the list of final consent plans that will be required is unknown. However, where commitments to specific consent plans



have been identified as designed in mitigation within the Technical Assessments, outline versions of these plans have been provided as appendices within volume 4 of the Offshore ES. These outline consent plans include:

- Marine Mammal Mitigation Plan (MMMP) (volume 4, appendix S ; and
- Invasive and Non-native Species Management Plan (INNSMP) (volume 4 appendix T.

In addition to the consent plans listed above the Applicant will also be required to prepare a Project Environmental Monitoring Plan (PEMP). The PEMP will set out the Applicant's commitments to monitoring the potential effects of the Proposed Development on key receptors and provide detail on how that monitoring will be delivered across all stages of the project (construction, operation, and maintenance phases). This plan will be developed in consultation with the Marine Management Organisation (MMO), Natural Resources Wales (NRW) and other key stakeholders.

Other consent plans likely to be required include Cable Plan(s) for the offshore electrical cables, Piling Strategy, Construction Method Statement (CMS) and Construction Programme (CP), and Development Specification and Layout Plan (DSLPL). Most of these plans require further detailed design work to be completed prior to preparation.

This EMP, sub-plans and all other required consent plans will be developed once further detailed design work has been completed for the Proposed Development and post consent requirements and consent conditions are agreed. The consent plans will be prepared in consultation with key stakeholders for submission to, and approval by, the relevant authority prior to the commencement of construction.

The outline consent plans included in this Offshore ES will be reviewed and updated as necessary throughout the development of the Proposed Development, to a schedule agreed with the relevant authority. These documents will always reflect the commitments made in the Offshore ES and any associated conditions of consent or requirements agreed with the relevant authorities.

## 1.4 Background and consents

### 1.4.1 Description of the Proposed Development

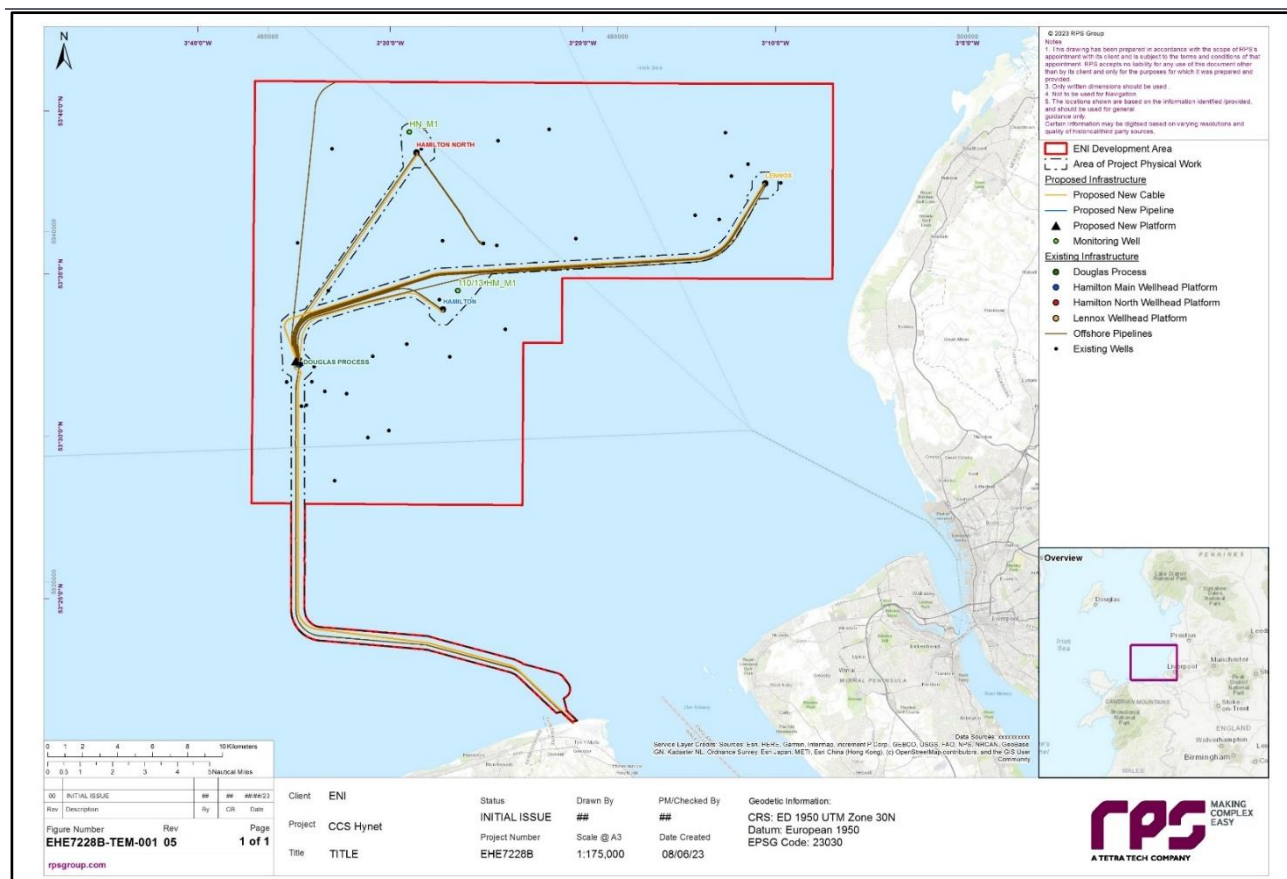
Liverpool Bay CCS Limited (an Affiliate Group of Eni UK Limited) Carbon Dioxide Transport & Storage Project is being developed as a key part of the HyNet Northwest full-chain hydrogen and CCS industrial decarbonisation project (the HyNet Project), which is designed to transform a region of the UK into the world's first low carbon industrial cluster by 2030. The Project is in the CS004 CO<sub>2</sub> Appraisal and Storage Licence area<sup>1</sup>, ~12 km to the north of the Welsh coastline and 2 km west of the English coastline (Figure1 1). The licence area covers ~576.82 km<sup>2</sup> and encompasses the depleted hydrocarbon reservoirs of the Hamilton, Hamilton North, and Lennox fields. The Proposed Development will be located within the Eni development area defined by both the Licence area (CS004), and the pipeline and cable corridor connecting the Point of Ayr (PoA) Terminal to Douglas Offshore Platform (OP) (up to MHWS), as shown by the red line in Figure1 1. The corridor shore approach is located north of Talacre in Flintshire, Wales, near the Dee Estuary mouth.

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<sup>1</sup> Carbon dioxide appraisal and storage licence – CS004 (Eni UK Limited), 8 October 2020. Available at: <https://www.nstauthority.co.uk/licensing-consents/carbon-storage/> (accessed 19 April 2023).



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**Figure1 1: Existing and Planned Infrastructure in Relation to the Proposed Development**

The Eni development area is in water depths from 0.72 m below Lowest Astronomical Tide (LAT) to 35 m LAT, with average water depths across the Eni development area ~20 m LAT. The Lennox OP is in 7.2 m of water while the Douglas OP complex is in 29.2 m of water.

The Proposed Development is located entirely within the 12 nm limit of both Welsh and English territorial waters. The key offshore infrastructure of the Proposed Development will include:

- installation of a new Douglas CCS platform to replace the existing Douglas Process platform to receive CO<sub>2</sub> from the onshore PoA Terminal and distribute CO<sub>2</sub> to the Hamilton Main, Hamilton North, and Lennox wellhead platforms and when necessary, provide heating to the CO<sub>2</sub> stream. Installation of the new Douglas CCS platform will include up to eight driven piles.
- installation of new sections of pipeline to connect the new Douglas CCS platform and the existing subsea natural gas pipelines.
- installation of new topsides on the Hamilton Main, Hamilton North, and Lennox wellhead platforms to receive and inject CO<sub>2</sub> into the depleted hydrocarbon reservoirs.
- repurposing of the existing subsea natural gas pipelines for their change of use from hydrocarbon to CO<sub>2</sub> service.
- development of the Hamilton Main, Hamilton North and Lennox reservoirs for CO<sub>2</sub> storage through the drilling and re-completion of injection wells by side-tracking existing production wells. This includes drilling and recompletion operations, all of which will be within the existing footprint (template) of each platform.

- implementation of a programme of Monitoring, Measurement and Verification (MMV) activities. This includes the drilling of two new monitoring wells, one at Hamilton North and one at Hamilton Main. Additional monitoring wells will be created from the recompletion of existing wells within the existing footprint (template) of each platform: one monitoring well created by side-tracking an existing well in Lennox; and two sentinel wells, one in Hamilton North and one in Lennox.
- installation of two submarine 33 kilovolt (kV) power cables, with integrated fibre-optic cable connections (35 km from PoA Terminal onshore to the modified Douglas platform, including within the intertidal/foreshore area up to MHWS, within Welsh waters only).
- installation of new submarine 33 kV power cables with integrated fibre-optic connecting the modified Douglas platform with the Hamilton Main (12 km; 33 kV), Hamilton North (15 km; 33 kV) and Lennox (35 km; 33 kV) platforms.
- installation of concrete mattresses and external cable protection, at crossings of existing cables, and in areas where cable burial is not deemed feasible, or as a remedial secondary protection measure if the target cable depth of lowering cannot be achieved.

A project design envelope (PDE) approach has been adopted that considers Planning Inspectorate Advice Note Nine: Rochdale Envelope, July 2018 (PINS, 2018). The provision of a PDE is intended to identify key parameters to enable the environmental assessment to be carried out whilst retaining enough flexibility to accommodate further refinement during detailed design, and installation.

For a full description of the Proposed Development, please refer to volume 1, chapter 3 of the ES.

## 1.4.2 Consents

For a full description of consenting requirements relevant to the Proposed Development, please refer to volume 1, chapter 2 of the ES. A summary of these consenting requirements is given in Table 1.

**Table 1: Proposed Development Planning and Consenting requirements**

Activity	Permit/Licence/Requirement	Key Legislation
Benthic Ecology Baseline Surveys: <ul style="list-style-type: none"> <li>– Intertidal Benthic Survey</li> <li>– Subtidal Benthic Survey</li> </ul>	<ul style="list-style-type: none"> <li>• Marine Licence (Band 1) from NRW-Marine Licencing Team (MLT) (MMO exemption)</li> <li>• OPRED Survey Notification</li> <li>• Crown Estate seabed survey licence</li> </ul>	<ul style="list-style-type: none"> <li>• Marine and Coastal Access Act (MCAA) 2009</li> </ul>
Pipeline repurposing/Installation of new pipeline spools to new platform	<ul style="list-style-type: none"> <li>• Pipeline Works Authorisation (PWA) updates/renewals for the repurposed pipeline</li> <li>• Marine Licence Band 3</li> </ul>	<ul style="list-style-type: none"> <li>• The Pipeline Safety Regulations 1996</li> <li>• The Offshore Chemicals Regulations 2002 (as amended)</li> <li>• Marine and Coastal Access Act 2009 (MCAA)</li> </ul>
New Platform Installation	<ul style="list-style-type: none"> <li>• Marine Licence Band 3</li> <li>• Consent to Locate for fixed installation</li> </ul>	<ul style="list-style-type: none"> <li>• Marine and Coastal Access Act 2009 (MCAA)</li> <li>• Energy Act 2008</li> </ul>
Drilling	<ul style="list-style-type: none"> <li>• Master Application Templates (MATs) and Subsidiary Application Templates (SATs) for new wells, side-track drilling and well intervention</li> </ul>	<ul style="list-style-type: none"> <li>• Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020</li> <li>• The Offshore Chemicals Regulations 2002 (as amended)</li> <li>• Part 4A of The Energy Act 2008 (as amended)</li> </ul>

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Activity	Permit/Licence/Requirement	Key Legislation
		<ul style="list-style-type: none"> <li>• The Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended)</li> <li>• Consent for a Marine Geological Survey or Investigation under The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (as amended)</li> </ul>
Environmental Impact Assessment	<ul style="list-style-type: none"> <li>• Scoping</li> <li>• Environmental Statement (ES) Production</li> <li>• Habitat Regulations Assessment screening and Appropriate Assessment</li> <li>• WFD assessment</li> <li>• Submission and Public Notice</li> </ul>	<ul style="list-style-type: none"> <li>• The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020;</li> <li>• The Offshore Environmental Impact Assessment (The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended));</li> <li>• HRA (Conservation of Habitats and Species Regulations 2017 (as amended); Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended));</li> <li>• Water Framework Directive; and</li> <li>• The Habitats and Birds Directive</li> </ul>
Carbon Storage	<ul style="list-style-type: none"> <li>• Carbon Dioxide Appraisal and Storage Licence already awarded by the Oil and Gas Authority (OGA) (now the North Sea Transition Authority; NSTA). Licence No. CS004</li> <li>• Crown Estate Lease</li> <li>• Carbon Storage Permit</li> </ul>	<ul style="list-style-type: none"> <li>• Energy Act 2008</li> <li>• The Storage of Carbon Dioxide (Licensing etc.) Regulations 2010</li> </ul>
Cable Laying and associated activities	<ul style="list-style-type: none"> <li>• Marine Licence Band 3</li> </ul>	<ul style="list-style-type: none"> <li>• Marine and Coastal Access Act (MCAA) 2009 Marine Licence</li> </ul>

## **2 PART I: MANAGEMENT, IMPLEMENTATION AND COMMUNICATION**

### **2.1 Roles and Responsibilities**

#### **2.1.1 Overview**

This section outlines the roles and responsibilities of all the Applicant personnel, Contractors, and Subcontractors in relation to this EMP.

The Applicant personnel, Contractors and Subcontractors must comply with the requirements of the final EMP and all relevant associated documents. The key roles relevant to this EMP are described in sections 2.1.2 to 2.1.4.

The key roles with specific roles relating to the EMP are:

- the Applicant Environmental Manager;
- the Independent Environmental Clerk of Works (ECoW);
- the Applicant Stakeholder Engagement Manager (SEM);
- the Applicant Package Managers;
- the Contractors/Subcontractors Environmental Manager;
- the Contractor's Community Liaison Manager (CLM);
- Archaeological Contractor;
- Marine Mammal Observer (if required);
- Fisheries Liaison Officer (FLO);
- Offshore Fisheries Liaison Officer (OFLO); and
- Marine Coordinator.

These roles will be further defined and agreed with the relevant authority prior to the commencement of construction activities.

#### **2.1.2 The Applicant: key management roles relating to environmental management**

##### **2.1.2.1 The Applicant environmental manager**

An Environmental Manager appointed by the Applicant will be in place for the construction and the operation and maintenance phases of the Proposed Development. The Environmental Manager will manage ongoing compliance with the final EMP and all supporting documents, including those aforementioned. The Applicant's appointed Environmental Manager will have overall responsibility for discharging consent conditions including managing the delivery of all consent plans including this EMP. The Applicant's appointed Environmental Manager will be supported by Package Managers who will be responsible for the engineering work packages covering marine installation during construction. The Package Managers will have similar responsibilities as those of the Applicant Environmental Manager but focussed on their specific package/work streams.

An Environmental Manager, together with a SEM, will be appointed by the Applicant and in place throughout construction, and operation and maintenance phases.

The key responsibilities of the Applicant Environmental Manager may include:

- monitoring compliance of all environmental responsibilities included in the EMP and supporting documents (e.g. consent management plans) are fulfilled for the construction and operation and maintenance phase of the Proposed Development;
- appointment and management of the Independent Environmental Clerk of Work (ECoW);
- monitoring compliance of the Contractors/Subcontractors with the implementation of the EMP and its requirements;
- monitoring compliance with contractual requirements, (e.g. environmental management issues are covered in project progress meetings, together with inductions and training); and that any corrective actions arising from environmental audits are addressed; and
- reporting to the Applicant Senior Management Team.

The list of responsibilities for the Applicant's appointed Project Manager will be further refined as part of any required updates to this EMP prior to commencement of construction.

### 2.1.2.2 The Independent Environmental Clerk of Works

The Applicant will be required to appoint an independent ECoW. The ECoW will need to be appointed pre-construction in time to review and approve the draft consent management plans prior to submission to the relevant authority for approval and will be required to remain in post throughout construction and into the operation and maintenance phase of the Proposed Development.

The Applicant's appointed ECoW will report directly to the Applicant's appointed Environmental Manager and will work in cooperation with Contractors and Subcontractors. The Applicant's ECoW will also be required to agree a communication strategy with the relevant authority. The Applicant ECoW will notify all Proposed Development staff when environmental issues arise as well as inform the regulators and their statutory stakeholders as required of any non-compliance with the EMP.

Key responsibilities of the Applicant ECoW are expected to include:

- quality assurance of final draft versions of all consent management plans and programmes;
- monitoring and reporting of compliance with the consent conditions and all environmental mitigation and monitoring measures included in the application for the Proposed Development;
- provision of on-going advice and guidance to the Applicant in relation to achieving compliance with consent conditions, including but not limited to conditions relating to the implementation of consent management plans;
- provision of reports on quality assurance and the Applicant's consent compliance to the relevant authority as required, at timescales to be determined by the relevant authority;
- induction and toolbox talks to onsite construction teams on environmental policy and procedures, including temporary stops and keeping a record of these;
- monitoring that the Proposed Development is being constructed in accordance with the consent management plans and in compliance with all relevant regulations and legislation;
- supporting the promotion of a positive culture of environmental awareness throughout the construction and operation and maintenance phases of the Proposed Development, including increasing awareness of environmental considerations;
- reviewing and reporting incidents/near misses and reporting any changes in procedures as a result to the relevant authority;
- ensuring that all of the ECoW environmental responsibilities included in the EMP and supporting documents are fulfilled for the construction phase and, when required, for the operation and maintenance phase of the Proposed Development;

- offering an environmental presence and undertaking on-site audits throughout the construction phase to supervise the fulfilment by the Contractor and Subcontractors of their responsibilities regarding the Offshore ES, EMP and supporting environmental documentation;
- attending project meetings and contributing on environmental matters when required; and
- supporting the Applicant Environmental Manager in liaising with stakeholders.

### 2.1.2.3 The Applicant Stakeholder Engagement Manager

The Applicant SEM will be in position throughout the Project lifetime to facilitate engagement with the community. The Applicant SEM will cooperate with the CLM appointed by the Contractor.

## 2.1.3 Contractors and Subcontractors

The Contractor and all Subcontractors will be contractually required to comply with the required good environmental practice stated in the Offshore ES, EMP, and associated Consent Management Plans, and ensure their works are fulfilling the stated requirements.

The Contractor, in liaison with the Applicant, will update the EMP as necessary during the construction phase of the Proposed Development.

A Contractor's Environmental Manager with relevant experience and expertise will be hired by the Contractor throughout each phase of the Proposed Development. The Contractor's Environmental Manager will verify the correct implementation on the Proposed Development of the environmental design, control and mitigation measures outlined in the Offshore ES, EMP and supporting consent documentation.

A Contractors' CLM will liaise with the community during the construction phase of the Proposed Development.

All the Applicant's Contractors and their Subcontractors will ensure that their works are in line with the requirements of the Offshore ES and EMP.

Key responsibilities of the Contractors/Subcontractor include:

- ensuring all environmental responsibilities in relation to the Contractor/Subcontractors included in the EMP and supporting documents are fulfilled for the duration of the Proposed Development;
- ensuring adequate resources and processes are in place to ensure compliance with the EMP and manage the potential environmental impacts of their activities;
- providing risk assessments and method statements (RAMS) addressing all environmental aspects of all planned activities prior to these works commencing. These RAMS will be approved by the Applicant and the Contractor/Subcontractor should provide RAMS for approval at least two weeks prior to commencement of works. RAMS will include proposed mitigation measures required for any work or task to be undertaken;
- implementing required environmental control measures as stated in the Offshore ES, EMP and supporting environmental documentation;
- reading, understanding and complying with any consent conditions related to their activities;
- maintaining regular communication with the Applicant Environmental Manager and the Applicant ECoW, principally to report any environmental risks, incidents or queries as a priority;
- providing collated data required by the Applicant Environmental Manager collected from environmental monitoring, together with performing inspections and environmental reporting;
- ensuring sufficient training and induction of all their personnel before the start of any work on the Proposed Development;
- ensuring the competency of all staff under their supervision and that their tasks are undertaken in line with the EMP; and



- complying with relevant environmental legislation and undertaking their duties in line with environmental policies, plans, procedures and rules for the Proposed Development.

This EMP will provide the minimum standards for all Contractors and Subcontractors to comply with. Any additional control measure identified during the review of their activities needs to be specified in Contractor/Subcontractor RAMS.

#### **2.1.3.1 Contractor's Environmental Manager**

The Contractor's Environmental Manager will be a full-time position from the start of the Proposed Development contract to ensure compliant implementation of site activities. The Contractor's Environmental Manager requires a minimum of five years of relevant site experience.

The key responsibilities of the Contractor's Environmental Manager may include:

- ensuring all environmental responsibilities relating to the Contractor's Environmental Manager, including those in the EMP and supporting documents, are fulfilled for the duration of the relevant phases of the Proposed Development;
- ensuring that sufficient resources and process are available to deliver/comply with the EMP and to manage potential environmental impacts;
- reviewing and regularly refining the EMP and supporting environmental documentation during the construction phase of the Proposed Development, while ensuring consistency of these documents with the Offshore ES. This will include incorporation of any environmental requirements introduced through the consents process. Any revisions to the EMP or supporting environmental documentation require approval by the Applicant Environmental Manager;
- undertaking environmental audits, inspections and reporting to ensure the construction activities adhere to the Offshore ES, EMP and any supporting environmental documentation;
- collating and conducting an environmental monitoring programme and collating relevant environmental reports and records. All reports, records and monitoring programme require the approval of the Applicant Environmental Manager;
- promoting a positive environmental culture via training and engagement with management and operatives, and promoting increased environmental awareness;
- ensuring timely remediation/reporting relating to any environmental incidents/non-compliance;
- communicating statutory requirements and good environmental practices stated in the EMP by planning toolbox talks. These should be on-site based activities and updated to reflect any reports of non-compliance. These responsibilities should be communicated to all relevant Contractors/Subcontractors outlined in this EMP;
- supervising and monitoring the implementation of, and ongoing compliance with the EMP;
- advising Contractors and Subcontractors on compliance with the EMP; and
- introducing site staff to the environmental policies, procedures, and requirements of the EMP.

#### **2.1.3.2 Contractor's Community Liaison Manager**

The CLM will be named by the Contractor and key responsibilities may include:

- informing inhabitants and other sea users in proximity to the works area of the start of particular work activities;
- maintaining regular communication with neighbours and other sea users, particularly regarding progress and issues that have the potential to affect them.
- liaising with local councils when necessary; and



- liaising with the police and emergency services when required.

The Contractor's CLM will maintain contact with the Applicant SEM, especially to obtain their approval prior the engagement with the local community, and external parties.

## 2.1.4 Supporting Environmental Roles

### 2.1.4.1 Archaeological Contractor

The Archaeological Contractor will be in post throughout the construction phase, and, if required, during the operation and maintenance phase, and will be the first person that the Applicant Environmental Manager will contact in relation to archaeological matters. The roles and responsibilities associated with the Archaeological Contractor are outlined in the WSI and PAD (annex D of this EMP).

### 2.1.4.2 Marine Mammal Observer

Marine Mammal Observer(s) may be in post throughout noise generating activities during the construction period, if required. These periods and the roles and responsibilities associated with the Marine Mammal Observer(s) are outlined in the MMMP volume 4 appendix S . In addition, a Passive Acoustic Monitoring operator/Acoustic Deterrent Device operator may also be in place, if required, and their associated roles and responsibilities are also outlined in the MMMP volume 4 appendix S .

### 2.1.4.3 Fisheries Liaison Officer

The Applicant will be required to appoint a Fisheries Liaison Officer (FLO). The main responsibilities of the FLO will include:

- acting as key point of contact for the Proposed Development for fisheries stakeholders;
- identifying commercial vessels and skippers operating in areas relevant to the Proposed Development and potential interactions of the Proposed Development and associated activities with fishing operation within and around the Proposed Development;
- liaising with fisheries stakeholders through regular meetings and maintaining a vessel database, including vessel descriptions, information on fishing techniques deployed, skipper's issues and contact details;
- preparing and circulating information and notices (e.g. notices to mariners) relevant to the Proposed Development and associated activities that might interact with fisheries stakeholders;
- establishing and maintaining a sound working relationship with the fishing industry and communicating, on behalf of the Applicant;
- identifying and communicating to the Applicant relevant fishermen's concerns and sensitivities in regard to the activities of the Proposed Development; and
- acting as an OFLO, when necessary.

### 2.1.4.4 Offshore Fisheries Liaison Officer

OFLOs will be appointed onboard survey and construction vessels to communicate with fisheries stakeholders at sea where this is deemed to be required.

Main responsibilities of the OFLO will include:

- communicating regularly with the FLO and the Applicant and/or their Contractors/Subcontractors regarding fishing vessel activities around the Proposed Development;
- informing the masters and watch officers of survey and construction vessels of fishing activities (including gears and operation methods) in the area surrounding their vessel working zone(s) along with

communicating with the vessel masters to provide relevant details of fishing vessels (e.g. location, operation, schedule of activities and advisory safety zones);

- liaising with fishermen who may have static gear deployed in the vicinity of the Proposed Development as well as around the Proposed Development advisory safety zones and vessel transit routes; and
- collaborating with vessel masters to ensure compliance with relevant aspects of the Fisheries Liaison and Coexistence Plan (FLCP).

#### **2.1.4.5 Marine Coordinator**

A Marine Coordinator shall be appointed for the Proposed Development. The key responsibility of the Marine Coordinator will be the coordination of day-to-day vessel activity associated with the Proposed Development.

Some of the main duties of the Marine Coordinator in relation to the EMP include:

- coordinating daily activities of vessels on the Proposed Development;
- supporting the fulfilment of the requirements outlined in the EMP and relevant Consent Management Plans particularly regarding:
- informing and advising other vessels working in the area of a potential archaeological discovery;
- assisting in the coordination and execution of the planned response to a pollution incident from a vessel or vessel associated activity and keeping the Applicant informed (see annex A). Key roles that will be kept informed will be the Applicant Project Manager, the Applicant Environmental Manager, the Applicant ECoW and relevant Contractors/Subcontractors; and
- supervising the planned response and any clean-up operation required in the event of a spill originating from an installation of the Proposed Development (see annex A).

#### **2.1.5 Contact details**

A Proposed Development Contacts Sheet will be compiled prior to the commencement of construction at the Proposed Development. This list will include contact details of all Applicant, Contractor/Subcontractor and relevant third parties. This list will be made available to the Proposed Development Team and will be regularly updated throughout the construction, and operation and maintenance phases.

The complete list of contacts is provided in the Contacts Sheet (annex E of this EMP).

As a minimum, the Contacts Sheet will include the following information:

- Company/organisation;
- Position;
- Name;
- Telephone/mobile number;
- Email address; and
- Office location.

### **2.2 Communications and reporting**

Regular progress meetings will be held before and during construction and operation and maintenance activities, between the Applicant Environmental Manager (and the Applicant ECoW as required) and relevant Contractors/Subcontractors. During these progress meetings, the Applicant Environmental Manager and/or Contractor's Environmental Manager will present a section on environmental management and consents compliance.

Contractor/Subcontractor RAMS will be reviewed, and copies of the relevant consents will be provided to the Contractors and/or Subcontractors and they will be made aware of the consent obligations associated with a particular activity.

All Applicant personnel, Contractors and Subcontractors should report any environmental concerns or issues immediately. A Safety and Environmental Awareness Report (SEAR) will be completed for all potential (near miss) or actual environmental incidents or emergencies which occur on-site.

## 2.3 External communications

External communications, notifications and reporting including any environmental incidents in relation to the Proposed Development activities will be carried out in accordance with the commitments included in the Offshore ES and the requirements of the consent conditions.

### 2.3.1 Incident reporting

The procedures to report spill or pollution events are provided in the MPCP (annex A to this EMP).

The procedures to carry out following an environmental incident (excluding marine pollution incidents) will be provided in the Environmental Incident Reporting Procedure which will be produced, approved, and annexed to this EMP prior to the start of the construction activities.

### 2.3.2 Dropped objects

All dropped objects deemed to be a hazard to safe navigation by the Applicant, Contractors or Subcontractors will need to be recorded and reported to the MMO/NRW.

## 2.4 Training, auditing and change management

### 2.4.1 Competence, training, and change management

Contractors and Subcontractors will ensure that they have adequate environmental management resources and procedures in place for the duration of the Proposed Development's scope of works that they are contracted to undertake. To ensure adherence to the EMP and environmental and consents requirements all Contractors documentation will be reviewed by the Applicant.

The Contractor's Environmental Manager will be responsible for providing environmental training and promoting awareness regarding environmental management using various means such as:

**Inductions:** Environmental induction training will be presented to all the personnel working and visiting the site (the Applicant personnel, Contractor/Subcontractor employees, suppliers and other visitors) to inform them of the content of the EMP that is applicable to them.

The following details, as a minimum, will be provided to all inductees:

- description of the specific environmental risks relevant to the inductees' work onsite;
- description of the main environmental aspects of concern at the site;
- species and/or habitat protection requirements;
- archaeological safeguarding measures;
- pollution prevention measures;
- waste management measures; and
- plant service and repair procedures.

An Environmental Constraints Map, based on survey data collected during the planning and pre-commencement phases, showing constraints by environmental sensitivities will be provided to the Contractor and updated as required.

The Contractor will produce an Environmental Risk Map to be used during induction and displayed on-site and update the Environmental Risk Map, when necessary, following consultation with the Applicant Environmental Manager. A toolbox talk will follow any update to clarify the changes and offer discussion opportunities. The Environmental Risk Map will be based on the Environmental Constraints Map and will illustrate the sensitive areas and potential sources of pollution.

#### **Toolbox talks:**

Regular toolbox talks and training will be delivered by specialist staff on-site to discuss any update to the EMP relevant to the personnel on-site together with environmental issues arising on-site to ensure continuous training and reinforce environmental awareness.

The toolbox talks will be scheduled at least one week before the beginning of the construction activities and will be in line with the programme of construction and operation and maintenance phases' activities. In the case of non-compliance with the EMP or unforeseen circumstances, additional toolbox talks and training will be scheduled.

The Contractor will maintain a record of all the toolbox talks and training delivered and provide it to the Applicant Environmental Manager when requested.

The following environmental training, as a minimum, will be provided:

- training on the use of spill kits (onboard vessels and in water), on a regular basis (e.g. to account for staff/Subcontractor changes).

Additional toolbox training may include:

- waste management, including waste storage, waste segregation and littering;
- control of fuel and refuelling, and fuel handling procedures; and
- ecologically and archaeologically sensitive areas.

#### **Awareness materials:**

Environmental notice board(s) will be prominently displayed to permit all personnel to be able to review a notice board on a daily basis. One notice board will be positioned in every vessel congregation area as a minimum.

The environmental notice board will be maintained by the Contractor and updated when required (at least monthly) throughout the construction phase.

The following information, as a minimum, will be provided on the notice boards:

- description of the key environmental risks alongside the risk mitigation measures;
- the Environmental Constraints/Risk Map illustrating the location of the environmental sensitivities and the required zones of exclusion;
- location of emergency response equipment; and
- key contact numbers and responsible personnel.

To promote good environmental practice and to inform all personnel on-site, environmental labels and signs will be used across the site.

## **2.4.2 Monitoring and audits**

The Commitments Register will be the principal tool available for ensuring compliance with consent conditions and mitigation commitments. The Commitments Register will contain all the commitments (e.g. mitigation

measures and monitoring measures) included in the Offshore ES and the phase/duration over which they apply.

The Commitments Register will also provide a track and audit trail of compliance throughout the construction and operation and maintenance phases of the Proposed Development.

The Commitments Register will be prepared and approved in advance of the construction phase. The Commitments Register will be maintained throughout the construction phase of the Proposed Development. Similarly, prior and during the operation and maintenance phase, the Commitments Register will be updated, reviewed, and maintained.

Compliance with the EMP will be monitored through a series of audits during the construction, and operation and maintenance phases of the Proposed Development. Following a toolbox talk, an audit will be scheduled to ensure the requirements and procedures have been understood by, for instance, undertaking site visits and conversations with relevant personnel to monitor awareness. Checklists, informed by review of the EMP and Contractor RAMS, will be prepared. These will be used to facilitate the audit process.

The following environmental audits may be completed:

- at least one per quarter, to be confirmed by the Applicant. The Applicant may choose to undertake audits more frequently;
- monthly, during construction. These will be undertaken by the Contractor's Environmental Manager and a record of all completed audit forms, and records of corrective action and close outs will be maintained and provided to the Applicant Environmental Manager;
- audits of Subcontractors on a quarterly basis to be undertaken by the Contractor's Environmental Manager. Audit reports will be provided to both the Contractor and the Applicant within two weeks of the audit being undertaken;
- environmental inspections will be undertaken weekly during construction by the Contractor's Environmental Manager and all relevant records will be delivered to the Applicant when and as requested.

A record of all the details and findings arising from monitoring and audit activities will be maintained and any observation or corrective actions will be addressed, with procedures revised in the EMP as required. These will be submitted to the Applicant for approval prior to implementation.

### **2.4.3 Review and Change Management**

The EMP will be reviewed at regular intervals throughout the construction and operation and maintenance phases of the Proposed Development. The Applicant will contractually require Contractors' and Subcontractors' Environmental Managers to comply with the EMP. All updates to the EMP made by the Contractor require the review and approval of the Applicant.

The EMP will be reviewed at regular intervals or when any important new information, methods, procedures or good environmental practice become available. The schedule for reviews will be agreed with the relevant authority post-application. The EMP will also be revised following any findings or lessons learned during the construction, and/or the operation and maintenance phases.

In the event of a new environmental sensitivity being identified during works, change management procedure will be followed by the Contractor's Environmental Manager (as recommended in IEMA, 2008). An assessment of potential impacts will be initiated by the Contractor's Environmental Manager following the notification of a change and if necessary, the EMP will be updated and submitted to the relevant authority for approval. Every change to the EMP will be recorded as part of the EMP review audit trail, and this will include details of the review undertaken.

## 3 PART II: ENVIRONMENTAL IMPACTS AND CONTROL MEASURES

### 3.1 Environmental Impacts and Control Measures

In this section of the EMP, commitments stated in the Offshore ES will be translated into an appropriate format allowing their practical implementation by Contractors and Subcontractors. This follows the IEMA Practitioner Guide, which states that “*the overall objective of an EMP is to provide a continuous link or ‘bridge’ between the design phase of a Proposed Development, conditions attached to consents, Proposed Development construction, and into the operational phase*” (IEMA, 2008).

The complete list of enhancement, mitigation and monitoring commitments is provided in volume 3 appendix E, as a Commitments Register. As the Commitments Register is developed from the commitments made within the Offshore ES and in compliance with consent conditions, adherence to the EMP and accompanying annexes will ensure compliance with the consents awarded for the Proposed Development in relation to environmental considerations.

### 3.2 Management of Key Environmental Aspects and compliance Obligations

#### 3.2.1 Marine Species

In the event of a wildlife incident occurring as a result of activity associated with the Proposed Development (e.g. injury to a marine mammal, or an observed fish or bird mortality), the incident will be reported to the Applicant Environmental Manager or Applicant ECoW as soon as possible. Details of the activity being undertaken, pictures and weather conditions are the minimum information to be provided. The Applicant Environment Manager or Applicant ECoW will follow up with the relevant regulatory authority, where appropriate.

#### 3.2.2 Marine Archaeology

The procedures to be followed on discovering any marine archaeology during the construction and operation and maintenance phases of the Proposed Development are set out in the WSI and PAD (annex D to this EMP).

#### 3.2.3 Other Marine Users

The approach to management and mitigation of potential impacts on other marine users is described in volume 3, appendix E. and will be provided in the following plans prior to construction, which are not included under the EMP:

- FLCP;
- Vessel management plan (VMP); and
- Lighting and marking plan (LMP).

Some of the specific measures adopted by these plans are:

- the adoption of advisory safety zones;
- appropriate notification of activities to other marine users;
- a clear process of marine coordination of all vessels and vessel activity;
- appropriate marking and lighting of vessels;
- appropriate marking and lighting of the Proposed Development; and



- vessel transit planning, commercial fisheries relations, and management of commercial fisheries interactions.

### 3.2.4 Marine Pollution Prevention and Contingency Planning

The measures to be adopted to minimise the impacts from the release of pollutants from construction, and operation and maintenance phases of the Proposed Development are set out in the MPCP (annex A to this EMP).

### 3.2.5 Invasive Non-Native Species

The measures to be adopted for the management of marine Invasive Non-Native Species (INNS) during construction and operation and maintenance phases of the Proposed Development are set out in the INNSMP (annex B to this EMP).

### 3.2.6 Waste Management

A Waste Management Plan (WMP) is required by all Contractors and Subcontractors setting out details of all waste management procedures for their activities, details of expected waste arisings and procedures for waste management. The following aspects are expected to be a minimum requirement for the WMP:

- analysis of the waste arisings/material surpluses;
- specific waste management objectives for the Proposed Development;
- methods proposed for prevention, reuse and recycling of wastes;
- material handling procedures; and
- proposals for education of workforce and plan dissemination programme.

Some of the key responsibilities of the Contractors and Subcontractors addressed in the WMP are expected to include:

- complying with all relevant legislative and Offshore ES requirements and seeking mandatory permits and licences regarding waste management;
- providing a waste reduction toolbox talk to all personnel to increase awareness of recycling and waste reduction, and making sure the requirements of the WMP are understood;
- handling waste materials and refuses to limit the damage and disturbance as much as possible;
- sorting all waste in their specific suitably labelled secure container;
- checking the contents of the site waste and recycling containers on a weekly basis;
- reducing waste through reduction, recycling or waste elimination measures when feasible;
- storing and returning all relevant waste to shore and disposing of it according to the legal waste management framework; and
- agreeing with the principles of the Basel Convention of 1989 to avoid hazardous waste being unfairly exported to developing countries.
- the WMP must be provided to the Applicant for approval prior to commencement of the activities.
- the WMP will be updated for the operation and maintenance phases of the Proposed Development.



### 3.3 References

Institute of Environmental Management and Assessment (IEMA) (2008). Environmental Management Plans, Best Practice Series, Volume 12, December 2008.

## **4 ANNEXES**

All management plans at this stage are included as draft, however, prior to any construction, the final construction EMP will contain all final management plans. For the purposes of this application, the draft plans are included as separate appendices to the ES. These appendices are referenced under the relevant annexes below.

### **4.1 ANNEX A – MARINE POLLUTION CONTINGENCY PLAN**

A Marine Pollution Contingency Plan will be finalised before any construction.

## **4.2 ANNEX B – INVASIVE NON-NATIVE SPECIES MANAGEMENT PLAN**

See volume 4, appendix T

## **4.3 ANNEX C – MARINE MAMMAL MITIGATION PLAN**

See volume 4, appendix S

## **4.4 ANNEX D – WRITTEN SCHEME OF ARCHAEOLOGICAL INVESTIGATION AND PROTOCOL FOR ARCHAEOLOGICAL DISCOVERIES**

See volume 4, appendix U

## 4.5 ANNEX E – CONTACT DETAILS

Table E. 1: Contact Details Template

Name	Role	Company	Phone number	Email address	Office location
[TBC]					
[TBC]					
[TBC]					
[TBC]					

