AQUIND Limited

AQUIND INTERCONNECTOR

Marine Outline Construction Environmental Management Plan

The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(q)

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DOCUMENT

Document	6.5 Marine Outline Construction Environmental Management Plan
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TABLES

APPENDICES

1. INTRODUCTION

1.1. PURPOSE OF THIS DOCUMENT

1.1.1.1. The purpose of a Construction Environmental Management Plan ('CEMP') is to establish good management practices and will set out the overarching principles for environmental management of the construction of the Proposed Development.

1.1.1.2. This Marine Outline CEMP has been prepared on behalf of AQUIND Limited ('The Applicant') to support the Application for a Development Consent Order ('DCO'). The Application for the DCO is made in respect of the UK elements of the AQUIND Interconnector Project which will operate between France and the UK.

1.1.1.3. The Application for the UK elements covers the parts of the Project located onshore in the UK ('Onshore Components') and in the UK Marine Area, defined as all of that part of the Project from the Mean High Water Spring ('MHWS') mark in the UK out to the UK/France Exclusive Economic Zone ('EEZ') boundary line ('Marine Components').

1.1.1.4. Together the Onshore Components and the Marine Components comprise the 'Proposed Development', in respect of which the Application is made.

1.1.1.5. This Marine Outline CEMP is solely for the environmental management associated with the Marine Cable Corridor and marine works in UK Marine Area (i.e. the Marine Components), with a separate Onshore Outline CEMP provided for the Onshore works provided in document reference 6.9.

1.1.1.6. Assuming the DCO is granted, the Applicant will appoint relevant Contractors who will have demonstrated that they are competent in managing the effects of construction on the environment. This is important as it will be the duty of the contractors to follow the environmental management and mitigation arrangements prescribed in this Marine Outline CEMP, to minimise environmental risks and ensure compliance with any relevant requirements of the DCO.

The required scope of this Marine Outline CEMP is set out in the deemed marine licence which forms part of the draft DCO (document reference 3.1).

1.1.1.7. The Final Marine CEMP will be produced prior to construction and will be a live document. The Final Marine CEMP will be approved by the relevant licencing authority and will be periodically reviewed and updated by the Applicant as required, to ensure environmental risks are managed and mitigated throughout. Any updates to the Final Marine CEMP would be agreed with the relevant licencing authority. In particular, it will be updated to take account of the following:

- Changes in design;
- Changes in external factors such as regulations and standards;

- Any unforeseen circumstances as they arise such as new protected species or new archaeological finds and provide a mitigation framework for this;
- Good construction practices and ensure these are adopted and maintained throughout;
- The results of audits and inspections; and
- Learning points from environmental near misses and accidents.

1.1.1.8. All construction works will be undertaken in accordance with the Final Marine CEMP, other documents submitted in support of the DCO, and meet the requirements of licence conditions. This Marine Outline CEMP reflects environmental requirements identified to date, which have been identified for action as the Proposed Development progresses.

2. THE PROPOSED DEVELOPMENT (MARINE COMPONENTS)

2.1. SITE AND THE SURROUNDING AREA

2.1.1.1. The whole Project is comprised of three principal elements, being the onshore elements in the UK, the marine elements between the UK and France and the onshore elements in France.

2.1.1.2. Within the UK Onshore and UK Marine Area, the Proposed Development is comprised of the Marine Cable Corridor, Landfall location, Onshore Cable Route, Converter Station Area and potential temporary laydown areas/construction compounds.

2.2. PROPOSED DEVELOPMENT DESCRIPTION

2.2.1. SUMMARY

2.2.1.1. In broad terms, the Proposed Development will comprise the following components:

- Two pairs of High Voltage Direct Current ('HVDC') Marine Cables from the boundary of the EEZ to the UK at Eastney in Portsmouth;
- Jointing of the HVDC Marine Cables and the HVDC Onshore Cables;
- Two pairs of HVDC Onshore Cables;
- A Converter Station and associated electrical and telecommunications infrastructure;
- HVAC Onshore Cables, and associated infrastructure connecting the Converter Station to the Great Britain electrical transmission network, the National grid, at Lovedean Substation; and
- Smaller diameter fibre optic cables together with each of the HVDC and HVAC cable pairs and associated infrastructure.

2.2.1.2. The Proposed Development is to be carried out in part within a maximum parameter design envelope (the Converter Station) and in part within limits of deviation (the HDVC Onshore Cables and the HVDC Marine Cables). A full description of the Proposed Development is provided in Chapter 3 (Description of the Proposed Development) of the Environmental Statement ('ES') Volume 1 (document reference 6.1.3), with the design approach for each relevant part of the Proposed Development explained.

2.2.2. MARINE COMPONENTS

2.2.2.1. The Marine Cable Corridor is the section of Marine Cable Corridor from the UK Landfall out to the UK/France EEZ boundary line. Kilometre Points ('KP') have been used to denote positions along the centre line of the Marine Cable Corridor (see Figure 3.1 of the ES in Volume 2 (document reference 6.2.3.1). In UK waters, these start at KP 0 at Eastney beach and finish at KP 109 at the UK/France EEZ Boundary Line (Table 1).

Table 1 – KP of key features along the Marine Cable Corridor

KP	Key Feature
0.027	Start of the Marine Cable Corridor at MHWS
0.076	MLWS
1.0-1.6	Offshore HDD entry/exit point
8.600	10 m water depth
45.116	12 nmi boundary
109.107	UK/France EEZ Boundary Line

2.1. SUMMARY OF KEY ENVIRONMENTAL RECEPTORS

2.1.1.1. A summary of the key environmental receptors for the Proposed Development are contained within Table 2 below. The Final Marine CEMP will provide further detail on the specific receptors for each topic relevant to environmental management and whether any specific measures are required for a given receptor.

Table 2 – Key Environmental Receptors during Construction

Topic	Key Environmental Receptors
Physical Processes	• Seabed geology and morphology; • Local sediment transport regimes; and • Impacts on coastal and marine processes.
Marine Water and Sediment Quality	• Water Framework Directive water bodies; • Designated bathing waters; • Marine Protected Areas (including Special Areas of Conservation (SACs) and Special Protected Areas (SPAs)); • Shellfish waters; • Marine water quality; and • Marine sediment quality.

Topic	Key Environmental Receptors
Intertidal and Benthic Ecology	• Benthic habitats and species • Marine Protected Areas (including SACs and Marine Conservation Zones);
Fish and Shellfish	• Marine fish and shellfish species; and • Marine Protected Areas (including SACs and MCZs)
Marine Mammals	• Cetaceans; • Pinnipeds; and • Marine Protected Areas (including SACs)
Marine Ornithology	• Marine bird habitats; • Prey species and habitats; and • Marine Protected Areas (including SPAs, Ramsar sites and Sites of Special Scientific Interest (SSSIs)).
Commercial Fisheries	• UK fishing fleet; and • International fishing fleets;
Shipping, Navigation and Other Marine Users	• Commercial shipping; • Recreational activities; • Fishing activity; • Recreational angling; and • Other marine users.
Marine Archaeology	• Known wreck sites; • Potential maritime/aviation receptors; • Seabed prehistory; and • Historic seascape character.

2.2. TIMING OF ACTIVITIES

2.2.1.1. Indicative timings of the Proposed Development are outlined below but will be updated and approved by the Marine Management Organisation prior to the commencement of the works, in accordance with the draft DCO Requirements.

Table 3 – Outline construction timings

Key Task	Related Activities	Indicative Duration (Weeks)	Timeframe
Seabed Clearance / Preparation	All activities		2021 to 2023
	PLGR and OOS cable recovery	4 to 8	Q1 2022
	Boulder clearance	15	Q2 & Q3 2022
	Sandwave clearance	17	Q2 & Q3 2022
	Cable crossing preparation	1	Q3 2022
Landfall Installation	All activities		2021 to 2023
	Preparation, drilling and duct installation	44	Q4 2021 to Q3 2022
	Transition Joint Bay		Q3 2023
	Optical Regeneration Station		Q4 2023
Marine Cable Installation (UK)	All activities		Q2 2022 to Q4 2023
	Nearshore cable lay and burial	14 to 25	Q2 & Q3 2023
	Marine cable lay	16 to 30	Q2 & Q3 2023
	Marine cable burial	4 to 30	Q2 & Q3 2023
	Remedial protection	21 to 42	Q2 to Q4 2023
Cable Crossing	All activities		Q2 & Q3 2023
	Construction of crossing	2	Q2 & Q3 2023

3. ROLES AND RESPONSIBILITIES

3.1.1.1. Envisaged roles with defined environmental responsibilities are detailed in Table 1. The Final Marine CEMP will provide details of all roles relevant to environmental management. An organogram depicting environmental management roles and arrangements will also be provided in the Final Marine CEMP.

Table 4 – Outline Roles and Responsibilities

Role	Responsibilities
Project Manager / Director	• Overall environmental management of the Proposed Development, ensuring that all works are carried out in accordance with the Marine CEMP.
Environmental Advisor / Manager	• Work with programme planners and project managers to ensure consents are embedded within the programme. • Monitor submission of consent applications and ensure their timely delivery. • Provide input to consultation with consent granting bodies, commitment holders and other third parties. • Co-ordinate and manage all required scheduled consents. • Ensure environmental consents are obtained in line with the programme. • Monitor and report progress on consents and commitments. • Monitoring construction works for compliance against Environmental Risk Assessment and method statement control measures. • Co-ordination of all environmental documentation. • Monitoring environmental training, consultation and implementation of contractor procedures. • Attending HSE committee meetings. • Monitoring of all environmental incidents and ensuring they are reported and investigated. • Undertaking audits/inspections.

Role	Responsibilities
	• Monitor and advise on compliance with duty of care, the Waste Management Plan or any permits and/or exemptions. • Monitoring and measurement of waste. • Communicate sustainability good practice, innovation and targets to the project team and supply chain. • Keep a record of key performance indicators ('KPIs'). • Act as the main point of contact on environmental matters relating to the Proposed Development.
Public Relations Officer	• To advise on dissemination of project material to the public • To track complaints from members of the public and respond within reasonable time frames. • To liaise with members of the public regarding issues such as any specific anticipated nuisance.
Engineering Manager	• Ensure environmental issues and constraints are included in individual designs, in accordance with environmental design procedures.
Construction Manager	• Advising Contractor representative on the implementation of the Marine CEMP. • Monitoring construction works for compliance against Environmental Risk Assessment and any method statement control measures. • Monitoring environmental training, consultation and implementation of contractor procedures. • Accompanying Environment Inspections where required and any environmental authority inspections. • Attending Environmental co-ordination meetings.
Works Supervisors	• Ensuring that all work is carried out in accordance with project requirements. • Ensure that staff under their supervision are aware of their environmental responsibilities. • Ensure key risks are identified and brief operatives on

Role	Responsibilities
	environmental topics. • Carry out inspections to identify any environmental issues.
General Operatives	• Ensuring environmental mitigation measures are carried out during the course of their duties, in line with project requirements. • Working considerately with a good working ethic in order to minimise adverse environmental impacts and follow all requirements communicated during briefings and project training sessions. • Informing relevant persons of any environmental issues, so that these can be communicated to the project management team for further investigation. • Attending the project induction prior to commencing work where details of the environmental requirements will be provided.

4. GENERAL ENVIRONMENTAL REQUIREMENTS

4.1. LEGAL COMPLIANCE

4.1.1.1. Considerable environmental legislation applies to the works to be undertaken. All relevant legislation, including requirements for licences, permits and / or consents shall be identified and the appointed Contractors will be required to provide details on how compliance is to be achieved, as part of the construction process.

4.1.1.2. A register of consents has been prepared within Other Consents and Licences (document reference 5.2) which will be reviewed and the need for any further consents or licenses tracked by the Applicant and relevant Contractors to keep track of any progress. This will enable the project team to plan for consents to be applied for and obtained prior to the relevant works activity commencing.

4.1.1.3. The progress of the preparation, submission and internal approval of the consents identified as being required will be tracked using the register of consents.

4.1.1.4. The relevant applicable environmental legislation and regulations will be identified. The list of relevant legislation and its applicability to the works will be reviewed and updated whenever necessary by the Applicant and relevant Contractors.

4.1.2. NATIONAL LEGISLATION AND GUIDANCE

4.1.2.1. A number of national legislative measures and guidance are specifically applicable to the Marine works. These are listed below.

- Marine and Coastal Access Act ('MCAA') 2009;
- The Conservation of Habitats and Species Regulations 2017 (known as the Habitats Regulations) which transpose the EC Directive 92/43/EEC (the Habitats Directive) into national law. This legislation covers waters within the 12 nautical mile ('nmi') limit (known as territorial waters);
- The Conservation of Offshore Marine Habitats and Species Regulations 2017 (known as the Offshore Regulations) which transpose the Habitats Directive into UK law for all offshore activities. This legislation covers UK waters beyond the 12 nmi limit;
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Statutory Instrument 2017 No. 407);
- Wildlife and Countryside Act 1981 (as amended);

- UK Biodiversity Action Plan 2007; and
- Natural Environment and Rural Communities Act 2006.

4.1.3. OTHER RELEVANT INTERNATIONAL LEGISLATION AND GUIDANCE

4.1.3.1. International legislation and guidance relevant to the marine works are listed below and further details of the Relevant Article / Annex are given in Appendix 1.

- Safety of Life at Sea ('SOLAS') 1974;
- Standards of Training, Certification and Watch keeping for Seafarers ('STCW') 1978;
- STCW Code, section A-VIII/1;
- International Convention for the Prevention of Pollution from Ships ('MARPOL');
- International Convention on the Control of Harmful Anti-Fouling Systems in Ships (AFS Convention);
- NOx Technical Code;
- IMO Biofouling Guidelines (resolution MEPC.207(62));
- International Convention for the Control and Management of Ships' Ballast Water and Sediments ('BWM'); and
- Waste Framework Directive (Directive 2008/98/EC).

4.2. RELATED PLANS AND PROCEDURES

4.2.1.1. Other related plans and procedures of relevance to this Marine Outline CEMP are outlined in Table 5.

Table 5 – Other Plans

Plan	Document Reference
Onshore Outline CEMP	6.9
Outline Written Scheme of Investigation (WSI)	6.3.14.3
Disposal Site Characterisation Report	6.3.6.5
Marine Pollution Contingency Plan	Post consent requirement
Cable Burial and Installation Plan	Post consent requirement

4.3. COMPETENCE, TRAINING AND AWARENESS

4.3.1.1. The Applicant will have a system in place to ensure that Contractors are competent to perform their scope of work.

4.3.1.2. Contractors shall identify the training needs of their employees and subcontractors so that they can implement the requirements of this Outline Marine CEMP (and the

Final Marine CEMP once agreed) into briefings and construction method statements.

4.3.1.3. Specific training needs will be developed for individuals to reflect the work to be carried out on the Proposed Development and the significant risks and opportunities identified.

4.3.1.4. All personnel will be aware of their general environmental management responsibilities, and for those whose work may cause, or have the potential to cause, a significant impact on the environment, to receive specific environmental awareness briefings. Environmental awareness will be reinforced through information, such as poster campaigns, environmental/sustainability performance indicator reports and environmental alerts.

4.3.1.5. All contractors are responsible for ensuring the competency of their environmental staff. In the event that environmental training is needed for staff, a contractor is responsible for ensuring this requirement is fulfilled. Any training provided to members of the project team will be logged by the project administrator and any certification documents will be produced by the relevant members of staff as evidence that they hold the required competencies.

4.3.2. TOOLBOX TALKS AND TRAINING

4.3.2.1. To provide on-going reinforcement and awareness training, the below topics, along with any other environmental issues which arise, will be discussed at regular toolbox talks. Where applicable to the works the following topics will be included in the induction:

- Waste management;
- Pollution prevention and control;
- Biosecurity;
- Environmental measures;
- Archaeology; and
- Emergency response procedures.

4.3.2.2. Additional toolbox talks shall be added as required based on circumstances such as unforeseen risks, repeated observation of bad practices, perceived lack of awareness, pollution event, etc.

4.3.2.3. Records of all toolbox talks and their attendees shall be maintained and recorded.

4.4. COMMUNICATIONS

4.4.1. INTERNAL COMMUNICATION

4.4.1.1. Communication on environmental issues within the project team will take place through face-to-face conversations, e-mails and telephone calls. The project

management team will be made aware of all environmental issues at the earliest possible opportunity. Communication on environmental matters will be maintained through construction meetings chaired by the Environmental Advisor/ Manager or a senior manager.

4.4.1.2. Environmental issues identified by any member of the project team will be communicated to the relevant personnel to ensure any required actions are carried out. Dissemination of information will take place in several forms, as appropriate, including meetings to discuss particular project issues, method statements, task/activity briefings, toolbox talks, inductions, environmental notices and environmental alerts. Records that these have been carried out and who received them will be recorded. The Environmental Advisor/Manager will notify Supervisors of any legislation changes which may affect working practices.

4.4.1.3. Any unexpected finds/occurrences by project staff can be reported to their supervisors, which will then give notification to the relevant member of the Environmental Team (described in Section 3) who will advise on the course of action to be taken.

4.4.2. EXTERNAL COMMUNICATION

Communication with the Applicant

4.4.2.1. Contractors will liaise regularly with the Applicant and its representatives regarding the programme of works, nature of the operations and methods to be employed to minimise adverse environmental impacts. This will include progress meetings as well as the production and submission of progress reports which will cover environmental/sustainability issues. Contractors will also supply all relevant supporting information and documentation to the Applicant for matters concerning consents and the environment in accordance with the appropriate timescales.

Statutory Authorities and Other Stakeholders

4.4.2.2. In the event of stakeholder liaison being required with local authorities or other stakeholders, the Contractors will identify the requirement and seek authorisation from the Applicant to undertake the task. Where consultation is required, a representative from the Applicant will be invited to attend alongside the relevant Contractor personnel.

4.4.2.3. Project staff will keep an archive of any e-mail correspondence between themselves and statutory authorities and other stakeholders concerning the activities taking place. In the event that any complaints are received a log of correspondence and complaints will be kept up to date by the relevant Contractor.

Public Relations

4.4.2.4. It is good practice to inform interested parties when works are due to commence. Contractors will not communicate with residents unless approval has been granted by the Applicant. A Public Relations Officer role will be appointed (see Section 3).

4.4.2.5. Stakeholder meetings will be held as required.

4.4.2.6. Any letters issued to interested parties will be drafted and issued by the Applicant, with inputs from the Public Relations Officer.

Complaints Procedure

4.4.2.7. The Public Relations officer will be responsible for dealing with any complaints and will have the appropriate authority to resolve any issues that may occur. Should it be required, an 'out of hours' telephone number will be available.

4.4.2.8. The Environmental Manager / Advisor will maintain a close liaison with the relevant Local Planning Authority ('LPA') Environmental Health Officer ('EHO') and offshore regulatory body at all times and should any complaints regarding environmental nuisance (e.g. dust or noise) be received by the Public Relations Officer the details will be passed to the relevant persons for verification purposes.

4.5. METHOD STATEMENTS

4.5.1.1. The implementation of Method Statements for the different activities of the Proposed Development works shall be completed by the relevant contractor(s) by trained staff or other appropriate experienced personnel, in consultation with specialists. Their production shall include a review of the environmental/ health and safety risks and commitments, so that appropriate control measures are developed and included within the construction process.

4.5.1.2. Method Statements will be reviewed by the Contractor's Project Manager and, where necessary, by an appropriate environmental specialist. Where appropriate, and if required or necessary, method statements will be submitted to the relevant regulatory authorities.

4.5.1.3. Method statements must contain as a minimum:

- Location and duration of the activity;
- Work to be undertaken and methods of construction;
- Plant and materials to be used;
- Labour and supervision requirements;
- Health, safety and environmental considerations (including relevant control measures); and
- Permit or consent requirements.

4.5.1.4. Deviation from approved method statements (where this is a statutory requirement) will be permitted only with prior approval from relevant parties. This will be facilitated by formal review before any deviation is undertaken.

4.1. ENVIRONMENTAL INCIDENTS

4.1.1.1. The formal procedure for handling Environmental Incidents will be developed and agreed by the Contractor / Construction Manager and communicated through the Final CEMP, however it is envisaged that it will be similar to that detailed below:

- Environmental Incidents are to be reported to the Construction Manager;
- The Construction Manager (or nominated representative) will record full details of the Environmental Incident and ensure that they are responded to as soon as reasonably practicable (preferably within one hour but always within 24 hours; and
- The Construction Manager (or nominated representative) will undertake an investigation to assess what corrective and preventative action, or further investigation is necessary to avoid recurrence of the Environmental Incident.

4.1.2. ENVIRONMENTAL INCIDENT RESPONSE PROCEDURE

4.1.2.1. A Marine Pollution Contingency Plan will be developed for the Proposed Development. The production of this document is a requirement of the deemed marine licence and will be submitted to the licencing authority for approval prior to construction.

4.1.2.2. At this stage, it is envisaged that the plan will incorporate the following processes. The final response procedure will be presented in the Marine Pollution Contingency Plan which will be produced post consent.

4.1.2.3. Each vessel utilised on the project will have an effective spill response process in place, i.e. a Ship Oil Pollution Emergency Plan ('SOPEP'), or equivalent.

4.1.2.4. SOPEP is a MARPOL 73/78 requirement under Annex I. All ships with 400 GT and above must carry an oil prevention plan as per the norms and guidelines laid down by IMO under Marine Environmental Protection Committee ('MEPC') act.

4.1.2.5. The Master of the ship has overall charge of the SOPEP of the ship, along with the chief officer as subordinate in charge for implementation of SOPEP on board. SOPEP also describes the plan for the master, officer and the crew of the ship to tackle various oil spill scenario that can occur on a ship.

4.1.2.6. All vessels will carry spill kits and on all vessels, suitable individuals will be available to provide 24 hr spill response (where 24 hr working is planned). Individuals will have been trained in the use of spill kits and procedures so that any response is carried out immediately and efficiently.

4.1.2.7. In addition, Contractors will work with local authorities to provide support in event of any incident occurring where pollution of the marine environment occurs.

4.1.3. DROPPED OBJECTS

4.1.3.1. Dropped objects will be reported in line with the requirements set out in the deemed marine licence.

4.1.4. EMERGENCY CONTACT DETAILS

4.1.4.1. This section in the Final CEMP will outline the emergency contact details for the project once finalised prior to the commencement of installation activities.

4.2. MONITORING AND REVIEW

4.2.1.1. The Environment Manager will hold the responsibility for maintaining a register of all environmental monitoring, which will be made available for auditing and inspection.

4.2.1.2. Reporting procedures will be defined by the Environment Manager who will hold overall responsibility for providing feedback to the Contractors and the Applicant on the environmental performance of the construction works.

4.2.2. AUDITS AND INSPECTIONS

4.2.2.1. Regular monitoring shall occur to ensure compliance with the CEMP, check compliance with the legal and contractual requirements and to minimise the risk of damage to the environment. All environmental incidents shall be reported to the Environmental Manager.

4.2.2.2. The Environmental Manager shall assess the works' environmental performance measured against environmental standards, relevant legislation and the CEMP objectives.

4.2.2.3. Document control shall be in accordance with a Quality Management System and copies of all environmental audit reports, consents and licences shall be maintained by the Contractor's Environmental Manager.

4.2.2.4. Contractors shall be responsible for investigating and addressing any non-conformances raised by the inspection within an agreed time frame and ensuring that corrective and preventative actions have been fully closed out.

4.2.2.5. Contractors and the Applicant representative shall be responsible for updating and reviewing the CEMP on a regular basis to ensure continual improvements.

5. ENVIRONMENTAL CONTROL MEASURES

5.1. OVERVIEW

5.1.1.1. This section sets out the environmental control measures to be adopted during construction. The Developer will ensure that all sub-contractors adhere to the environmental good practice guidelines for implementation during work activities.

5.2. POLLUTION PREVENTION

5.2.1.1. Oil and fuel shall be stored securely in bunded containers. Chemicals will be stored securely and good housekeeping practices must be adhered to always.

5.2.1.2. The process of refuelling or bunkering shall be managed to ensure that the risk of pollution is minimised with details as to how this will be implemented provided in the method statement for each work phase.

5.2.1.3. A Marine Pollution Contingency Plan (a requirement of the deemed marine licence), will be developed post-consent. This plan will set out the measures to be in place to minimise the risks of pollution incidents as well as the procedures to be followed if a pollution incident does occur. This will include the key roles and their responsibilities and relevant contact details.

5.2.1.4. Details of outline emergency response procedures for environmental incidents are provided in Section 5.

5.3. AIR QUALITY

5.3.1.1. Air pollution from vessels, and in particular the emission of sulphur and nitrogen compounds (SOx and NOx) and ozone-depleting substances (ODS) is strictly controlled by regulations that implement the International Convention for the Prevention of Pollution from Ships (MARPOL) and its various annexes and protocols. MARPOL Annex VI, which is specifically about air pollution, has 19 separate regulations, as well as a Code for controlling nitrogen oxide emissions.

5.3.1.2. Contractors shall ensure vessels will comply with this Convention as part of their own operating procedures. This shall be done through pre-mobilisation vessel audits.

5.4. PRIMARY MATERIALS

5.4.1.1. The impacts of using raw materials for the Proposed Development will be evaluated and minimised where possible.

5.4.1.2. In addition, the appointed contractor will undertake a business-case-based study (taking into account both economic and environmental factors) to identify the most appropriate source of rock material for any non-burial protection requirements.

5.5. WASTE MANAGEMENT

5.5.1.1. All waste will be managed by the relevant contractor and requirements in accordance with the Waste Hierarchy (in order of preference) implemented:

- Prevention;
- Minimisation;
- Reuse;
- Recycle;
- Energy recovery; and
- Disposal.

5.5.1.2. During the works any wastes generated will be dealt with in a lawful manner. At sea, no waste will be disposed of over the side of any vessel and all produced waste will be segregated and stored on board. All waste products and rubbish will be removed from the vessel and disposed of by a registered waste disposal company. Details of waste handling and anticipated types and volumes will be provided in individual method statements.

5.5.1.3. Best practice measures will be followed and any waste materials arising during the course of the works will be removed for disposal at approved locations above the tidal level of MHWS.

5.5.1.4. The approach to the disposal of dredged material is outlined in the Appendix 6.5 (Disposal Site Characterisation Report) of the ES Volume 3 (document reference 6.3.6.5) and will be refined through a dredge and disposal Method Statement post consent. Where practicable, dredged material will be used as backfill as part of the construction process. It is proposed that any unused material will be disposed of in the Marine Cable Corridor, beyond KP21, subject to the designation of this area as a licensed marine disposal area.

5.6. VESSEL MANAGEMENT

5.6.1.1. All vessels utilised for the Proposed Development shall be fully compliant with the International Safety Management ('ISM') Code and flag state requirements. Where the ISM code does not apply to a vessel utilised due to vessel size the vessel operator shall ensure that the vessel has a suitably integrated safety management system in use onboard the vessel.

5.6.1.2. A Cable Burial and Installation Plan shall be developed pre-construction. The production of this document is a requirement of the deemed marine licence and will be submitted to the licencing authority for approval prior to construction.

5.6.1.3. This document will include details of vessel procedures and will require approval in writing from the MMO prior to construction start.

5.6.2. VESSEL LIGHTING AND MARKING

5.6.2.1. Any barges and vessels engaged in operations on the Development should be lit and marked as per the International Regulations for the Prevention of Collisions at Sea 1972 (COLREGS).

5.6.2.2. Contractors will ensure that Cable Laying Vessels ('CLV') will display appropriate marks and lights, and broadcast their status on AIS at all times, to indicate the

5.6.2.3. Temporary aids to navigation will be deployed (if required) to guide vessels around any areas of installation or decommissioning activity. Any required aids to navigation will be discussed and agreed with Trinity House.

5.6.3. OTHER MARINE USERS

5.6.3.1. It is recognised that the Proposed Development represents a major infrastructure construction project in the waters of the English Channel that are also used by a variety of other marine users including other commercial shipping, the commercial fishing industry and recreational sailors.

5.6.3.2. Contractors will ensure circulation of information via Notice to Mariners, Radio Navigational Warnings, NAVTEX, and/or broadcast warnings in advance of and during the marine works. Information will also be circulated to local ports, harbours and marinas in the area. The notices will include a description of the work being carried out and potential durations.

5.6.3.3. Contractors will ensure targeted circulation of information about the Proposed Development to ports and regular commercial operators (e.g. ferries) prior to marine works commencing.

5.6.3.4. Information will be circulated to Dover CNIS with respect to vessels operating in and around the Dover Strait TSS.

5.6.3.5. Information will be circulated to relevant local sailing clubs along the south coast of the UK to increase the likelihood that sailors are made aware of the temporary installation work.

5.6.3.6. Liaison will be undertaken with local ports and harbours, in particular close liaison will be required with the Langstone Harbour Authority to ensure procedures are put in place to manage access to the port when works are being undertaken in areas adjacent to the harbour entrance

5.6.3.7. On completion of the work Contractors shall inform the Applicant in order that all necessary stakeholders can be provided information on the completed works.

5.6.3.8. The Proposed Development will be clearly marked on nautical charts in line with UKHO standards, with associated note/warning. Details of the marine cable locations and associated cable protection will be included in fishermen's awareness charts issued by Kingfisher.

5.6.3.9. The Contractors will ensure guard vessel(s) will be employed where appropriate, to work alongside the installation vessel(s) during any work carried out. The guard vessel(s) will alert third party vessels to the presence of the installation or decommissioning activity and provide assistance in the event of an emergency.

5.6.3.10. Guard vessels will also be used where cable exposures exist that pose a significant risk to other marine users, and the duration that any cables are exposed for will be minimised as far as possible.

5.6.3.11. The marine cables will be buried where feasible, or otherwise suitable protected to help protect against snagging from fishing gear and risk from vessel anchors. Cable burial and non-burial protection will be informed by a Cable Burial Risk Assessment (the current target burial depth is between 1 m and 3 m).

5.6.3.12. Any non-burial protection methods used will not reduce navigable water depths by more than 5%.

5.6.3.13. Compass deviation effects will be minimised through cable design and separation distances. A deviation of three degrees will be accepted for 95% of the whole cable route (between the UK and France) and a five degree deviation accepted for the remaining 5% of the whole cable route.

5.6.3.14. If compass deviation is predicted to exceed 5 degrees, further consultation with the MCA will be undertaken prior to construction. A post lay survey will confirm any compass deviation effects.

5.6.3.15. A rolling 500 m recommended safe passing distance around dynamically positioning ('DP') vessels and up to 700 m around barges that require anchor spreads will be requested during the construction phase and monitored by the guard vessel(s).

5.6.3.16. A Fisheries Liaison Officer ('FLO') will be in place to communicate with the fishing fleet in the works area, as required in the deemed marine licence. The establishment of an Inshore Fisheries Working Group ('IFWG') will also ensure that fisheries stakeholders will be aware of the timing and location of installation works. The IFWG will be maintained during planned maintenance or repair work.

5.6.3.17. Scheduling of any marine cabling works will aim to avoid significant races (e.g. Cowes Week, Round the Island Race) if possible.

5.7. MARINE ECOLOGY

5.7.1.1. This section provides an overview of the measures to be adopted to mitigate potential impacts to marine ecology associated with the Proposed Development.

5.7.2. GENERIC MEASURES

5.7.2.1. The Proposed Development will be designed to remove the requirement for regular routine maintenance during its operational lifetime. This will reduce the occurrences of potential impacts to receptors during the lifetime of the project.

5.7.2.2. The Proposed Development will incorporate distributed temperature sensing which will reduce cable inspection requirements and will allow any maintenance work to be properly localised.

5.7.2.3. The Proposed Development will avoid cabling through areas of hard substrate as far as possible to ensure that the cable can be buried. This will reduce the amount of non-burial protection required and minimise loss of habitat along the route.

5.7.2.4. The use of non-burial protection measures will be minimised. Where protection is required (i.e. at cable crossings), its profile will be minimised to reduce effects on seabed currents.

5.7.2.5. The final route will be planned to minimise the requirement of pre-sweeping of bedform features (large ripples and sandwaves). Any pre-swept trench will be kept to a minimum possible length, width and depth, such that cable burial can proceed effectively and result in a stable burial depth. Installation of the cable to a stable burial depth will minimise the requirement for any additional cable protection and future disturbance.

5.7.2.6. Impacts to the seabed will be minimised through bundling of cables. This will also ensure only two trenches are required (except for a short stretch near to the HDD entry/exit) minimising impacts to the seafloor.

5.7.2.7. During seabed preparation activities, there will be no disposal of dredged material in inshore waters in order to reduce sediment loading in this area of increased sensitivity and will minimise impacts of increased suspended sediment concentrations on receptors in this area.

5.7.2.8. During construction, all necessary equipment will remain in the project area for the minimum practical period of time in order to ensure any influence on the physical environment is of short duration and localised to the operation to be carried out.

5.7.2.9. Only Cefas approved drilling fluids (bentonite based) would be used during the HDD work to lubricate the drilling process and cool the drill head. Fluid pressures would be monitored throughout activities to reduce the risk for breakout of the drilling fluid, and a frac-out plan will be in place to show how incidents which could affect the marine environment will be managed.

5.7.3. INTERTIDAL AND BENTHIC ECOLOGY

5.7.3.1. Following a pre-construction survey, areas of Annex I reef habitat will be identified and the final cable route will micro site around any such areas where possible.

5.7.4. FISH AND SHELLFISH

5.7.4.1. The minimum target cable burial depth will be 1 m. This will reduce potential effects of Electromagnetic Fields on sensitive species.

5.7.5. MARINE MAMMALS AND BASKING SHARKS

5.7.5.1. As cetaceans are European Protected Species ('EPS'), an EPS Risk Assessment will be conducted prior to work starting in order to determine whether an EPS licence will be required. Current guidance (JNCC *et al*., 2010) will be used to inform the EPS risk assessment and best practice (JNCC, 2017) will be used in situations where the potential to induce the onset of auditory injury exists in order to reduce any risk to a satisfactory level.

5.8. UNDERWATER NOISE

5.8.1.1. In addition to undertaking an EPS Risk Assessment, the Applicant will complete and submit a voluntary notification of the geophysical work to the MMO. The Marine Noise Registry ('MNR') will also be completed.

5.9. BIOSECURITY

5.9.1.1. Management of biosecurity focuses on three areas:

- Ballast Water Management;
- Antifouling; and
- Equipment

5.9.1.2. A Biosecurity Plan, a requirement of the deemed marine licence, will be developed post-consent. It is envisaged that the plan will incorporate the below key principles.

5.9.1.3. Contractors shall ensure that their vessels comply with the requirements set out in the following sections and provide all the suitable documentary evidence to the required parties.

5.9.2. BALLAST WATER

5.9.2.1. Vessels contracted to work on the Development are required to follow current UK Guidance on ballast water management. These include:

- Maritime and Coastguard Agency MGN 363 (M+F): The Control and Management of Ships' Ballast Water and Sediments; and
- Maritime and Coastguard Agency MGN 81 (M+F): Guidelines for the Control and Management of Ships' Ballast Water to Minimise the Transfer of Harmful Aquatic Organisms and Pathogens.

5.9.2.2. Vessels will also be required to comply with the IMO 1997 guidelines "Guidelines for the Control and Management of Ships' Ballast Water to Minimise the Transfer of Harmful Aquatic Organisms and Pathogens". In particular, when loading,

discharging or exchanging ballast, the vessel will be required to comply with section 9 of the "*Guidelines for the control and management of ships' ballast water to minimise the transfer of harmful aquatic organisms and pathogens*" (IMO, 1997).

5.9.2.3. In addition, the Vessel Masters/Operators will be required to make the Ballast Water Record Book available to the required parties.

5.9.3. HULL ANTI-FOULING MANAGEMENT

5.9.3.1. Vessels contracted to work on the Development for any purpose will be required to follow current UK Guidance on the use of hull anti-fouling systems (AFS). These include:

- The Merchant Shipping (Anti-Fouling Systems) Regulations 2009;
- Maritime and Coastguard Agency MGN 398 (M+F): Merchant Shipping (Anti-Fouling Systems) Regulations 2009; and
- The International Convention on the Control of Harmful Anti-Fouling Systems on Ships 2001.

5.9.3.2. All certificates, declarations and other relevant documentation should be valid for the contract period.

5.9.4. EQUIPMENT MANAGEMENT PRACTICES

5.9.4.1. All vessels working on the Proposed Development shall ensure:

- all equipment for use in the sea on the project is washed and cleaned prior to arriving in the project area but after previous contract has been completed;
- where it is not possible to undertake such measures, justification should be provided for agreement prior to operations in the project area;
- In all cases, time in air between different water bodies must be allowed to ensure equipment is dry before use in the project area. Details of the required time periods to ensure equipment is dried must be provided; and
- The process for cleaning and disposing of waste water should be specified in RAMS documentation.

5.9.4.2. Contractors shall provide information in support of the above; this information would usually be collected during the vessel audit process.

5.10. ARCHAEOLOGY AND CULTURAL HERITAGE

5.10.1.1. The archaeological and cultural heritage mitigation outlined here comprises high-level general measures to minimise or reduce adverse effects arising from disturbance from the works on the surrounding historical assets. Where impacts have been identified and subject to the nature of the asset and the potential impact, consideration has been given to a range of mitigation measures, these include but are not limited to:

- Avoidance: through the implementation of Archaeological Exclusion Zones (‘AEZ’s).

- Reduction: this includes opportunities for further investigation such as UXO surveys which will take place prior to construction; and
- Offsetting/recovery: offsetting damage to archaeological features where avoiding impacts is impossible.

5.10.1.2. A project-specific Outline Written Scheme of Investigation ('WSI') has been submitted separately as Appendix 14.3 (Marine Archaeology Outline Written Scheme of Investigation) of the ES in Volume 3 (document reference 6.3.14.3). The WSI sets out the mitigation procedures that seek to avoid, reduce or off-set impact upon known and potential archaeology and cultural heritage assets as a result of the Proposed Development in order to safeguard the archaeological and historic environment resource. The document sets out the protocols and procedures that must be followed in the event of encountering unexpected archaeological discoveries throughout the duration of the Proposed Development.

APPENDIX 1 – RELEVANT LEGISLATION

Convention / Legislation	Relevant Article / Annex
Safety Of Life At Sea (SOLAS) 1974	Seawater ballast tanks in all types of ships and double-side skin spaces of bulk carriers (resolution MSC.215(82)), II-1/3-7; MSC/Circ.1135 on Asbuilt construction drawings to be maintained on board the ship and ashore; II-1/5 and II-1/5-1; LL Convention; 1988 LL Protocol, regulation 10; II-1/19; MSC.1/Circ.1245; V/14.2 FAL.2/Circ.123 MEPC.1/Circ.769 MSC.1/Circ.1409 Annex, page 3; II-2/15.2.4 and II-2/15.3.2; II-2/15.2.2.5; II-2/16.2 regulations II-2/14.2.2 and II-2/14.4; III/35; V/19.2.1.4 and V/27; V/21; V/26 and V/28.1; II-1/28; V/18.8, VI/5.6 and VII/5; MSC.1/Circ.1353, IX/4; ISM Code, paragraph 13, XI-2/9.1.1; ISPS Code part A, section 19 and appendices, XI-2/9; ISPS Code part A, sections 9 and 10, XI-1/5, I/12; 1988 SOLAS Protocol, regulation I/12, V/19-1; MSC.1/Circ.1307, I/12; 1988 SOLAS Protocol, regulation I/12, I/12, as amended by the GMDSS amendments; 1988 SOLAS Protocol, regulation I/12,
Standards of Training, Certification and Watch keeping for Seafarers (STCW) 1978	Article VI, regulation I/2; STCW Code, section A-I/2.
STCW Code, section A-VIII/1	Seafarers' Hours of Work and the Manning of Ships Convention, 1996 (No.180); IMO/ILO Guidelines for the development of tables of seafarers' shipboard working arrangements and formats of records of seafarers' hours of work or hours of rest
International Convention for the Prevention of Pollution from Ships (MARPOL)	Annex I, Regulations 7,17, 36, and regulation 37; resolution MEPC.54(32) as amended by resolution MEPC.86(44) Annex IV, regulation 5; MEPC/Circ.408 Annex V, regulation 9 Annex VI, Regulations 6, 12.6, 14.6, 16.7
International Convention on	Regulation 2(1) of annex 4 regulation 5(1) of annex 4

the Control of Harmful Anti-fouling Systems in Ships (AFS Convention)	
NOx Technical Code	Paragraphs 2.3.4 and 2.3.7
International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM)	**Article 7** - Survey and Certification: ships are required to be surveyed and certified **Annex Section B** - Management and Control Requirements for Ships: ships are required to have on board and implement a Ballast Water Management Plan (BWMP) approved by the Administration. This BWMP is specific to each ship and each ship must have a readily available and accurate Ballast Water Record Book. **Annex Section D** - Standards for Ballast Water Management: BWE standard ('D-1') and a ballast water performance standard ('D-2'); and **Annex Section E** - Survey and Certification Requirements for Ballast Water Management: this requires ships to have an initial, renewal, annual and intermediate survey and certification of their ballast water management plans.
IMO Biofouling Guidelines (resolution MEPC.207(62))	IMO Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species
Directive 2008/98/EC on waste (Waste Framework Directive)	European Union (EU) directive setting out definitions and concepts relating to waste management, such as definitions of waste, recycling and recovery.