Appendix 5-1:
Construction Environmental Management Plan

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

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ORIEL WIND FARM PROJECT

Environmental Impact Assessment Report
Appendix 5-1: Construction Environmental Management Plan

MDR1520B
EIAR – Appendix 5-1
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Acronyms

Term	Meaning
AIS	Air Insulated Switchgear
BS	British Standard
CBM	Cement Bound Material
CEMP	Construction Environment Management Plan
CIRIA	Construction Industry Research and Information Association
CLO	Community Liaison Officer
CTMP	Construction Traffic Management Plan
DHLGH	Department of Housing, Local Government and Heritage
ECoW	Environmental Clerk of Works
EIAR	Environmental Impact Assessment Report
EIERP	Environmental Incident and Emergency Response Plan
EMP	Environmental Management Plan
EPA	Environmental Protection Agency
HSA	Health and Safety Authority
GGBS	Ground Granulated Blast Furnace Slag
GIS	Gas Insulated Switchgear
GNI	Gas Networks Ireland
GSI	Geological Survey Ireland
HDD	Horizontal Directional Drilling
HWM	High Water Mark
IAPS	Invasive Alien Plant Species
IEF	Important Ecological Feature
IEMA	Institute of Environmental Management and Assessment
IFI	Inland Fisheries Ireland
NIAH	National Inventory of Architectural Heritage
NIS	Natura Impact Statement
NMI	National Museum of Ireland
NMS	National Monuments Service
NPWS	National Parks and Wildlife Service
NRA	National Roads Authority
NSL	Noise Sensitive Location
OHL	Overhead Power Line
OSS	Offshore Substation
OWL	Oriel Windfarm Limited
pHNA	Proposed Natural Heritage Area
PPP	Pollution Prevention Plan
PPV	Peak Particle Velocity
RAMS	Risk Assessment Method Statements
RPS	Record of Protected Structures
SEAR	Safety and Environmental Awareness Report
TJB	Transition Joint Bay
TII	Transport Infrastructure Ireland
WMP	Waste Management Plan
WTG	Wind Turbine Generator

1. INTRODUCTION

1.1 Introduction

This document provides information relating to the environmental management during the construction of the onshore infrastructure of the Oriel Wind Farm Project, hereafter referred to as the Project. This document has been prepared to inform the Planning Authority, statutory consultees, and other project stakeholders of the proposed management methods to be employed during the construction of the onshore infrastructure of the Project.

The principal objective of this document is to detail appropriate measures in the avoidance, minimisation and control of adverse environmental impacts associated with construction of the onshore infrastructure of the Project. Furthermore, this document defines good practice as well as detailing specific commitments relating to environmental protection as identified in the Environmental Impact Assessment Report (EIAR) and the Natura Impact Statement (NIS) and a future version of this document will detail any planning conditions associated with a future planning consent, when they are known.

The Construction Environmental Management Plan (CEMP) will form part of the Oriel Wind Farm Project Works Contract (hereafter, the Contract). The CEMP covers all construction activities above the High Water Mark (HWM). The methods and principles contained herein, as well as within referenced legislative instruments and published guidance documents, will be adhered to by the Contractor in developing construction method statements and other plans relating to environmental management as required by the Contract.

This version of the CEMP (Version 1.0) presents minimum environmental management requirements to be adhered to by the Contractor. This CEMP will be updated following receipt of planning consent to incorporate relevant planning conditions and further details on environmental management measures to be applied during the construction phase. The CEMP will be a key construction contract document, which will allow the Contractor to ensure that all mitigation measures, which are considered necessary to protect the environment, are implemented. The CEMP is considered a live document and will be updated by the Contractor following appointment, prior to and during the works.

The Contractor will submit all relevant information as detailed in this document to the Employer for acceptance in accordance with the contract provisions. No construction works will commence prior to the Employer's acceptance. This document is to be read and implemented onsite, in conjunction with industry good practice, published guidance documents, and other documents referred to within the CEMP.

The Checklist included in appendix 0, provides the Contractor with a summary of the minimum information to be provided to the Employer pre-, during and post-construction.

This document is to be read in conjunction with the following documents:

- Oriel Wind Farm Project - EIAR (Volume 2A, 2B and 2C);
- Oriel Wind Farm Project - Report to Inform Screening for Appropriate Assessment;
- Oriel Wind Farm Project - NIS; and
- Planning consent.

An outline Commitments Register (version 1.0) has been prepared and is included in appendix 0. This register requires to be updated (on consent) to ensure a full list of all commitments made in the EIAR, commitments made during the consent application process and any all related planning conditions are included. Responsibilities and relevant documentation for approval will also need to be assigned.

1.2 Scope

The remit of the CEMP is for the Project activities taking place landward of the HWM. The CEMP is applicable to all OWL personnel, contractors and subcontractors carrying out construction and operational and maintenance activities associated with the Project. The CEMP does not apply to the Oriel Wind Farm Project offshore infrastructure (i.e. seaward of the HWM). A separate Environmental Management Plan (EMP) has been developed for these elements of the Project (see appendix 5-2: Environmental Management Plan).

2. PROJECT DESCRIPTION

The Project is an offshore wind farm project situated off the coast of County Louth to the east of Dundalk Bay approximately 22 km east of Dundalk town centre, 18 km east of Blackrock, 5 km south of the Cooley Peninsula and 10 km northeast of Dunany Point. It comprises 25 Wind Turbine Generators (WTGs), one offshore substation (OSS), a single offshore cable which will extend from the offshore wind farm area to a landfall approximately 700 m to the south of Dunany Point, and a network of inter-array cabling. The closest wind turbine will be approximately 6 km from the closest shore on the Cooley Peninsula.

The single offshore cable is joined to three onshore cables within an underground Transition Joint Bay (TJB) close to the landfall. The onshore cables will be installed within a single trench in an onshore cable route that connects the TJB to the substation site at Stickillin, east of Ardee on the N33. The onshore cable route is principally along the public road except when the onshore cables are required to pass under obstructions such as the River Dee or M1 motorway as described in section 2.2. The length of the onshore cable route, is approximately 20.1 km.

This CEMP will detail the appropriate measures to construct the onshore infrastructure, which comprises of the three elements as outlined in sections 2.1 to 2.3. Section 2.4 provides information on the temporary construction activities and programme.

2.1 Landfall

The offshore cable will make landfall approximately 700 m south of Dunany Point, Co. Louth, where it will be connected to the onshore cables within an underground TJB. The location for the TJB is dependent on cable and soil properties and therefore two options for the location of the TJB above the HWM close to the eastern end of the lane along the southern boundary of Dunany Demesne are proposed.

2.2 The onshore cable route

The onshore cables will be installed within a single trench in an onshore cable route that connects the TJB to the substation site at Stickillin, east of Ardee on the N33.

The route is approximately 20.1 km in length in a trench of approximately 1 m width and is principally located along public roads. The onshore cable will connect into a new onshore substation located below the existing 220 kV overhead power line (OHL) from Louth to Woodlands.

The route commences at the laneway that runs along the southern boundary of Dunany Demesne and follows local roads heading south through the townlands of Mitchelstown and Port before heading westwards on local roads through Boycetown, Togher and Clonmore. At Keenan's Cross, it continues westwards through Tullydonnell before heading northwards through Corstown.

The onshore cable route then crosses under the River Dee at Drumcar Bridge and continues along local roads, heading in a westerly direction. At Mullincross, the onshore cable route crosses the R132, and then at Charleville the route passes under the M1 motorway and Dublin to Belfast Rail Line. It then follows the N33 and crosses under the River Dee for a second time before continuing westwards to tie-in to the existing overhead line in the townland of Stickillin.

The onshore cables will pass through drilled ducts under the River Dee (two crossings), the Port Stream, Salterstown Stream and the M1 motorway and Dublin to Belfast rail line. At these locations the onshore cable route diverts to agricultural fields adjacent to the road from where the ducts are drilled, and the onshore cable installation undertaken. This installation is described in detail within the EIAR in chapter 5: Project Description.

2.3 The onshore substation

The onshore substation site will be located in an agricultural field in the townland of Stickillin, Co. Louth. The field has an existing access from the N33 national road which services the field and existing agricultural buildings. It is located approximately 3 km east of the town of Ardee, County Louth. The existing 220 kV overhead line from Louth to Woodland passes from north to south over the field.

The site for the substation compounds is approximately 3 ha in area and is located to the east of the existing overhead line. The substation site will occupy approximately 1/3 of the existing agricultural field.

The onshore substation will consist of two compounds: Compound 1 will contain Gas Insulated Switchgear (GIS) located inside a building which is connected to the existing 220kV overhead line. Compound 2 will contain outdoor Air Insulated Switchgear (AIS) and will form part of the offshore grid.

Two new Line Cable Interface Masts will be constructed in order to connect the existing overhead power lines to the transmission cables from the GIS substation in Compound 1. These new pylon masts will replace an existing pylon mast adjacent to the substation compounds.

2.4 Construction phase

2.4.1 Temporary construction compounds

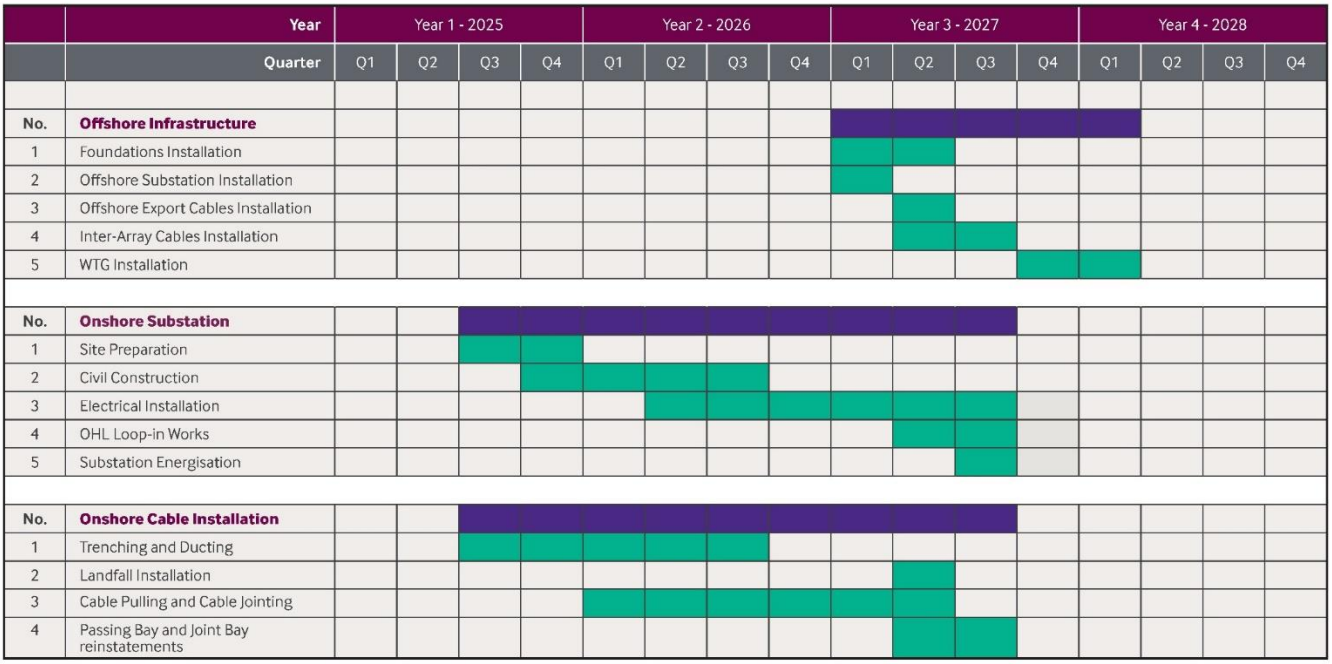
The Project will comprise seven construction compounds along the onshore cable route. Table 2-1 provides a summary of the activities that will be carried out at each of the compound locations. The construction compound at the site of the proposed onshore substation will incorporate the following provisions: site offices, stores, delivery and offloading areas, welfare facilities, parking areas and security accommodation. All Horizontal Directional Drilling (HDD) compounds will incorporate the following provisions: delivery and offloading area for the HDD equipment and goods, welfare facilities and parking for worker vehicles.

Table 2-1: Temporary construction compounds and proposed activities.

No.	Temporary construction compound location	Proposed activities	New temporary access required
1	Onshore substation site	Storage	No
2	River Dee at Richardstown	HDD Compound	West – Yes East – No
3	M1/Railway	Storage and HDD compound	West – Yes East – No
4	River Dee at Drumcar	HDD Compound	West – No East – Yes
5	Adjacent to JB17	Storage	Yes
6	Port Stream at Togher	HDD Compound	West – Yes East – Yes
7	Landfall	Storage	Yes

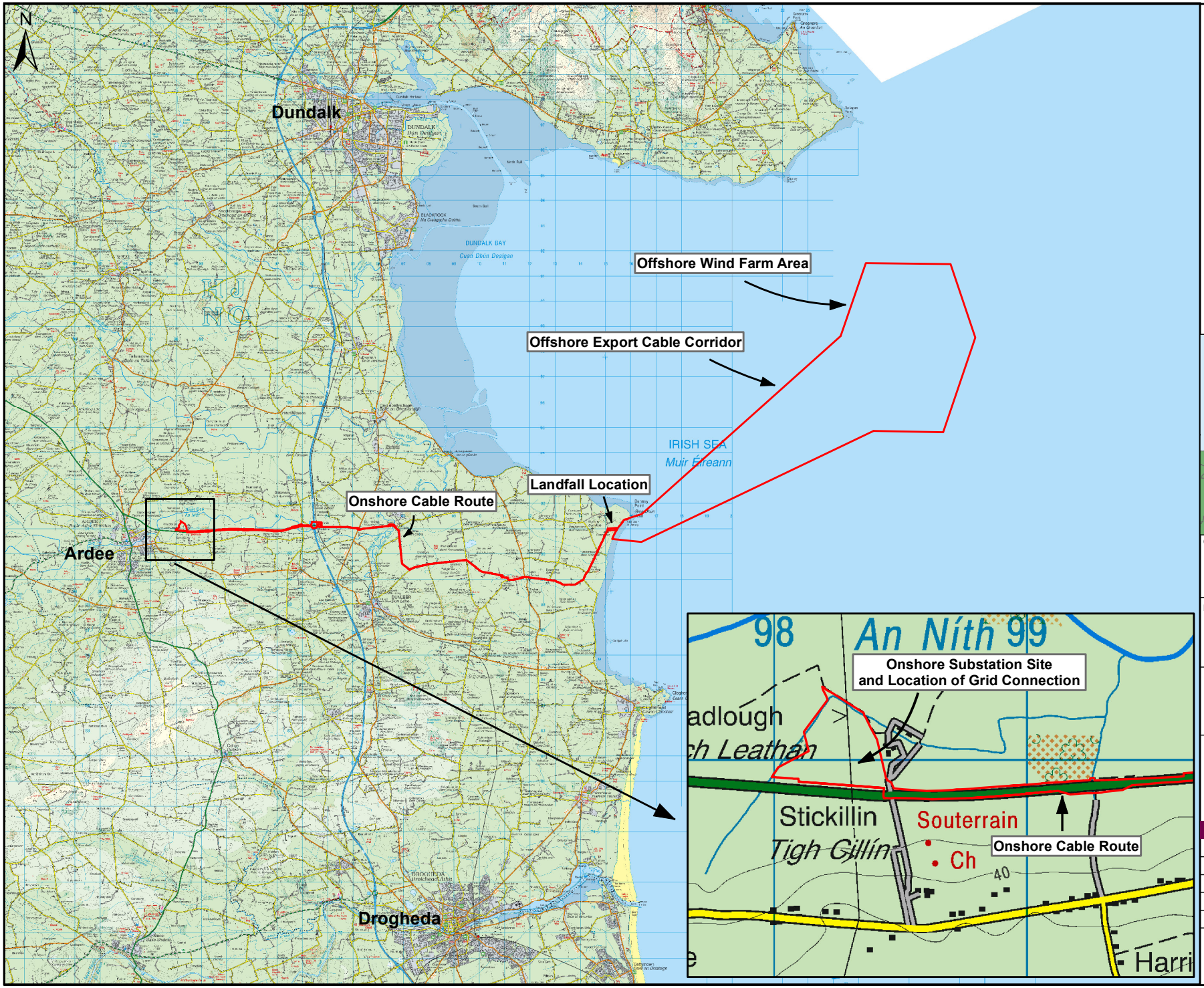
2.4.2 Construction programme

The construction programme is presented in Figure 2-1 and shows the indicative construction sequence and phases for both the onshore and offshore infrastructure for the Project. The timelines shown are indicative.



	Year	Year 1 - 2025				Year 2 - 2026				Year 3 - 2027				Year 4 - 2028			
	Quarter	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No.	**Offshore Infrastructure**																
1	Foundations Installation																
2	Offshore Substation Installation																
3	Offshore Export Cables Installation																
4	Inter-Array Cables Installation																
5	WTG Installation																
No.	**Onshore Substation**																
1	Site Preparation																
2	Civil Construction																
3	Electrical Installation																
4	OHL Loop-in Works																
5	Substation Energisation																
No.	**Onshore Cable Installation**																
1	Trenching and Ducting																
2	Landfall Installation																
3	Cable Pulling and Cable Jointing																
4	Passing Bay and Joint Bay reinstatements																

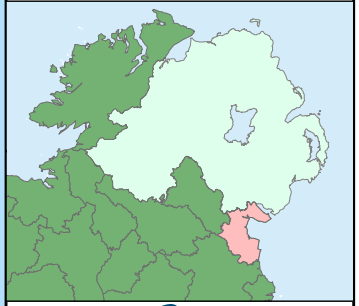
Figure 2-1: Indicative construction programme for the Project.



Legend

Planning Application Boundary

Data Sources: OWL, OSi.



Client

ORIEL WINDFARM
OFFSHORE RENEWABLE ENERGY

Project

Oriel Wind Farm Project

Figure 1-1: Overview of Oriel Wind Farm Project

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Issue Details	
Drawn By: MV	**Project No.** MDR1520b
Checked By: CC	**File Ref:** MDR1520bArc3072F01
Approved By: CC	
Scale: 1:200,000 @ A4	**Projection:** ITM (IRENET95) Geographic Co-ordinates: ETRS89
Date: 19/04/2023	

NOTE:
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2. All levels are referred to Ordnance Datum, Malin Head.
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3. RESPONSIBILITIES; CORRESPONDENCE AND GENERAL COMMUNICATION

3.1 Roles and responsibilities – All

A project Contacts Sheet (Table 3-1) provides a list of all Employer, Contractor, and relevant third-party contact details. The Contractor updates this sheet and keeps it current for the duration of the Contract. Table 3-2 provides a summary of the main construction phase tasks and responsibilities of contractor and employer personnel.

3.2 Roles and responsibilities - Employer

The Employer is responsible for ensuring that the Contractor manages the construction activities in accordance with this CEMP. The Employer's environmental policy is included in Annex A.2.

3.3 Roles and responsibilities – Contractor

The Contractor is responsible for implementing the CEMP including updating the document to reflect any changes in environmental management and/or practices. The Contractor will use the CEMP to inform all method statements and ensure that method statements include the controls and mitigation measures outlined in this document. The Contractor is responsible for ensuring all necessary consents, licences and permissions for all activities as required by current legislation governing the protection of the environment have been obtained. The Contractor will consult with the ECoW and Project Archaeologist as relevant regarding any derogation licence or archaeological monitoring licence applications.

The Contractor considers the mitigation measures and good practice construction methods detailed within this document in the Contractor's design and in any detailed environmental plans as required by the Contract.

Where the Contractor has standard documents within its own Environmental Management System or Environmental Management Plan (EMP), that cover a particular requirement of this CEMP, they will either be inserted or cross-referenced within the relevant section of the final CEMP.

The Contractor ensures that the Environmental Clerk of Works (ECoW) is informed in a timely manner of all site activities, including all programme changes, to ensure advanced checks and monitoring can be arranged. This includes any preliminary works.

To ensure compliance of the works with this document and pollution prevention requirements set out in section 5, the Employer and the ECoW regularly monitor the Contractor's works. Should the Employer or ECoW identify any failure to comply with the requirements of this document or the Contractor's own method statements the Employer or ECoW may stop the associated works (via instruction to the Contractor's Project Manager) until such time as the failure is rectified. Any associated cost or time delay incurred will be borne by the Contractor.

The requirement to temporarily suspend aspects of the works can be enforced by the Contractor, the ECoW or the Employer.

3.4 Contractor's Environmental Manager

The Contractor employs an Environmental Manager with appropriate experience and expertise for the duration of the construction phase to ensure that all the environmental design, control and mitigation measures outlined in the CEMP/EIAR and supporting planning documentation in relation to all aspects of the environment are implemented. The Environmental Manager together with an environmental team and in consultation with the ECoW, will be responsible for implementation of all mitigation measures and monitoring. This Environmental Manager will be awarded a level of authority and will be allowed to stop construction activity if there is potential for adverse environmental effects to occur.

3.5 Environmental Clerk of Works (ECoW)

The Employer appoints an appropriately qualified and competent environmentalist or ecologist as ECoW to manage and ensure Contractor compliance with this CEMP.

The ECoW will have a minimum of five years of relevant site experience. The ECoW will be appointed in a full-time capacity for the construction phase. The ECoW will supervise works onsite as required by the construction programme and construction activities with ecological constraints (e.g. HDD crossings). For ECoW powers in relation to halting works refer to section 3.3.

The ECoW will be responsible for training and engagement with site staff in relation to good environmental practices prior to and during the construction works. The ECoW will also carry out any relevant tasks relating to environmental monitoring and good practice prior to and during the construction works. Fundamentally, the ECoW will be responsible for:

- Monitoring and maintaining temporary drainage systems in accordance with the CEMP, including the direction of civils works team to implement, bolster and remediate (as necessary) water pollution prevention measures as detailed in section 5;
- Monitoring implementing habitat and species protection measures in accordance with the CEMP, including pre-construction surveys;
- Developing a positive environmental culture via training and engagement with site management and, importantly, site operatives to increase awareness and promote timely remediation / reporting; and
- Communicating statutory requirements and good environmental practices outlined in the CEMP, principally via a schedule of toolbox talks informed by site activities and recorded non-compliance.

3.6 Geotechnical engineer

The Contractor employs a geotechnical engineer to monitor the construction works as required, ensuring, for example, that excavations, and material stockpiles are managed in an appropriate manner as required by the contract (including this CEMP).

3.7 Community Liaison Officer

The Community Liaison Officer (CLO) will be appointed by the Contractor and will be responsible for managing tasks such as the following:

- Alerting neighbouring residents of the works or activities commencing in their area;
- Briefing neighbours on progress and issues likely to affect them, such as traffic management measures, as necessary;
- Liaison with Louth County Council and emergency services as appropriate; and
- Liaison with local Gardaí, particularly in relation to traffic movements and permits where necessary.

3.8 Community Engagement Manager

The Community Engagement Manager is employed by the Employer. The dedicated role is in place right through the Project phases to facilitate engagement with the community. The Community Engagement Manager will work closely with the CLO.

3.9 Archaeologist (onshore)

An archaeologist will be appointed by the Employer to undertake a programme of archaeological testing/surveys as required in advance of construction (see section 5.11) and provide advice throughout the construction phase as appropriate.

3.10 Ecologist

An ecologist will be appointed by the Employer to undertake pre-construction surveys in advance of construction (see section 5.5) and provide advice throughout the construction phase as appropriate.

3.11 Correspondence, records and reporting

The Contractor provides a complete record of all relevant communication and reports associated with all aspects of environmental management and implementation of this document. The following records will be maintained:

- Minutes and attendance records of start-up meetings (onsite meeting prior to commencement of construction works). Attendance required by Employer, Contractor, ECoW and all other relevant personnel responsible for environmental management during the Project;
- Weekly rolling Environmental Risk Log – including look ahead activities with required mitigation (including weather forecasts), discussed and recorded at scheduled weekly construction meetings. This will cover all environmental sensitivities, including ecology, archaeology, and water quality/drainage mitigation locations/measures;
- Employers and Contractor Audit Reports (according to respective corporate procedures);
- Waste Management Records;
- Water Quality Monitoring Records, documenting the Contractor's visual checks of waterbodies;
- Licences and Consents - copies of all permissions, consents, licenses, and permits, including related correspondence; and
- General Correspondence - all other relevant internal and external communication records relating to environmental management issues and implementation of the CEMP.

3.12 Site induction

The Contractor ensures that all Contractor employees, sub-contractors, suppliers, and other visitors to the site are made aware of the content of this document that is applicable to them. Accordingly, environmental specific induction training will be prepared and presented to all categories of personnel working and visiting the site. As a minimum, the following information will be provided to all inductees:

- Identification of specific environmental risks associated with the work to be undertaken onsite by the inductee;
- Summary of the main environmental aspects of concern at the site:
    a. Nearby sensitive receptors such as residences, schools, etc.;
    b. Species and/or habitat protection requirements;
    c. Archaeological features for protection;
    d. Pollution prevention and protection of the water environment (e.g., silt mitigation measures and refuelling);
    e. Measures to minimise impacts on air quality;
    f. Resource and waste management (e.g. requirements for storage and removal of hazardous material);
    g. Construction traffic management; and
    h. Plant service and repair procedures, specifically service location and the disposal of waste oils and service components.
- Environmental Incident and Emergency Response Plan (EIERP); and
- Contact details for the ECoW.

The Contractor will provide an Environmental Risk Map illustrating environmentally sensitive areas and potential sources of pollution (e.g. refuelling areas, location of spill kits, fuel tanks etc.). The Environmental Risk Map will be used during the induction and prominently displayed in the compound areas. In consultation with the ECoW, the Contractor updates the map as required. Any update will trigger a toolbox talk to clearly communicate the change and offer opportunity for any necessary clarifications.

3.13 Training and toolbox talks

During construction, to provide on-going reinforcement and awareness training, the above topics as outlined in section 3.12, along with any other environmental issues which arise onsite, will be discussed at regular toolbox talks.

Toolbox talks and training will be delivered by specialist personnel onsite (e.g., ECoW) as required.

The Contractor submits a schedule for toolbox talks at least one week prior to commencement of works. The proposed schedule – to be considered as a live document - will be consistent with the programme of works. Additional toolbox talks will be added as required based on circumstances such as unforeseen risks, repeated observation of bad practices, perceived lack of awareness, pollution event, etc.

Specifically, the Contractor provides, as a minimum, the following environmental training by competent staff/sub-contractors:

- Training on the use of spill kits (on ground and in surface waters), to be provided on a regular basis (to account for staff/sub-contractor changes etc); and
- Training on silt mitigation (e.g., installation of silt fencing etc.), silt mitigation measures to relevant construction / site staff.

Other toolbox talk topics will include but are not necessarily limited to the following:

- Material handling, including excavation, segregation, storage, and reuse/disposal of excavated materials;
- Groundwater and surface water, including managing surface water ingress into excavations, dewatering excavations, managing pumped water, and identifying and treating contaminated groundwater or surface water;
- Waste management, including waste storage, waste segregation and littering;
- Control of fuel and refuelling, and fuel handling procedures;
- Surface water run-off, drainage control and silt mitigation; and
- Ecologically and archaeologically sensitive areas.

The Contractor maintains records of all toolbox talks and training and makes these records available to the Employer if requested.

3.14 Environmental audits

The Contractor undertakes a programme of monthly environmental audits, including audits of all sub-contractors, on a quarterly basis and provides an audit report to the Employer within two weeks of the audit being undertaken.

Environmental audits may be completed at any time by the Employer, but at least one per quarter. The Contractor maintains a record of all completed audit forms, and records of corrective action and close outs.

The Contractor undertakes environmental inspections on a daily and weekly basis (refer to individual sections) and provides relevant records to the Employer when and as requested.

3.15 Risk assessment and method statements

The Contractor provides Risk Assessments and Method Statements (RAMS) for all works and tasks prior to these being undertaken. These documents will consider and address all the environmental aspects of the planned works and will include proposed mitigation measures and will be provided to the ECoW at least one week in advance of such works starting.

A list of all works and activities will be scheduled prior to the commencement of works and will be kept updated to include any additional tasks during the construction phase.

3.16 Notice boards

The Contractor provides and maintains project environmental notice board(s) which are positioned to ensure that all construction employees including sub-contractors can review the notice board daily. As a minimum this will include one notice board at the main site compound at the onshore substation site.

Environmental labelling and signage will be used onsite to inform project personnel of key environmental requirements or restrictions, including information to assist good environmental practice across the Project.

The environmental notice boards are maintained by the Contractor and will be reviewed, and updated as required, at least weekly. As a minimum, the notice boards contain:

- Description of the key environmental risks and intended risk mitigation measures, together with accompanying Environmental Risk Map illustrating the location of the key risks and required exclusion zones / buffer zones and location of emergency response equipment; and
- Key contact numbers and responsible personnel identified within the EIERP (see section 5.2).

3.17 Review and change management

The CEMP will be regularly reviewed during the construction phase. The Contractor's Environmental Manager will assume responsibility for the CEMP during construction. Any refinement to the CEMP, made by the Contractor, must be circulated to the OWL Environmental Manager for review and approval. The CEMP will be reviewed every three months or when any significant new information, methods, procedures or good practice becomes available. The CEMP will also be updated in response to any findings or lessons learned during the construction phase.

A change management procedure will be followed by the Contractor's Environmental Manager in the event of a new environmental sensitivity being identified (e.g. which may be highlighted by ongoing monitoring surveys or in the event of a new environmentally designated area being proposed) during construction. Such a procedure is recommended in the IEMA Practitioner Guide (IEMA, 2008). Following notification of a change, the Contractor's Environmental Manager will initiate a process of assessment of potential impacts and, if necessary, update the CEMP. The Contractor's Environmental Manager will maintain a record of changes and the review process. The updated CEMP will be submitted to the competent authority for approval.

Table 3-1: Contacts sheet.

(Table to be completed by *Employer* and *Contractor* prior to commencement. This table will be updated and kept current by the Contractor for the duration of the Contract).

Company	Position	Name	Tel / mobile no.	Email address
Oriel Windfarm Limited	Project Manager	TBC	TBC	TBC
Oriel Windfarm Limited	Construction Manager	TBC	TBC	TBC
Oriel Windfarm Limited	Environmental Manager	TBC	TBC	TBC
Oriel Windfarm Limited	Site Supervisor	TBC	TBC	TBC
Oriel Windfarm Limited	Community Engagement Manager	TBC	TBC	TBC
Oriel Windfarm Limited	OWL Civil Engineer	TBC	TBC	TBC
Oriel Windfarm Limited	Environmental Clerk of Works (ECoW)	TBC	TBC	TBC
Contractor – tbc	Contractor's Project Manager	TBC	TBC	TBC
Contractor – tbc	Site Agent	TBC	TBC	TBC
Contractor – tbc	Foreman	TBC	TBC	TBC
Contractor – tbc	Environmental Manager	TBC	TBC	TBC
Contractor – tbc	Geotechnical Engineer	TBC	TBC	TBC
Contractor – tbc	Community Liaison Officer	TBC	TBC	TBC
TBC	Specialist Ecological Consultant	TBC	TBC	TBC
TBC	Archaeological Consultant	TBC	TBC	TBC
Louth County Council		TBC	TBC	TBC
National Parks and Wildlife Service (NPWS)		TBC	TBC	TBC
Inland Fisheries Ireland (IFI)		TBC	TBC	TBC
Specialist Emergency Contractor (specify)	TBC	TBC	TBC	TBC

Table 3-2: Main tasks and responsibilities - construction phase.

Task	Contractor									Employer					Visitor
	Project Manager	Site Agent	Site Foreman	Environmental Manager	Geotechnical Engineer	Waste manager	Community Liaison Officer	Specialist Ecological Consultant	Specialists Archaeologist	Project Manager	Construction Manager	Community Engagement Manager	Site Supervisor	ECoW	
Provide information (in accordance with contractual timelines)	☑														
Start Up Meeting	✓	×	×	×	×	×	×	(×)	×	☑	✓	×	×	×	
Site Inductions	☑	✓	×	✓	×	✓		×	×	(×)	×		(×)	✓	×
Obtaining relevant permissions, consents, licenses, and permits	✓			☑		☑								✓	
Weekly progress meetings including *Contractor*, *Employer*, Geotechnical Engineer, Environmental Specialist/Manager/Engineer) updates/issues	☑	×	(×)	✓	(×)	✓	(×)	(×)	(×)	(×)	×	(×)	✓	✓	
Monthly or weekly Environmental Log / Report														☑	
Liaison with regulator / statutory consultees	☑			✓							✓			✓	
Liaison with neighbours, Garda, and Louth County Council							☑					☑			
Environmental checks and monitoring (e.g. dust, oils and chemicals storage, drainage mitigation, plant etc.)	✓	☑	☑	✓	✓			✓			✓		✓	☑	
Environmental analysis		✓		☑										✓	
Waste Management checks and monitoring and analysis and record keeping	✓	✓	✓	✓		☑							✓	✓	
Environmental audits / inspections	✓			☑										☑	
Ecological inspections and monitoring and compliance checks	✓	✓	✓					☑						☑	
Record keeping (e.g., waste documentation, licences, training, incidents, mitigation designs, material, waste, and risk registers etc)	☑			✓	✓	✓		✓		☑	✓		✓	☑	
Archaeological monitoring / inspections	✓								☑						
Communicating environmental observations and suggested improvements	☑			✓		✓	☑	☑	✓	☑	☑	☑	☑	☑	☑

KEY:

☑	Lead / Responsible (may apply to several roles)
✓	Provide support (may apply to several roles)
×	Attend / take action (may apply to several roles)
(×)	Optional / as required
Note:	This table details main tasks / responsibilities. Following agreement between the *Employer and* the Contractor, tasks/responsibilities may be re-assigned.

4. COMMUNITY LIAISON

4.1 Community liaison

OWL recognises the importance of effective community liaison to ensure public safety and welfare during the works, to reduce nuisance to residents and the local community, and to help ensure the smooth running of construction activities. To this end, the requirements for community liaison have been set out below.

The purpose of this is to ensure good relations with the neighbouring community. The key aims include:

- Provide frequent and timely information to the public during the construction phase (particularly to nearby residents and building occupants);
- Provide the correct points of contact and be responsive to queries and complaints; and
- Ensure good housekeeping in all aspects of the operations on site to minimise nuisance.

The Contractor will take all reasonable steps to engage with stakeholders in the local community, focusing on those who may be affected by the construction works including nearby residents, schools, businesses, community resources and specific vulnerable groups.

Communication with the local community, with Louth County Council and other relevant stakeholders will be undertaken at an appropriate level and frequency throughout construction. The Employer appointed Community Engagement Manager will be involved throughout and will work with the Contractors CLO on all aspects of community engagement. Where communications are related to environmental issues, the Environmental Manager will be involved, if appropriate.

A significant part of community liaison is the ‘good neighbour’ policy. Key aspects of this policy include:

- Implementation of the policy from the commencement of construction;
- Providing a point of contact for queries and complaints;
- Minimising causes of nuisance;
- Maintaining access to neighbouring premises;
- Clear and concise information distributed widely and updated frequently; and
- Undertaking timely liaison with stakeholders.

With regard to liaison, the Contractor will be required to provide the details of how the local community, road users and affected residents will be notified in advance of the scheduling of major works, the temporary traffic diversions and the progress of the construction works.

Details of the available communication channels/points of contact for members of the public to contact the project team during construction will be established in advance of the commencement of construction and displayed around working areas. The Contractor’s communication details will include the following:

- Contractor’s community relations policy;
- Personnel nominated to manage community relations;
- A methodology for processing and recording observations, queries and complaints from the public, relevant authorities, the media, and emergency services; and
- The strategy for project-wide liaison with all relevant parties.

The contact details for the CLO will be posted on all construction site notice boards and on any other information or correspondence, which may be distributed from time to time.

4.2 Advance notice of works

The Contractor will ensure that residents, businesses, occupiers, general users of the area and stakeholders are informed in advance of construction activities that may affect them. The Contractor’s detailed procedures and the responsible personnel will be identified in the CEMP when it is updated by the Contractor prior to construction.

All notifications will detail the nature of the works, estimated duration and working hours. All notifications will include a project-specific contact number to which any enquires can be directed. The Contractor will be responsible for preparing and issuing the notifications subject to the relevant approval and consents.

4.3 Enquiries and complaints

The Contractor will establish a process for handling all enquires including complaints. All enquires will be recorded and a log will be maintained to include details of the response and action taken. The log will be available for inspection if requested by Louth County Council. All observations, queries and complaints will be dealt with in a timely manner.

The Employer, including the Community Engagement Manager, Environmental Manager and ECoW will be immediately informed of any environmental-related issues that have been raised. The Contractor's Environmental Manager will be responsible for informing Louth County Council, relevant stakeholders, and statutory bodies, as appropriate, about such issues.

5. GENERAL SITE MANAGEMENT AND POLLUTION PREVENTION

5.1 General site management and pollution prevention

5.1.1 Responsibility

The Contractor is responsible for pollution prevention for the duration of the contract and until such time as permanent measures, such as permanent drainage and silt mitigation controls are deemed to be adequate and appropriately constructed.

The Contractor ensures that all staff and subcontractors working on site will be familiar with pollution prevention and mitigation measures as detailed in this document. This includes subcontractors, Employer's direct contractors and other Employer's representatives working on the site.

It is the responsibility of the Contractor to contact the relevant statutory and non-statutory bodies and stakeholders in the vicinity of the Project, so that the requirements and interests of these parties are adhered to and protected throughout the duration of the Contract.

Prior to works commencing on site, the Contractor will prepare a Pollution Prevention Plan (PPP) in line with the below requirements (as a minimum) and will communicate the contents to all staff (induction / toolbox talks). The PPP covers all potentially polluting activities, considering good practice standards. The Contractor provides the PPP to the Employer prior to start of works on site.

The Contractor monitors, and records in an onsite log, adherence to the PPP throughout the works. The Contractor communicates the PPP and any changes/updates of the PPP to all personnel on site.

5.1.2 Good housekeeping and general pollution prevention measures

The Contractor will ensure "good housekeeping" at all times. The following points (not exhaustive) indicate general pollution prevention measures in accordance with published guidance and project commitments. Pollution prevention measures relating to specific tasks are also detailed in the respective sections of this document. This will include, but not necessarily be limited to, the following measures:

- General maintenance of working areas and cleanliness of welfare facilities and storage areas;
- Provision of site layout map showing key areas such as first aid posts, spill kits, material and waste storage and welfare facilities;
- Maintaining all plant, material and equipment required to complete the construction work in good order, clean, and tidy;
- Keeping construction compounds, access routes and designated parking areas free and clear of excess dirt, rubbish piles, scrap wood, etc. and maintaining dust suppression;
- Provision of signs giving details of site management contact numbers, including out of hours, and public information at the boundaries of the working areas;
- Provision of adequate welfare facilities for site personnel;
- Installation of appropriate security, lighting, fencing, and hoarding at each working area;
- Effective prevention of oil, grease or other objectionable matter being discharged from any working area;
- Provision of appropriate waste management at each working area and regular collections to be arranged;
- Prevention of infestation from pests or vermin including arrangements for regular disposal of food and material attractive to pests. If infestation occurs the Contractor will take appropriate action to eliminate and prevent further occurrence;
- Maintenance of wheel washing or other similar systems and other contaminant measures as required in each working area;

- No discharge of site runoff or water discharge without agreement of the relevant authorities;
- Prohibition of open fires always;
- Use of less intrusive noise alarms, which meet the safety requirements, such as broadband reversing warnings, or proximity sensors to reduce the requirement for traditional reversing alarms;
- Maintenance of public rights of way, diversions and entry/ exit areas around working areas for pedestrians and cyclists where practicable and to achieve inclusive access;
- All loading and unloading of vehicles will take place off the public network wherever this is practicable; and
- Material handling and/or stockpiling of materials, where permitted, will be appropriately located to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.

5.1.3 Hours of work

It is proposed that core working hours will apply as follows:

- Monday to Saturday (inclusive) - 8:00am to 6:00pm; and
- Sunday and Bank Holidays - no operations and no associated lighting other than that required for security or safety.

Specific activities such as large concrete pours or delivery of large equipment (e.g. transformers) which require specific road control may occur outside these hours. Consent would be sought from the local authority and affected local stakeholders informed prior to these activities.

It may also be necessary, for example, due to weather constraints, specialist subcontractor availability or the nature of the activity, to undertake certain activities outside of the core working hours. Any construction outside of the core working hours will be agreed by the Contractor in advance with Louth County Council and scheduling of such works will have regard to nearby sensitive receptors, who will be notified in advance.

In the case of work outside of the core working hours required in an emergency or which if not completed would result in an unsafe or harmful situation for workers, the public or local environment, Louth County Council will be informed as soon as reasonably practicable of the reasons and likely duration and timing.

The removal of waste material off site by road and regular deliveries to site will, where appropriate, be generally confined to outside of peak traffic hours, and will only be undertaken by appropriately permitted hauliers and disposed of in appropriately permitted facilities.

The Contractor may require a period of up to one hour before and one hour after core working hours for start-up and shut down activities in working areas. Activities permitted may include deliveries and unloading of materials, movement of staff to their place of work, maintenance and general preparation works. Except as noted above, the use of plant or machinery likely to cause disturbance will not be permitted outside of the core working hours.

5.1.4 Site security

The security of the works areas will be the responsibility of the Contractor who will provide adequate security to prevent unauthorised entry to or exit from any working areas. The following measures may be used to prevent unauthorised access:

- Installation CCTV and alarm systems where required;
- CCTV and security systems will be sited and directed so that they do not intrude into occupied residential properties;
- Provision of adequate security guards and patrols;
- When there is no activity on site, site gates will be closed and locked and appropriate site security provisions will be undertaken;
- Consultation with neighbouring properties and local crime prevention officers including Louth County Council and An Garda Síochána on site security matters as required; and

- Prevention of access to restricted areas and neighbouring properties by securing equipment on site such as scaffolding and ladders.

5.1.5 Hoarding and fencing

The following measures will be applied in relation to hoarding and fencing:

- Construction compounds will be secured by fencing and provided with lockable gates to prevent unwanted access to temporary compounds and working areas;
- Appropriate sight lines/visibility splays will be maintained around accesses to temporary compounds and working areas from the public road to ensure safety of both vehicles and pedestrians is preserved;
- Temporary Heras fencing will be used in certain areas, such as for short term occupation of working areas;
- Display information boards will be provided with out of hours contact details, a telephone helpline number for comments/complaints and information on the works; and
- Notices to warn of hazards on site such as deep excavations, construction access will be installed on site boundaries.

5.1.6 Services and lighting

Working areas will be powered preferably by mains supplies and by diesel generators where an electrical supply is not available.

The Employer will require the Contractor to put measures in place to ensure that there are no interruptions to existing services unless this has been agreed in advance with the relevant service provider.

Lighting – site lighting will typically be provided by tower mounted temporary portable construction floodlights. The floodlights will be cowled and angled downwards to minimise spillage to surrounding properties. The following measures will be applied in relation to site lighting:

- Lighting will be provided with the minimum luminosity sufficient for safety and security purposes. Where practicable, precautions will be taken to avoid shadows cast by the site hoarding on surrounding footpaths, roads, and amenity areas;
- Motion sensor lighting and low energy consumption fittings will be installed to reduce usage and energy consumption; and
- Lighting will be positioned and directed so that it does not unnecessarily intrude on adjacent buildings and land uses, ecological receptors and structures used by protected species, nor cause distraction or confusion to motorists.

5.1.7 Energy management

The contractor will be required to implement measures to manage energy usage. Measures will include but are not limited to:

- The use of thermostatic controls on all space heating systems in site buildings to maintain optimum comfort at minimum energy use;
- The use of sensors on light fittings in all site buildings and low energy lighting systems;
- The use of adequately insulated temporary building structures for construction compounds fitted with suitable vents;
- The use of low energy equipment and ‘power saving’ functions on all PCs and monitors in the site offices;
- The use of low flow showers and tap fittings; and
- The use of solar/thermal power to heat water for the on-site welfare facilities and contamination unit (sinks and showers).

The contractor will also be required to measure and record all activity data (fuel use, material use, transport, etc.) to allow for the development of a carbon footprint for the construction phase of the Project.

5.1.8 Temporary construction compounds

Welfare Facilities - welfare facilities will be provided, as appropriate, for construction staff and site personnel including locker rooms, drying rooms, toilets, and showers. The welfare facilities will be located at the temporary construction compounds and works areas.

Drinking Water - potable water will be supplied from Irish Water mains where available. If not, potable water will be either transported via tanker to site or via large bottles. Typically, one delivery each week will be required for the provision of potable water.

Grey Water - grey water for non-drinking purposes (construction and toilets) will be sourced via rainfall collection or transported via tanker to site.

Wastewater - sanitary wastewater will be collected and stored on site in holding tanks, which will be emptied on a regular basis by licensed contractors and disposed of appropriately.

Wheel wash or similar- where a wheel wash is installed, this will be located on impermeable surface, and water will be passed through a silt buster or other appropriate surface water management mechanism.

Deliveries to site - deliveries of materials will be planned and programmed to ensure that the materials are delivered only as they are required at the working areas. Storage of material will be at the supplier premises or at the temporary construction compound, depending on the type of material.

Works requiring multiple vehicle deliveries, such as concrete pours, will be planned to ensure queuing on the public roads around the working areas will be avoided as far as is practical.

5.1.9 Reinstatement of working areas on completion

The Contractor will reinstate all road verges and other areas as work proceeds during construction. All plant, equipment, materials, temporary infrastructure, and vehicles will be removed at the earliest opportunity and the surface of the ground restored as near as practicable to its original condition.

The proposed temporary construction compounds will be levelled and regraded with new surfacing to comprise a free draining granular hardcore.

5.1.10 Management of fuels and oils

The Contractor will prepare and adhere to a Fuel Management Protocol in line with the below requirements (as a minimum) and communicate the contents to all staff (via induction / toolbox talks).

The Contractor will provide secure oil, fuel, and chemical storage in over-ground bunded areas, limited to the minimum volume required to serve immediate needs with specified delivery and refuelling areas.

The Contractor will ensure protection measures will be put in place to ensure that all hydrocarbons used are appropriately handled, stored and disposed of in accordance with the TII/NRA document “CIRIA Guideline Document C532 Control of Water Pollution from Construction Sites (CIRIA, 2001) and Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016).

Emergency spill kits will be retained onsite at sensitive locations (e.g. next to water courses such as the river Dee), with portable kits provided to plant and equipment operators. A detailed spillage procedure, as part of the EIERP, will be put in place and all staff on site will be trained with respect to the relevant procedures to be undertaken in the event of the release of any sediment, hydrocarbons into a watercourse. In the event of spillage of any polluting substance and/or pollution of a watercourse, Louth County Council, Inland Fisheries Ireland (IFI) and the NPWS will be notified by the Contractor. A set of standardised emergency response procedures will govern the management of emergency incidents, see reference to the EIERP in section 5.2. A specialised Emergency Contractor will be appointed prior to construction, with contact detail provided in the EIERP.

The Contractor ensures that:

- Fuel and oil containers are stored within a secondary containment system (e.g., bund to 110% of volume for static tanks or a drip tray for mobile stores);

- Ancillary equipment such as hoses, pipes are contained within the bund;
- Fuel and oil stores including tanks and drums are regularly inspected for leaks and signs of damage;
- Only designated trained operators are authorised to refuel plant on site; and
- Procedures and contingency plans are set up to deal with emergency accidents or spills.

All ancillary fuel pipes on plant, outlets at fuel tanks etc. will be regularly checked and maintained to ensure their good state-of-repair and that no drips or leaks to ground occur. The following precautions will also be installed on fuel delivery pipes:

- Any flexible pipe or tap or valve must be fitted with a lock where it leaves the container and be locked when not in use;
- Flexible delivery pipes must be fitted with manually operated pumps or a valve at the delivery end that closes automatically when not in use. Any leaking oil from ancillary pipework must be held within secondary containment;
- The pump or valve must have a lock and be locked when not in use; and
- Warning notices including “No smoking” and “Close valves when not in use” will also be displayed.

Irrespective of the location of refuelling onsite, interceptor drip trays (or similar, e.g., plant nappies, open metal drip trays are not acceptable) will be available and used during all refuelling operations. Interceptor drip trays will be positioned under any stationary mobile plant to prevent oil contamination of the ground surface or water. Plant and site vehicles are to be well maintained and any vehicles leaking fluids must be repaired or removed from site immediately. Any servicing operations will take place over drip trays.

Plant, site vehicles and machinery will be checked daily and are to be well-maintained. Any machinery leaking fluids must be repaired or removed from site immediately. Any servicing operations will take place over interceptor drip trays and will not take place at the site (unless servicing is required at the point of breakdown).

The Contractor identifies a specialist clean-up specialist emergency contractor to engage with in the case of a significant pollution event on site. Details of the specialist contractor will be provided to the Employer prior to works commencing on site. Details of the specialist contractor will be included in the EIERP (section 5.2).

5.1.11 Noise and vibration

Construction activities may give rise to significant noise impacts if not carefully managed. This is particularly the case where activities overlap, and particularly noisy activities need to be completed in close proximity to sensitive receptors. Construction scheduling will be planned to minimise any overlap and carefully control activities when being carried out close to Noise Sensitive Locations (NSL).

BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites outlines a range of measures which have now become standard good practice measures that can be used to reduce the impact of construction phase noise and vibration on the nearest NSLs. These measures will be applied by the Contractor where appropriate during the construction phase of the Project.

Construction at the landfall; onshore cable; and onshore substation site

No construction at the onshore substation site or the onshore cable route will be carried out at night, with the possible exception of abnormal load deliveries to the substation site. Where necessary, mitigation measures will be employed to limit noise within the BS 5228 thresholds. As a minimum the following measures will be adopted and included in the CEMP:

- The contractor will employ a competent acoustician to:
  - Review the operation of the CEMP; and
  - Advise on appropriate noise and vibration monitoring arrangements as required by the local authority.
- The CEMP will specify the use of low noise equipment where practicable;

- Where noise barriers are required for specific activities to limit noise emissions, barriers will be specified by a competent professional who will provide drawings showing the location and a specification of minimum performance for the barriers:
  - Flexible absorptive noise barriers designed for control of construction noise are readily available and can be mounted on heras fencing or similar. Commercially available examples include EchoBarrier, NoiseBreak and Outdoor Sound Curtains; and
  - Standard construction site hoarding functions as an effective noise barrier where it blocks line of site to noisy activity.
- The use of particularly noisy handheld tools such as pneumatic drills may require the use of a site enclosure such as outlined in BS 5228 (2009).

Noise control measures will be employed in each of the construction phases. Standard operating procedures will include many general measures that can reduce noise levels at source such as:

- Avoid unnecessary revving of engines and switch off equipment when not required;
- Keep internal haul routes well maintained and avoid steep gradients;
- Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
- Minimize drop height of materials;
- Start-up plant and vehicles sequentially rather than all together. The movement of plant onto and around the sites should have regard to the normal operating hours of the sites and the location of any NSLs as far as is reasonably practicable; and
- The use of conventional tonal audible reversing alarms has caused problems on some sites and alternatives are available such as white noise reversing alarms. Audible reversing warning systems on mobile plant and vehicles should be of a type which, whilst ensuring that they give proper warning, have a minimum noise impact on persons outside sites.

Landfall location

No significant effects have been predicted for construction noise at the landfall location, there may however be requirements to locate heavy loads or work to tidal constraints at the landfall location which necessitate night-time works for limited periods. Where such work is required, it will be the subject of an approval process and controls to keep construction noise within thresholds will be adopted.

There are a small number of NSLs in the vicinity of the landfall location and keeping residents well informed of works is of importance. The nearest NSL to the landfall excavation is a holiday home and it should be ensured that regular correspondence with the owner is maintained, and notice given of any disruption or noisy activities so that they can plan accordingly if appropriate.

If use of a rock breaker is required for durations of an hour or more, a temporary acoustic enclosure will be erected around the breaker head.

Onshore cable route

The assessment indicates that noise levels from linear trench construction will not result in significant effects. If site conditions make the use of a rock breaker necessary at fixed positions within 40 m of a residential façade, a temporary acoustic enclosure will be erected around the breaker head.

Noise control measures will be employed where necessary along the route to ensure that there are no significant effects due to noise from trenching activities.

The assessment indicates that noise levels at facades more distant than 40 m from joint bay construction activity will not result in significant effects. If site conditions make use of a rock breaker necessary at the following joint bays, a temporary acoustic enclosure will be erected around the breaker head:

- Joint Bay 12 – NSL façade within 20 m;
- Joint Bay 13 – NSL façade within 30 m;

- Joint Bay 14 – NSL façade within 20 m;
- Joint Bay 15 – NSL façade within 40 m;
- Joint Bay 16 – NSL façade within 30 m;
- Joint Bay 18 – NSL façade within 40 m;
- Joint Bay 19 – NSL façade within 40 m;
- Joint Bay 20 – NSL façade within 40 m;
- Joint Bay 21 – NSL façade within 20 m;
- Joint Bay 22 – NSL façade within 20 m;
- Joint Bay 23 – NSL façade within 30 m;
- Joint Bay 24 – NSL façade within 40 m;
- Joint Bay 25 – NSL façade within 40 m; and
- Joint Bay 28 – NSL façade within 20 m.

Noise control measures will be employed where necessary to ensure that there are no significant effects due to noise from joint bay construction.

Four HDD sites have been identified where proximity of NSLs may result in significant effects due to HDD noise, these are:

- Port Stream tributary at Clonmore (open trench preferred);
- Port Stream at Togher; and
- Salterstown Stream.

Temporary noise barriers will be employed at these sites to avoid significant effects. The barriers should be placed as close as practicable to the noisiest equipment and must block line of sight to the nearest NSLs.

Vibration impacts to NSLs from onshore cable construction

Vibration Peak Particle Velocities (PPVs) of 2 to 3 mm/s are predicted for rock breaking if required on the onshore cable route adjacent to the nearest NSLs. BS 5228-2 indicates that these levels will cause complaints in residential environments but can be tolerated if prior warning and explanation is given to residents.

A one to one stakeholder engagement process will be put in place for the duration of the construction phase, including the provision of information to local residents regarding works likely to cause significant noise or vibration and/or works planned to take place outside of core working hours and also establish a process for handling all enquires including complaints. Responsibility for communicating details of construction activities will be assigned to a CLO who will act as a single point of contact with secondary responsibility assigned appropriately to account for any absences.

5.1.12 Dust

The following mitigation measures (as outlined in chapter 23: Air Quality of the EIAR) will be implemented by the Contractor to minimise dust:

- Temporary site roads will be regularly cleaned and maintained as appropriate. Hard surface roads (public and site) will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only;
- Any temporary site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential);
- All vehicles exiting the works will make use of a wheel wash facility (or similar) prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Wheel washes will be self-contained systems that do not require discharge of the wastewater to water bodies;

- Public roads outside the works will be regularly inspected for cleanliness, and cleaned as necessary;
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind;
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road;
- The Contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum; and
- The construction contractor will be required to monitor monthly dust deposition levels each month for the duration of construction for comparison with the guideline of 350 mg/m^2/day (for non-hazardous dusts). This monitoring will be carried out at a series of suitable locations including sensitive receptors along the route and at the site compounds. Where dust levels are measured to be above this guideline the mitigation measures in the area will be reviewed as part of the dust minimisation plan.

5.1.13 Surface water management

The contractor will be required to implement the following surface water management measures prior to commencing construction and decommissioning works on site, in accordance with Best Practice Guidance for the storage of oil BPGCS005 – Oil Storage Guidelines (Enterprise Ireland, nd), and CIRIA guidance (Report No.113 titled “Control of groundwater for temporary works” (CIRIA, 1986)). The mitigation measures will include and are not limited to the following (as outlined in chapter 22: Hydrology and Flood Risk):

Principal Avoidance Measures:

- Site clearance involving topsoil stripping will progress along with the earthworks and will not be carried out over large areas in advance of the works;
- Working areas will be kept as small as possible;
- Material deposition areas are to be designed to avoid sediment entering adjacent watercourses and minimize water quality impacts on waterbodies;
- Excavation works at proximity (10 m buffer zone) to surface waters to be kept to a minimum where possible; and
- Suspend work in advance of extreme weather forecasts.

Principal Control Measures:

- Site compounds/storage facilities will be located at least 10 m away from surface waters. In addition, measures will be implemented to ensure that silt laden or contaminated surface water runoff from compound(s) do not discharge directly to the surface waters. Compounds will not be constructed in lands at risk of flooding;
- All soiled construction runoff water will be passed through settlement ponds/ silt traps and/ or bunds prior to outfall to the receiving surface water where appropriate;
- Management of material deposition areas to prevent siltation of watercourse systems through runoff during rainstorms. It is recommended to construct collector ditches surrounding material stockpiles to contain runoff and direct it to the settlement ponds/ silt traps before discharge to an adjacent watercourse;
- Wheel wash facilities to be appropriately located to ensure wash waters are intercepted, contained and directed to settlement ponds/ silt traps prior to discharge to surface waters; and
- Ensure run-off generated from dewatering activities for discharge to surface waters is treated utilizing temporary settlement pond/tanks(s) in accordance with CIRIA Report No.113 titled “Control of groundwater for temporary works” (CIRIA, 1986).

Surface water monitoring

Excavation works at close proximity to the watercourses particularly at watercourse crossings has the potential to reduce water quality due to increased sediments discharge and accidental spillage.

Water quality sampling will be undertaken prior to construction and decommissioning in order to update the baseline, and on bimonthly basis at the onshore substation and cable crossing locations when rainfall results in any discharge from the site or from a control structure. If oils and grease are visually evident, a sample will be forwarded to an accredited laboratory for analysis.

Monthly sampling will be adequate during times when there is no rainfall/site discharge.

Water Quality Sampling to be undertaken using hand-held water probes to measure the following: pH, turbidity, dissolved oxygen, Total Dissolved Solids (TDS), and temperature. Biological water quality sampling will also be paired with daily visual/sensory observations for water quality characteristics including: algae growth, presence of foam, turbidity, colour, presence of oil, and odour.

5.1.14 Accidental spills

The contractor will implement the following management measures prior to commencing construction and decommissioning works/activities on site. The contractor will adopt best practice measures in accordance with best practice guidance.

Principal Avoidance Measures:

- The storage and handling of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compounds and will not occur within a minimum of 10 m from watercourses; and
- Storage of fuels, chemicals and lubricants at the contractor's compound must be fenced off and have a lockable gate to prevent unauthorized access or vandalism.

Principal Control Measures:

- Foul drainage from all site offices and construction facilities will be taken off-site and disposed of by a licensed contractor;
- Protection measures will be put in place to ensure that all hydrocarbons used during the construction phase are appropriately handled, stored and disposed of in accordance with National Roads Authority (NRA) guidance "*Guidelines for the crossing of watercourses during the construction of National Road Schemes"* (NRA, 2008). All chemical and fuel filling locations will be protected from potential spillages through the provision of appropriate protection measures including bunded areas and double skinned bowser units with spill kits;
- Storage tanks will have secondary containment provided by means of an above ground bund to capture any oil leakage. Storage tanks and associated provision, including bunds, will conform to the current best practice for oil storage and will be undertaken in accordance with Best Practice Guide BPGCS005 – Oil Storage Guidelines (Enterprise Ireland, nd);
- Where required, the pouring of concrete, sealing of joints, application of water-proofing paint or protective systems, curing agents will be completed in the dry and allowed cure for 48 hours in order to avoid pollution of watercourses;
- The use and management of concrete in or close to watercourses will be carefully controlled to avoid spillage. Alternate construction methods are encouraged for example, use of pre-cast concrete or permanent formwork will reduce the amount of in-situ concreting required. Where on-site batching is proposed by the contractor, this activity will be carried away from watercourses (minimum 10 m). Washout from such mixing plant and from concrete delivery trucks will be carried out only in a designated contained impermeable area;
- An Environmental Incident and Emergency Response Plan (EIERP) detailing the procedures to be undertaken in the event of spillage of chemical, fuel or other hazardous wastes (e.g. concrete) to be in place prior by the contractor to commencement of the Project;
- Relevant staff, including cover staff, shall be trained in the implementation of the EIERP and the use of any spill kit/ control equipment as necessary. The contractor shall provide a list of all such staff to the

Employer's Site Representative detailing the name, contact number, and training received, and the date of that training; and

- Plant and equipment shall be maintained in place and in working order for the duration of the works.

5.2 Environmental incident and emergency response

5.2.1 General requirements

The Contractor will prepare a detailed EIERP. The EIERP contains details of emergency scenarios and relevant procedures and actions that will apply.

The Contractor will communicate the EIERP as part of the site induction to all staff and visitors.

The Contractor will ensure the EIERP contains contact details of relevant staff / external authorities such as:

- Environmental Protection Agency (EPA) and EPA 24-hour emergency incident line 1890 33 55 99
- Specialist clean-up contractor;
- Emergency Services;
- IFI;
- Local Authority Environmental Officers;
- An Garda Síochána;
- National Parks and Wildlife Services; and
- The Coast Guard.

5.2.2 Safety and Environmental Awareness Reports (SEAR) and Environmental Auditing

The Contractor will complete a Safety and Environmental Awareness Report (SEAR) for all potential (near miss) or actual environmental incident or emergency which occurs on site.

5.2.3 Pollution/spill incident

The Contractor will provide a one-page summary sheet containing the key information for incidents response to be used as a quick reference for any on-site personnel witnessing an incident. A laminate copy of this summary sheet will be located with all plant / machinery / on-site vehicles. Key information to be provided to the Project Manager and the ECoW within 30 minutes of an incident (irrespective of the scale / severity of the incident) will include:

- What substance was spilled (Material Data Safety Sheet);
- Approximate volume and time of spillage;
- Accurate location of spill (GPS/grid reference or ID/number referenced on map etc.);
- All measures taken to clean up the spill;
- Help required (i.e., manpower, machinery, expert advice, disposal, etc.); and
- Whether the spill has reached a watercourse or the marine environment.

The Contractor in updating the EIERP, will consider the impacts of pollution/spill incidents during construction and will note the actions to be taken in the event of a pollution incident, including the following:

- Containment measures;
- Emergency discharge routes;
- List of appropriate equipment and clean-up materials;
- Maintenance schedule for equipment;

- Details of trained staff, location, and provision for 24-hour cover;
- Details of staff responsibilities;
- Notification procedures to inform the relevant environmental protection authority;
- Audit and review schedule;
- Telephone number of Uisce Éireann; and
- List of specialist pollution clean-up companies and their telephone numbers.

The Contractor will ensure that adequate means to absorb or contain any spillages of chemicals, pollutants are available at all times.

5.2.4 Emergency access

The Contractor will be required to maintain access routes for the emergency services in all work areas for the duration of the construction phase and to identify the emergency site access points to each work area.

These will be developed in consultation with the emergency services and documented by the Contractor, as part of the updated CEMP prior to construction commencing, as well as being identified in the updated EIERP.

5.2.5 Extreme weather events and flood risk

The Contractor will consider the impacts of extreme weather events, flood risk and related conditions during construction. The Contractor will be required to use the short to medium range weather forecasting service from Met Éireann, or other approved meteorological data and weather forecast provider, to inform short to medium term scheduling of the works, environmental controls, and mitigation measures.

The updated CEMP will include appropriate contingency measures to manage extreme weather events (red weather warnings from Met Éireann), including the suspension of work, where required. The measures will include training of personnel and prevention and monitoring arrangements for weather events. Where relevant risks have been identified, the detailed construction method statements will consider extreme weather events.

Works will not be carried out during extreme rainfall. Met Eireann provides a 5-day weather forecast via its website (www.met.ie). The Contractor shall monitor this and other appropriate weather forecasts on a regular basis, at least daily. The forecast maps total rainfall, averaged over six hours, in the following bands:

- < 2 mm/hr (denoted by blue and green shading);
- 2 to 3 mm/hr (denoted by yellow shading); 3 to 6 mm/hr (denoted by orange shading); and
- >6 mm/hr (denoted by red shading).

Measures to limit the generation of sediment-laden runoff are to be implemented by the Contractor, according to the following predicted rainfall bands:

Table 5-1: Measures to limit the generation of sediment-laden runoff

Category	Predicted Rainfall	Action
Red	>6 mm/hr	• Excavation works to be reviewed; • Stockpiled materials and excavations to be covered; and • Silt fences, check dams and other sediment control measures to be inspected hourly.
Orange	3 to 6 mm/hr	• The Contractor shall have regard to the existing ground conditions with respect to possible erosion of sediments, and halt excavation works if necessary; • Impermeable matting to be placed adjacent to stockpiled materials

Category	Predicted Rainfall	Action
		and excavations for installation if the rainfall intensity increases; and • Silt fences, check dams and other sediment control measures to be inspected hourly.
Blue, Green, Yellow	<3 mm / hr	• Silt fences, check dams and other sediment control measures to be inspected hourly.

5.2.6 Fire and explosion risk

Even though the fire and explosion risk during construction are very low, the updated CEMP will include appropriate contingency measures to manage such risks. The measures will include training of personnel in fire and explosion risk awareness, risk prevention and risk monitoring. Portable fire extinguishers, suitable for the activities at the working area, checked and maintained in working order, will be available for use at each of the working areas. Potentially flammable or hazardous substances will be stored appropriately, and quantities stored will be limited to the minimum volume required to meet the immediate requirements.

Appropriate site personnel will be trained as first aiders and fire marshals. Monitoring of site activities to minimise fire and explosion risk will be a key part of the duties of the site safety officer and fire marshals.

5.3 Climate

The following measures (as outlined in chapter 17: Climate of the EIAR) will be implemented by the Contractor to avoid/minimise CO_2 emissions during the construction phase:

- Reducing the idle times by providing an efficient material handling plan that minimizes the waiting time for loads and unloads. Reducing idle times could save 10% of total emissions during construction phase;
- Turning off vehicular engines when not in use for more than five minutes. This restriction will be enforced strictly unless the idle function is necessary for security or functionality reasons; and
- Regular maintenance of plant and equipment. Technical inspection of vehicles to ensure they will perform the most efficiently.

The Contractor will be required to implement energy management measures for the duration of the works as outlined in section 5.1.7.

Materials with a reduced environmental impact will be incorporated into the construction design through re-use of materials or incorporation of recycled materials in place of conventional building materials. The following materials will be considered for the construction phase:

- Ground Granulated Blast Furnace Slag (GGBS) and Pulverised Fuel Ash – Used as replacements for Portland cements to increase sustainability and carbon footprint of civil and structural works; and
- Steel – The recovery rates associated with using recycled steel are high and research exists which shows that 99% of structural steel arising from demolition sites is recycled or re-used. The carbon emissions emitted during the production of virgin steel can be higher than some other structural materials on a tonne-by-tonne basis, and recycled steel should be used where possible.

The Contractor will also be required to measure and record all activity data (fuel use, material use, transport, etc.) to allow for the development of a carbon footprint for the construction phase of the Project.

5.4 Population and human health

The following measure (as outlined in chapter 18: Population and Human Health of the EIAR) will be implemented by the Contractor to reduce the potential for impacts on population and human health during the construction phase:

- Implementation of the Construction Traffic Management Plan (CTMP) (see appendix 5-9: Construction Traffic Management Plan). This outlines measures to be followed in order to avoid, minimise or mitigate disruption to traffic in the surrounding area during the construction phase, specifically;
- In order to enhance the public health benefits of increased education and training and good quality employment, training and employment opportunities will be offered through a workforce management plan.

5.5 Biodiversity

The following measures (as outlined in chapter 19: Onshore Biodiversity of the EIAR) will be implemented by the Contractor to reduce the potential for impacts on biodiversity during the construction phase:

- Section 5.1 of this CEMP outlines measures to be followed in order to avoid, minimise or mitigate disruption to the environment and surrounding area during the construction phase, specifically;
- An Ecological Management Plan will be produced and implemented;
- A suitably qualified and experienced ecologist ('the ecologist') will be utilised in the implementation of the measures and survey requirements;
- For revegetation within the proposed Natural Heritage Area (pNHA), the profile of the sea cliffs will be reinstated. Existing vegetation will be retained before reprofiling and will be reinstated and allowed to regenerate after construction;
- A 10 m buffer zone from Dunany Point pNHA will be implemented on the landward side within the planning application boundary. The buffer zone will be physically demarked using post and rail/post and rope/bunting, or equivalent, and be signposted to identify an ecological sensitivity. The ecologist will assess and verify the demarcation and signage before works commence. See EIAR aappendix 19-1: Onshore Biodiversity – Supporting Information (section 19.4) for specific detailed measures;
- Timing of the works at the landfall location to avoid the peak season for intertidal birds (October to April, inclusive). Timing of vegetation removal works to avoid the bird nesting season (March to August, inclusive). Avoidance of light spill during night-time hours, and badger buffer zones between 30 m and 150 m depending on works type and season. See EIAR appendix 19-1: Onshore Biodiversity – Supporting Information, (section 19.4) for specific detailed measures; and
- Pre-construction surveys (complete protected and invasive species survey, including breeding bird assessment). See EIAR appendix 19-1: Onshore Biodiversity – Supporting Information (section 19.4) for specific detailed measures.

Disturbance measures

- Timing of landfall works (i.e. installation of the cable in the intertidal and shingle banks) will avoid peak season for intertidal birds (October to April, inclusive);
- Timing of HDD works will avoid the peak movements of fish (i.e. fish migration into rivers for spawning, and smolt emigration from the river to the sea) between March-May (smolt emigration) and June-August (return for spawning);
- Timing of works in the intertidal area (i.e. cable repair and reburial) will avoid peak season for intertidal birds (October to April, inclusive);
- The removal of existing hedgerow will avoid the bird nesting season (March to August, inclusive). See volume 2C appendix 19-1: Onshore Biodiversity – Supporting Information, section 19.4 for specific detailed measures;
- Any external lighting utilised to facilitate night-time working or security (i.e. at the onshore substation site, onshore cable route and landfall location) will be directional and cowled to avoid the light spill (above 1 LUX) to all relevant Important Ecological Features (IEFs);
- In the unlikely event that roosting or stranded bats are encountered on the Project, works will immediately cease in that area and the local NPWS Conservation Ranger will be contacted. If present, bats will only be removed under licence from the NPWS; and
- All works within the disturbance range of identified badger setts will implement the following:

- Prior to works commencing within the vicinity of any sett, all site personnel will be given a Toolbox talk where operatives will be briefed on the presence of the sett and the legal protection and exclusion buffer zones that badgers and setts are afforded;
- Any piling will take place at a distance greater than 150 m from identified badger setts;
- An exclusion buffer zone of 30 m will be maintained around the setts in the summer season (July to October, inclusive), extended to 50 m during the badger breeding season (November to June, inclusive);
- All overburden mounds will be sited at a minimum distance of 50 m from any identified sett;
- The buffer zones will be physically demarked using post and rail/post and rope/bunting, or equivalent, and be signposted to identify an ecological sensitivity. The sensitive protected species (e.g. badger) will not be identified in any signage. The ecologist will assess and verify the demarcation and signage before works commence; and
- In the event that previously unidentified badger setts are detected, the recommendations set out in the Guidelines for the Treatment of Badgers during the Construction of National Road Schemes (NRA, 2007) will be applied, and the ecologist will formally agree any proposed additional mitigation measures with the local NPWS Conservation Ranger. Further consultation and wildlife derogation licences may be required.

Surface water measures

See also measures listed in section 5.1.13.

- Prior to construction, all Methods Statements for watercourse crossings will be issued to IFI for agreement;
- All instream works will avoid the IFI recommended ‘closed season’ (October to May, inclusive);
- All works will be undertaken in accordance with IFI Guidance on the protection of fisheries during construction works in and adjacent to waters (IFI, 2016);
- All construction works will be undertaken in accordance with CIRIA Guidance (CIRIA, 2001; CIRIA 2006a; CIRIA 2006b) titled “Control of water pollution from construction sites (C532)” and “Control of water pollution from linear construction projects (C648 and C649)”; and
- For the general protection of watercourses, the following measures will be employed:
  - Stockpiling of construction materials will be strictly prohibited within 5 m of any ditch or water-laden channel;
  - Hazardous materials including diesel, fuel oils, solvents, paints and/or lubricants stored on site will be stored within suitably designed bunded areas with a bund volume of 110% of the capacity of the largest tank/container;
  - Re-fuelling of plant will not occur within 20 m of any watercourse or surface water/groundwater feature. Drip trays will be used, and spill kits will be kept available and used if necessary;
  - Fuel will be transported in a mobile, double skinned tank;
  - Waste oils and hydraulic fluids will be collected in leak-proof containers and removed from the site for disposal or recycling;
  - Only emergency breakdown maintenance will be carried out on site. Emergency procedures and spillage kits will be readily available at strategic site locations and relevant all will be familiar with emergency procedures; and
  - Any spillage of fuels, lubricants of hydraulic oils will be immediately contained, with an appropriate emergent response put in place. Any contaminated soil will be removed from the site and properly disposed of.
- For the protection of watercourses associated with the onshore substation site, the following measures will be employed:
  - All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of

alkaline waste waters to the underlying subsoil. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite;

- Ensure run-off generated from dewatering activities for discharge to surface waters is treated utilizing temporary settlement pond/tanks(s) in accordance with CIRIA Report No.113 titled "Control of groundwater for temporary works" (CIRIA, 1986).
- Concrete will be contained and managed appropriately to prevent pollution of watercourses. Concrete pouring will be prevented during periods of heavy rainfall, and quick setting mixes will be used; and
- Waste materials will be stored in designated areas that are isolated from surface water drains. Skips will be closed or covered to prevent materials being blown or washed away.

- For the protection of watercourses associated with the trenchless works (i.e. HDD and tunnelling) at the M1 motorway/railway, River Dee (Richardstown and Drumcar), Ardballan/Port streams (Togher) and Salterstown stream, the following measures will be employed:
  - A buffer zone of at least 10 m will be established from the River Dee, Ardballan/Port streams and Salterstown stream crossings. The buffer zones will be physically demarked using post and rail/post and rope/bunting, or equivalent, and be signposted to identify an ecological sensitivity. The ecologist will assess and verify the demarcation and signage before works commence;
  - Silt fencing will consist of a maintainable geotextile membrane (equivalent to Terrastop™ Premium; 250 micron; 45 l/m^2/sec). Installation, maintenance, and removal will follow the manufacturers' specifications. The geotextile membrane will be inspected at least once a week and following any period of heavy rainfall; and
  - HDD crossing design will ensure no hydraulic connection or interference with the watercourses.
- Additionally, for the protection of watercourses associated with the use of bentonite during HDD operations:
  - At pre-construction, detailed site investigations will be undertaken to inform the final design of the HDD route. The results of the site investigations will significantly reduce the risk of a bentonite break out;
  - An aquatic ecologist will be required onsite to observe the HDD drill operations to ensure that no bentonite leaks or escapes into nearby surface waters;
  - Bentonite batching locations will be located at least 10 m from watercourses in order to minimise bentonite leaks and spills;
  - Earth banks and sand bag barriers will be used alongside silt fencing around bentonite batching areas in order to minimise bentonite leaks and spills;
  - The pressure of bentonite pumping will be strictly monitored, and lowered if necessary to mitigate against a bentonite breakout;
  - Monitoring of watercourses will be undertaken while works are in progress using hand-held water probes to measure pH, alongside visual observations for water quality characteristics including colour and turbidity;
  - Bentonite will be recycled through the HDD process but must be disposed of as controlled waste at the end of construction;
  - Should any inadvertent bentonite release occur, containment and clean-up operations will be in place, and works will cease immediately;
  - For releases on land, the Contractor will make immediately available (and the resources to deploy them) silt fences, sand bags and earth berms to prevent fluid from migrating or flowing from the immediate area of the discharge. Clean up operation will include removal equipment such as vacuum trucks and small pumps;
  - Should any inadvertent bentonite release occur, containment and clean-up operations will be in place, and works will cease immediately;
  - For releases on land, the Contractor will make immediately available (and the resources to deploy them) - silt fences, sand bags and earth berms to prevent fluid from migrating or flowing from the immediate area of the discharge. Clean up operation will include removal equipment such as vacuum trucks and small pumps.

- For the protection of watercourses associated with the onshore cable route, the following measures will be employed:
  - Waste materials will be stored in designated areas that are isolated from surface water drains. Skips will be closed or covered to prevent materials being blown or washed away.
- For all works associated with joint bays 10-29, and the TJB, inclusive, the following measures will be employed:
  - All ready-mixed concrete will be brought to site by truck. A suitable risk assessment for wet concreting will be completed prior to works being carried out which will include measures to prevent discharge of alkaline waste waters to the underlying subsoil. Wash down and washout of concrete transporting vehicles will take place at an appropriate facility offsite;
  - Ensure run-off generated from dewatering activities for discharge to surface waters is treated utilizing temporary settlement pond/tanks(s) in accordance with CIRIA Report No.113 titled “Control of groundwater for temporary works” (CIRIA, 1986);
  - Concrete will be contained and managed appropriately to prevent pollution of watercourses. Concrete pouring will not occur during periods of heavy rainfall, and quick setting mixes will be used; and
  - Waste materials will be stored in designated areas that are isolated from surface water drains. Skips will be closed or covered to prevent materials being blown or washed away.
  - Open trench crossings at the Newhall stream and the Port stream at Clonmore will be achieved by fluming the existing stream flow through one or more pipes depending on the size of the flows in the stream. The flume pipe(s) will be approx. 10 m long and the diameter suitable to accommodate the existing flows. Where applicable, under the supervision of the ecologist, spawning gravels will be removed at the stream crossing areas where construction will take place. The extent of spawning gravel removal will be agreed for each site with IFI prior to construction commencing. Following the installation of the cable ducts, the stream bed (and associated riparian habitat) will be reinstated with original or similar material and the spawning gravels replaced under the supervision of the aquatic ecologist.

Removal and/or fragmentation measures

- The removal of existing hedgerow will avoid the bird nesting season (March to August, inclusive);
- Replacement at all hedgerow removal locations will be undertaken and the following measures will be employed:
  - All replacement planting will be of native tree/shrub species of Irish providence (i.e. from within the island of Ireland);
  - Replacement planting at each location will be dominated by native species identified for those locations within the baseline. Where ash was the dominant hedgerow species removed, hawthorn or blackthorn will be planted as dominant instead;
  - The dominant tree species in the planting will be feathered whips, while sub-dominant species will be greater than 40 cm in height;
  - All replacement hedgerow planting will contain, at a minimum, four native tree/shrub species;
  - Planting will follow a double-row format of zig-zag pattern, with row spacing at 50 cm and tree spacing at 40 to 45 cm; and
  - All replacement hedgerows will be maintained for eight years, with seasonal checks by a suitably qualified arboriculturalist/ecologist for the first two years and yearly checks for the subsequent six years. A rate of 90% living individuals after four years and 80% living individuals at eight years will be retained, with replacement planting as required. Any gaps greater than 1 m will be replanted with native tree/shrub species of similar size to those adjacent.
  - Depending on the progression of hedgerow/tree replanting and restoration, maintenance of vegetation may extend beyond an eight year period. This will be determined by a suitably qualified ecologist.
- Replacement of hedgerow associated with joint bay 20 will also include 20 to 40% replanting with spindle. Maintenance, as outlined above, will also be completed;

- Several mature trees, identified as having low and moderate suitability for roosting bats (BT2, BT3, BT6, BT7, BT24, BT25) will be retained; and
- Several mature trees, identified as having low suitability for roosting bats (BT4, BT5, BT14-18) are assessed to be removed. These trees will be 'soft' felled. Soft felling will include the following measures:
  - Felling to be undertaken under the supervision of the ecologist;
  - Felling of entire tree from base, allowing the tree to fall (i.e. no introduced force);
  - The ecologist will inspect the felled tree for further evidence of bat roosting. If evidence is found, all works on that tree will be halted and the local NPWS Conservation Ranger will be contacted. No further works on that tree will be permitted without agreement from the NPWS; and
  - Tree to be left in place (uncut) for 24 hrs, after which, sectioning, chipping, and removal can take place.

Invasive alien species measures

- Before construction begins, avoidance and management measures for Invasive Alien Plant Species (IAPS) listed in the third schedule for the EC birds and Natural Habitats Regulations, 2011 (as amended) will be implemented by the ecologist or a suitably qualified and experienced invasive species specialist. These measures will include the following information and management protocols for dealing with occurrences of scheduled invasive species:
  - Pre-construction field surveys for IAPS within the planning application boundary of the Project will be completed by the Ecologist;
  - A buffer zone of 10 m will be put in place around all known location of IAPS. The buffer zone will be physically demarked using post and rail/post and rope/bunting, or equivalent, and be signposted to identify an ecological sensitivity. The ecologist will assess and verify the demarcation and signage before works commence;
  - Prior to works commencing within the vicinity of any IAPS, all site personnel will be given a Toolbox talk where operatives will be briefed on the presence of the IAPS and the legal protection that badgers and setts are afforded;
  - All excavated material within 7 m of the IAPS locations will be considered to be contaminated with material (roots, stem fragments, or seeds) suitable to cause the spread of IAPS (see Transport Infrastructure Ireland (TII), 2020) and be disposed of at an appropriately licensed waste facility; and
  - No disturbance of IAPS will take place during the works, apart from essential works within the 7 m buffer zone for construction of the Project.
- The materials which are introduced to the site during the construction will be free from scheduled invasive species, with certification of such;
- Where a scheduled invasive species is accidentally introduced or becomes established within the Project site during pre-construction surveys and/or the construction phase, works will be immediately halted and an effective exclusion zone will be erected (minimum 10 m) until such time that the ecologist/invasive species specialist can assess the site(s), and implement the required management protocol (as set out in the measures above);

5.6 Land and agriculture

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on land and agriculture during the construction phase:

- Existing access to property, including homes, agricultural fields and farm facilities will, where practicable, be maintained during construction. Otherwise, reasonable temporary access will be provided;
- Any disruption to water supply will be reinstated immediately by the Contractor or an alternative source supplied until the source is reinstated, unless otherwise agreed with the landowner;
- All drainage likely to be affected or disturbed during the construction phase will be identified and reinstated; and

- All land hedgerows, fencing and access, where required temporarily during the construction will be reinstated.

5.7 Soil, geology and hydrogeology

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on soil, geology and hydrogeology during the construction phase:

- Excavated materials will be carefully managed in accordance with industry best practice during construction, to prevent any potential negative impact on the receiving environment and the excess material will be considered for reuse or be taken directly to an appropriately licenced facility avoiding contact with any open surface water drains;
- Excavated material will not be left uncovered to avoid run-off of silty water and excavations will be backfilled at the earliest convenience to avoid leaving stockpiles exposed;
- During the earthworks phase of construction, all lands including those temporarily acquired, will be re-instated to pre-construction conditions unless otherwise agreed with the landowner. The construction of the substation, TJB, onshore cable joint bays will require lands permanently. The lands for construction compounds, passing bays and access routes will require lands temporarily and as such may be potentially damaged due to the construction activities and need re-instatement. The structure of soils within temporary construction and access areas will be potentially affected from being trafficked by construction vehicles. The potential to damage soil structures will become more pronounced when construction activities occur during wet periods;
- All drainage likely to be affected or disturbed during the construction phase will be identified and reinstated. Field drainage systems currently in-situ may be disturbed and in places disabled during construction. This disturbance may lead to wet or flooded fields during spells of wet weather and farm productivity could be reduced;
- Management of topsoil and subsoil will be managed in accordance with industry best practices such as the Department of Environment, Food and Rural Affairs (UK) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites and the EPA's Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects;
- For all trenching along the road, all excavated material will be taken off-site in trucks and managed, under licence from the appropriate authority, thus preventing any contaminated run-off to roadside drains during heavy rainfall. In off-road areas where the top 400 to 500 mm of topsoil will be set aside within the wayleave for later reinstatement, these stockpiles will be stored at least 10 m back from drains and watercourses on level ground with a silt fence inserted at the base;
- Imported materials to the site will be sourced from a reputable supplier (who will provide certification of materials where required) to ensure that only clean material is brought to site;
- Dewatering all groundwater from the trench, joint bays, etc. will be managed in line with industry best practices;
- Groundwater and surface water accumulating in the base of trenches will not be pumped directly to roadside drains or watercourses unless it is clean and free from solids. Solids-contaminated water will be discharged to a designated percolation area designated by a competent person if the soil is not waterlogged. In the case of heavy contamination, the water will either be removed off-site for disposal in a licensed facility by tank truck or pumped to a portable on-site settlement tank for treatment. These operations will be monitored by a designated competent member of the construction team on a regular basis to ensure that they are working effectively;
- Temporary storage of Cement Bound Material (CBM) will be carefully managed. This will be stored on hardstanding areas only where there is no direct drainage to surface waters and where the area has been bunded. Measures will be applied by using sandbags and geotextile sheeting or silt fencing to contain any solids in run-off.

The Project includes designed-in measures such as emptying of employed bunds, provision of spill-kits and routine maintenance of equipment. The following measures will also be implemented to reduce the potential of adverse effects on groundwater:

- The storage and handling of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compounds and will not occur within a minimum of 10 m from watercourses; and
- Storage of fuels, chemicals and lubricants at the Contractor's compound must be fenced off and have a lockable gate to prevent unauthorised access or vandalism. The principal control measures are as follows:
  - Protection measures will be put in place to ensure that all hydrocarbons used during the construction phase are appropriately handled, stored and disposed of in accordance with the TII/NRA document "Guidelines for the crossing of watercourses during the construction of National Road Schemes". All chemical and fuel filling locations will be protected from potential spillages through the provision of appropriate protection measures including bunded areas and double skinned bowser units with spill kits;
  - Storage tanks shall have secondary containment provided by means of an above ground bund to capture any oil leakage. Storage tanks and associated provision, including bunds, will conform to the current best practice for oil storage and will be undertaken in accordance with Best Practice Guide BPGCS005 – Oil Storage Guidelines (Enterprise Ireland);
  - Where required, the pouring of concrete, sealing of joints, application of water-proofing paint or protective systems and curing agents will be completed in the dry and allowed to cure for 48 hours in order to avoid pollution of watercourses;
  - The use and management of concrete will be carefully controlled to avoid spillage;
  - The EIERP will be undertaken in the event of a spillage of chemical, fuel or other hazardous wastes (e.g. concrete) to be in place prior to commencement of construction;
  - Plant and equipment will be maintained in place and in working order for the duration of the works;
  - Temporary construction compounds (include storage facilities) will be located at a minimum of 10 m away from surface waters. In addition, measures will be implemented to ensure that silt laden or contaminated surface water run-off from the compound does not discharge directly to the surface waters. Temporary construction compounds will not be constructed in lands at risk of flooding;
  - All soiled construction run-off water will be passed through settlement ponds/silt traps and/or bunds prior to outfall to the receiving surface water where appropriate;
  - Management of material deposition areas to prevent siltation of watercourse systems through run-off during rainstorms through construction of collector ditches surrounding material stockpiles to contain run-off and direct it to the settlement ponds / silt traps before discharge to an adjacent watercourse;
  - Wheel wash facilities or similar facilities to be appropriately located to ensure wash waters are intercepted, contained and directed to settlement ponds / silt traps prior to discharge to surface waters; and
  - Any contaminated soils will be removed. The contaminated soil will then require to be quarantined, removed, and disposed of at an appropriate licensed facility.

The following GSI recommendations are also included within the proposed works:

- Access to the site is to be provided for GSI staff during construction to record the exposures of glacial till within the works; and
- GSI are to be provided sufficient notification of the commencement of works to allow GSI staff the opportunity to schedule resources to inspect the site.

5.8 Hydrology and flood risk

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on hydrology and flood risk during the construction phase:

- Following the installation of the cable ducts within watercourse crossings, in the case of an open trench construction method, the stream bed will be reinstated with original or similar material under the supervision of an aquatic ecologist;
- Section 5.1.13 outlines measures to be implemented by the Contractor related to surface water management; and

- Section 5.1.14 outlines measures to be implemented by the Contractor related to accidental spills.
- Water quality sampling will be undertaken prior to construction in order to update the baseline, and on bimonthly basis at the onshore substation and cable crossing locations when rainfall results in any discharge from the site or from a control structure. If oils and grease are visually evident, a sample will be forwarded to an accredited laboratory for analysis. Monthly sampling will be adequate during times when there is no rainfall/site discharge. Water Quality Sampling to be undertaken using hand-held water probes to measure the following: pH, turbidity, dissolved oxygen, Total Dissolved Solids (TDS), and temperature. Biological water quality sampling will also be paired with daily visual/sensory observations for water quality characteristics including: algae growth, presence of foam, turbidity, colour, presence of oil, and odour.

5.9 Air quality

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on air quality during the construction phase:

- Implementation of the CTMP (see EIAR appendix 5-9: Construction Traffic Management Plan);
- Temporary site roads will be regularly cleaned and maintained as appropriate. Hard surface roads (public and site) will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only;
- Any temporary site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential);
- All vehicles exiting the works will make use of a wheel wash facility (or similar) prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Wheel washes will be self-contained systems that do not require discharge of the wastewater to water bodies;
- Public roads outside the works will be regularly inspected for cleanliness, and cleaned as necessary;
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind;
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;
- All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road;
- The Contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum; and
- Section 5.1.12 outlines measures to be implemented by the Contractor related to dust control.

5.10 Noise and vibration

Section 5.1.11 outlines the measures to be implemented by the Contractor to reduce the potential for impacts on noise and vibration during the construction phase.

5.11 Cultural heritage

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on cultural heritage during the construction phase:

- The construction team will be made aware of the locations of those upstanding structures that are designated Record of Protected Structures (RPS) / National Inventory of Architectural Heritage (NIAH) sites and the Cultural Heritage sites situated in the immediate vicinity of the onshore cable route (see EIAR appendix 26-1: Cultural Heritage Report, Tables 1-2, 1-3 and 1-5);
- (CH6) A photographic and written record of the impacted section of the rubble stone wall at Drumcar will be made. The impacted section of the wall will be rebuilt using traditional methods and the same

materials subject to agreement and any other requirements as may be agreed with the planning authority prior to the commencement of construction;

- A section of woodland shelterbelt associated with the former Drumcar Demesne (GS ID: GS2) will be impacted. Replanting to restore any breach in the wooded shelterbelt with similar trees will be undertaken where feasible;
- The location of the boulder known as the 'Mad Chair of Dunany' on Dunany beach (located outside the planning application boundary at approximately ITM 715647, 791296) will be made known to the construction team;
- An exclusion zone (i.e. where no construction or earthmoving works will take place) of >5 m from the southern walled/hedgerow boundary of Dunany Demesne will be maintained during construction; and
- No works will be carried out that will damage the boundary wall of Dunany Demesne. The proposed permanent access track to TJB (Option 2) will be installed 5 m away from the Dunany Demesne wall to ensure no impact on this feature.

AAP1 – Dunany Demesne and Beach; AAP2 – Port/Boycetown

The following mitigation measures are required for the protection of unidentified subsurface archaeological sites or features or additional stray finds at and within the vicinity of AAP1 and AAP2:

- A programme of archaeological monitoring will take place at the pre-construction and early phases of construction, during the stripping of topsoil, site preparation and earthmoving works, and where any preparatory ground reduction works are required;
- The archaeological monitoring will be carried out by a suitably qualified archaeologist under Licence to the Department of Housing, Local Government and Heritage (DHLGH). This will ensure the full recognition of, and the proper excavation and recording of all archaeological soils, features, finds and deposits which may be disturbed below the ground surface;
- In the event of the discovery of archaeological finds or remains, the National Monuments Service (NMS) and the National Museum of Ireland (NMI) will be notified immediately. If features are revealed, the immediate area will need to be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided (by rerouting the onshore cable) to the satisfaction of the statutory authorities. This possibility will be accounted for in the Project programme and budget, and will be undertaken at the earliest phases of the Project to allow the archaeologists sufficient time to record/excavate as required;
- Provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted. In accordance with legislative requirements the funding provision will include the production of written reports on the findings, with post-excavation analyses and publications of the results of the works, where appropriate; and
- A report detailing the results of the monitoring will be submitted to the DHLGH upon completion of the works in accordance with the terms and conditions of the archaeological licence; and
- A 5 m buffer zone from the southern boundary of Dunany Demesne will be maintained to ensure no accidental damage to the demesne boundary wall during construction works.

AAP3 – Clonmore

The following mitigation measures are required for the protection of subsurface archaeological features, soils or finds (including the potential to reveal burials), related to the settlement at Clonmore and within the vicinity of AAP3:

- All earthmoving works associated with the cable installation in the area adjacent to the recorded archaeological sites in Clonmore (AAP3), including any temporary/enabling works associated with the Project will require archaeological monitoring under license issued by the DHLGH. The purpose of monitoring is to identify any archaeological material or features that are uncovered during ground disturbance works;
- In the event of the discovery of archaeological finds or remains, the National Monuments Service (NMS) and the National Museum of Ireland (NMI) will be notified immediately. If features are revealed, the immediate area will be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided (by rerouting the cable) to the satisfaction of

the statutory authorities. This possibility will be accounted for in the Project programme and budget, and will be undertaken at the earliest phases of the Project to allow the archaeologists sufficient time to record/excavate as required; and

- Provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted. In accordance with legislative requirements the funding provision will include the production of written reports on the findings, with post-excavation analyses and publications of the results of the works, where appropriate.

AAP4 – Drumcar

The following mitigation measures are required for the protection of known archaeological features either side of the River Dee crossing at and within the vicinity of AAP4:

- It is recommended that the onshore cable route and associated wayleave be subject to full licenced excavation of the archaeological features identified on either side of the River Dee (ring ditch, field system and habitation activity) within the construction area well in advance of construction. This will allow time for any archaeological remains within the wayleave to be archaeologically excavated and preserved by record under licence to the NMS; and
- Provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted. In accordance with legislative requirements the funding provision will include the production of written reports on the findings, with post-excavation analyses and publications of the results of the works, where appropriate.

The following mitigation measure is required to ensure the wooded shelterbelt within the former demesne of Drumcar House (NIAH Garden LH0026), in the southernmost part of the demesne, is returned to its former function:

- The disturbed area will be replanted where possible noting restrictions over onshore cable route (see chapter 5: Project Description).

AAP5 – Greenfield

The following mitigation measures are required for the protection of subsurface isolated remains/features at and within the vicinity of AAP5.

It is unlikely that geophysical survey and testing in this area will capture isolated features similar to those identified on the N33 within the onshore cable route. Such sites are usually found during the topsoil stripping phase of the Project. Given the proven potential for the discovery of previously unknown and isolated sites in the vicinity of the Project:

- Archaeological monitoring of the earthmoving works will be carried out under license from DHLGH. The purpose of monitoring is to determine if any archaeological material or features are uncovered during ground disturbance works;
- In the event of the discovery of archaeological finds or remains, the NMS and the NMI will be notified. Provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted;
- If features are revealed, the immediate area will be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided to the satisfaction of the statutory authorities. This possibility will be accounted for in the Project programme and budget; and
- In accordance with legislative requirements the funding provision will include the production of written reports on the findings, with post-excavation analyses and publications of the results of the works, where appropriate.

AAP6 – Stickillin Substation

The following mitigation measures are required for the protection of archaeological features identified within the footprint of the onshore substation site at and within the vicinity of AAP6:

- It is recommended that two areas each measuring 20 m x 20 m be opened for full excavation and preservation by record in the areas of the burnt mound remains. This is to be carried out under licence to the NMS; and

- The area south of the Stickillin field will be stripped of topsoil under archaeological supervision well ahead of commencement of construction on the site to establish if the features identified and indicated on geophysical survey is archaeological, and if so to make provision for its excavation or preservation in situ as appropriate.

AAP7 – Various Locations

The following mitigation measures are required for the protection of greenfield archaeological potential within the vicinity of AAP7:

- Licensed archaeological monitoring of earthmoving works in greenfield areas will be carried out. The purpose of monitoring is to identify any archaeological material or features are uncovered during ground disturbance works;
- In the event of the discovery of archaeological finds or remains, the NMS and the National Museum of Ireland (NMI) will be notified immediately. If features are revealed, the immediate area will be investigated, allowing no further development to take place until the site is fully identified, recorded and excavated or alternatively avoided (by rerouting the cable) to the satisfaction of the statutory authorities. This possibility will be accounted for in the Project programme and budget, and will be undertaken at the earliest phases of the development to allow the archaeologists sufficient time to record/excavate as required; and
- As above provision will be made to allow for, and fund any, archaeological work that may be needed if any remains are noted.

5.12 Landscape and seascape

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on landscape and seascape during the construction phase:

- Replacement hedgerow planting at locations along the onshore cable route; shallow rooting species where required over the onshore cable route to prevent disturbance of the cable by roots; and
- Restoration and repair of gates and fences that have been removed/damaged during the construction works.

5.13 Traffic and transport

The following measures (as outlined in the EIAR) will be implemented by the Contractor to reduce the potential for impacts on traffic and transport during the construction phase:

- Although onshore cable works will only have a temporary and limited traffic impact during the construction phase, there will still be a requirement for localised traffic management (see EIAR appendix 5-9: Construction Traffic Management Plan) to facilitate the installation of joint bays, and the trenching/ ducting for the cable. It is confirmed that local access to all dwellings, businesses and schools will be retained throughout the entire works through the provision of passing bays which have been designed into the Project. Please see chapter 5: Project Description for further information on passing bays;
- Implement sightlines In accordance with TII Publication DN-GEO—03060 (TII, 2017) are provided for the substation access and temporary access to the site compounds; and
- It is recommended that discussions will be had with St Finian's National School and the St Colmcille National School schools to determine if there is any impact on bus routes/access. The sequencing of the works could be altered to ensure that works take place during school holidays.

5.14 Material assets

The following measures (as outlined in chapter 29: Material Assetsthe EIAR) will be implemented by the Contractor to reduce the potential for impacts on material assets during the construction phase:

- Any disruption to built services will be reinstated as soon as practicable, unless otherwise agreed with the asset owner, and where practicable by the Contractor;

- Where required, ducting will be provided to allow for the provision of services (electrical/water) across severed areas unless otherwise agreed with the asset owner and where practicable;
- Any disruption to water supply will be reinstated immediately by the Contractor or an alternative source supplied until the source is reinstated, unless otherwise agreed with the landowner or Uisce Éireann as appropriate;
- Prior to commencement of construction works the Contractor will be required to engage with all built services providers. The Contractor will continue liaison with providers as required throughout the construction phase;
- Prior to any mechanical excavation taking place, there will be consultation with ESB Networks to establish and verify the exact locations of all underground electricity cables. Gas Networks Ireland (GNI) will also be consulted, and the exact position of the two gas transmission gas pipelines will be verified prior to works commencing; and
- All work being conducted in the vicinity of underground services will be completed in accordance with the current Health and Safety Authority (HSA) 'Code of Practice for Avoiding Danger from Underground Services'. Furthermore, the ESB Code of Practice and HSA guidance, including the 'Code of Practice for Avoiding Danger from Overhead Electricity Lines', regarding exclusion and safe operating distances around electricity infrastructure will be adhered to. Height restriction barriers and equipment will be used to demark electrical infrastructure.

5.15 Waste

The following measures (as outlined in chapter 20: Resource and Waste Management of the EIAR) will be implemented by the Contractor to reduce the potential for impacts on waste and coastal litter during the construction phase:

- Any waste and/or coastal litter arising from the construction, operation and maintenance, and decommissioning phases of the Project will be managed in accordance with the current national waste policy. Any waste and/or coastal litter that cannot be prevented or reused will be deposited at an appropriate facility;
- If any unforeseen waste or hazardous material is encountered during the course of the Project, the EPA will be notified, and the material will be deposited at an appropriate waste facility;
- A Waste Manager will be nominated who will have overall responsibility for the implementation of all waste and coastal litter processes. In conjunction with this, a clear responsibility structure will be introduced in the Project team to ensure issues encountered are raised at an appropriate level and acted upon;
- Records will be kept on the quantity nature/type and quality of all waste/ coastal litter leaving the site;
- The management of waste generated by the Project will reflect the waste management hierarchy, with waste prevention and minimisation being the priority succeeded by reuse and recycling. Where there are opportunities for the beneficial reuse and recycling of materials, these will be considered;
- Excess material will be made available for reuse off-site. It is anticipated that the available material will be a clean and valuable resource capable of meeting the specifications of a typical Class 1 material. This material can be reused in local projects under development, assuming by-product classification can be achieved. Alternatively, the material can be recovered at quarries in the local area and beyond. The availability of the material and the scheduling of local construction projects will be kept under review as the project develops. If reuse of surplus material is not possible, it will be sent for appropriate recovery. Any site identified for recovery of soil and stone will require the appropriate planning permission and waste authorisation in place to accept the material on-site;
- Sustainable practices will be implemented when choosing materials to be used in the construction of the Project, including the use of cement containing high levels of GGBS or recycled steel (see volume 2C, chapter 17: Climate for further detail relating to sustainable materials);
- All Contractors (and their Sub-Contractors) will produce a Waste Management Plan (WMP), providing details of all waste management procedures for their activities and details of expected waste arisings and proposed procedures for waste management. The Contractor's Environmental Manager will be

responsible for the compilation of this document. The WMP will include the following aspects as a minimum:

- Analysis of the waste arisings/material surpluses;
- Specific waste management objectives for the Project;
- Methods proposed for prevention, reuse and recycling of wastes;
- Material handling procedures; and
- Proposals for education of workforce and plan dissemination programme.

- The WMP will be prepared in accordance with the EPA Best Practice Guidelines for the Preparation of Resources & Waste Management Plans for Construction and Demolition Projects; and
- All contractors will be obliged to implement and maintain the following measures and actions as part of the WMP (where relevant):
- Meet all relevant legislative and EIAR requirements and obtain whatever additional permits and licences are necessary in relation to waste management;
- Communicate the requirements of the WMP to all personnel during their induction and ensure all operatives on site attend waste reduction toolbox talks to increase awareness of recycling/waste reduction;
- Transfer of waste or refuse will only be conducted by licensed waste carriers and waste treatment and waste disposal will be conducted by licensed and permitted waste management companies, in compliance with applicable waste legislation and current national waste policy. This is necessary so that all waste is disposed of to the best possible facility type to adhere to the circular economy and resource opportunity strategies;
- Be compliant with and use the current version of Transfrontier Shipment of Waste Regulations where waste is being exported by Contractors (or their subcontractors). Export of waste will also be in line with the principles of the Basel Convention of 1989, which was agreed internationally to avoid hazardous waste being unfairly exported to developing countries;
- If unforeseen waste or hazardous material is encountered during the Project, the appropriate authorities will be notified, and the material will be deposited at an appropriate waste facility;
- Appropriate measures will be employed to identify unexpected, contaminated soil and stone material. These measures will include early identification of locations where contamination is more likely. Staff will be trained in how to identify contamination and how to manage it if encountered. Identification will include visual checks for unusual discolouration, oil sheens, anthropogenic materials, and checks for olfactory clues such as hydrocarbon or other odours. Suspect contaminated material will be sampled and appropriately analysed at laboratory;
- Records will be kept on the quantity nature/type and quality of all waste leaving the site. Good record keeping being conducted by the contractor including quantities (tonnes) and type of waste and materials leaving the site. The name, address and authorisation details of all facilities and locations to which waste and materials are delivered will be recorded along with the quantity of waste in tonnes delivered to each facility. Records will show material, which is recovered, and which is disposed;
- Source separating wastes into dry mixed recyclables, biodegradable, and residual wastes. Clear labelling of waste bins, containers, skip containers and storage areas, including waste stream colour coding and photographs as appropriate;
- Appropriate Storage: Waste fuels/oils will be generated from equipment used on-site during construction and will be classified as hazardous waste. Paints, sealants, and hazardous chemicals etc. will be stored in secure, bunded locations. All hazardous waste will be separately stored and labelled, in appropriate lockable containers, prior to removal from site by an appropriately permitted waste collection service provider; and
- Waste generated on site will be removed as soon as practicable following generation for delivery to an authorised waste facility.

References

CIRIA (1986). Report 113. Control of groundwater for temporary works.

CIRIA, 2001. CIRIA Guideline Document C532 Control of Water Pollution from Construction Sites. Item Detail (ciria.org).

CIRIA (2006a). Control of water pollution from linear construction projects. Technical guidance (C648).

CIRIA (2006b). Control of water pollution from linear construction projects. Site guide (C649).

Enterprise Ireland (nd). Best Practice Guide BPGCS005 – Oil Storage Guidelines.

IFI, 2016. Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters Guidelines on protection of fisheries during construction works in and adjacent to waters | Inland Fisheries Ireland.

NRA (2007). Guidelines for the Treatment of Badgers during the Construction of National Road Schemes.

NRA (2008). Guidelines for the crossing of watercourses during the construction of National Road Schemes. 80359 wetlands (tii.ie).

TII (2017). Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions). DN-GEO—03060

A.1 Required contractor's information

The information listed in the table below will be provided by the Contractor to the *Employer* according to the provisions of the contract, as indicated.

To be updated post-consent in accordance with planning permission

Documents / Information (and updates thereof) required	Pre-start of works	During and after construction
Consents, licences, and permissions for activities as required by current legislation governing the protection of the environment		
Completed / Updated Contacts Sheet		
Pollution Prevention Plan		
Fuel Management Plan		
Drainage Maintenance Register		
Weekly Environmental Risk Log		
Geotechnical Risk Register		
Environmental Risk Map		
Toolbox Talk Schedule		
Environmental Inspection Schedule		
Risks register, Risk Assessment and Method Statements		
Construction Waste Management Plan and related information		
Excavation / Reinstatement records and plans		
Inspection and Audit Reports		
Water monitoring records		
Environmental Incident and Emergency Response Plan		

Note: The above list only relates to requirements of this CEMP and is not exhaustive. As part of the Contract, other information provisions will also be required from the Contractor.

A.2 Environmental Policy

	HSSE Policy				
	Document ID	PWD-HSSE-POL-0001			
	Scope	Department	Revision	Status	Date
	Parkwind	HSSE	5.0	Final	26/01/2021

As a leading company in the development and generation of green and sustainable energy, Parkwind strives to be an industry leader in the management of Health, Safety, Security and Environmental risks, and the optimization of improvement opportunities throughout everything it does.

The Parkwind HSSE philosophy is based on the following principle:

"No one gets hurt, nothing gets damaged and all risks are controlled and managed"

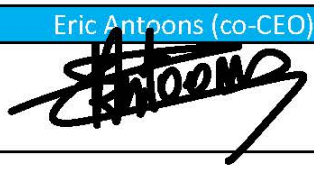
Health, Safety, Security and Environmental protection is a prime business objective, and it is the responsibility of top management and supervision to ensure the principles and the commitments stated within this Policy, are consistently achieved throughout.

To ensure common understanding, approach, and achievement of HSSE goals, Parkwind will actively encourage all partners, contractors, and subcontractors to adopt all HSSE Policy principles and commitments throughout their engagement.

To enable the HSSE principles to be achieved, Parkwind shall commit to ensuring:

- a HSSE Management System is established, implemented and maintained with the purpose of eliminating hazards and reducing HSSE risks;
- the provision of safe and healthy working conditions for the prevention of work-related injury and ill-health and to avoid security breaches, damage and/or pollution to the environment;
- HSSE objectives and targets are set, monitored, and reviewed to ensure compliance is being maintained;
- As a minimum, compliance with all applicable legal and other requirements and obligations;
- implementing known and approved industry standards and leading the way if such standards are not available;
- consult and ensure the active participation of all employees and contractor personnel on all HSSE related arrangements and issues and empower them to take action to stop the works if they feel the risks involved to be unacceptable;
- provide suitable and sufficient HSSE information, instruction and training to enable all personnel to carry out their job competently;
- continuous monitoring, review, and improvement of HSSE performance and the effectiveness of this HSSE Policy and HSSE Management System

The Executive Management of Parkwind underwrites this Policy, commits to provide adequate and appropriate resources and will ensure this Policy is properly communicated and understood by all.

	François Van Leeuw (co-CEO)	Eric Antoons (co-CEO)
		

A.3 Commitments Register

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation		
No.	Topic	EIAR Chapter	Aspect	Commitment (please read in conjunction with the EIAR chapter)	Related Planning Condition	Relevant document for Implementation	Responsible Party
1	Climate	Chapter 17	Materials with reduced environmental impact	Materials with a reduced environmental impact will be incorporated into the construction design through re-use of materials or incorporation of recycled materials in place of conventional building materials. The following materials shall be considered for the construction phase:- •Ground Granulated Blast Furnace Slag (GGBS) & Pulverised Fuel Ash - Used as replacements for Portland cements to increase sustainability and carbon footprint of civil and structural works; and •Steel - The recovery rates associated with using recycled steel are high and research exists which shows that 99% of structural steel arising from demolition sites is recycled or re-used. The carbon emissions emitted during the production of virgin steel can be higher than some other structural materials on a tonne by tonne basis, and recycled steel should be used where possible.	To be updated.	CEMP	Applicant/ Contractor
2	Climate	Chapter 17	Measures to minimise CO2 during construction	The following measures will be implemented by the Contractor to avoid/minimise CO_2 emissions during the construction phase: •Reducing the idle times by providing an efficient material handling plan that minimizes the waiting time for loads and unloads. Reducing idle times could save 10% of total emissions during construction phase; •Turning off vehicular engines when not in use for more than five minutes. This restriction will be enforced strictly unless the idle function is necessary for security or functionality reasons; and •Regular maintenance of plant and equipment. Technical inspection of vehicles to ensure they will perform the most efficiently.	To be updated.	CEMP	Applicant/ Contractor
3	Climate	Chapter 17	Energy management measures during construction	The Contractor will be required to implement energy management measures for the duration of the works such as: •The use of thermostatic controls on all space heating systems in site buildings to maintain optimum comfort at minimum energy use; •The use of sensors on light fittings in all site buildings and low energy lighting systems; •The use of adequately insulated temporary building structures for construction compounds fitted with suitable vents; •The use of low energy equipment and 'power saving' functions on all PCs and monitors in the site offices; •The use of low flow showers and tap fittings; and •The use of solar/thermal power to heat water for the on-site welfare facilities and contamination unit (sinks and showers).	To be updated.	CEMP	Applicant/ Contractor
4	Climate	Chapter 17	Carbon footprint	The Contractor will be required to measure and record all activity data (fuel use, material use, transport, etc.) to allow for the development of a carbon footprint for the construction phase of the Project.	To be updated.	CEMP	Applicant/ Contractor
5	Population and Human Health	Chapter 18	CEMP CTMP	Implement Construction Transport Management Plan (CTMP)	To be updated.	CEMP; CTMP	Applicant/ Contractor
6	Population and Human Health	Chapter 19	CEMP	Training and employment opportunities will be offered through a workforce management plan.	To be updated.	-	Applicant/ Contractor
7	Biodiversity	Chaper 19	EMP	For overall Onshore Biodiversity management a an Ecological Management Plan will be produced and implemented. This will include all measures included in section 5.5 of the CEMP.	To be updated.	CEMP	Applicant/ Contractor
8			Buffer Zone	A 10 m buffer zone from Dunany Point pNHA will be implemented on the landward side within the planning application boundary. The buffer zone will be physically demarked using post and rail/post and rope/bunting, or equivalent, and be signposted to identify an ecological sensitivity. The ecologist will assess and verify the demarcation and signage before works commence. See EIAR appendix 19-1: Onshore Biodiversity – Supporting Information, section 19.4 for specific detailed measures;	To be updated.	CEMP	Applicant/ Contractor
9			Pre-construction surveys	Pre-construction surveys (complete protected and invasive species survey, including breeding bird assessment). See appendix 19-1, section 19.4 for specific detailed measures.	To be updated.	CEMP	Applicant/ Contractor
10			Timing of works	Timing of the works at the landfall to avoid the peak season for intertidal birds (October to April, inclusive). Timing of vegetation removal works to avoid the bird nesting season (March to August, inclusive). Avoidance of light spill during night-time hours, and badger buffer zones between 30 m and 150 m depending on works type and season. See appendix 19-1, section 19.4 for specific detailed measures.	To be updated.	CEMP	Applicant/ Contractor
11			Timing of works	Timing of the works to avoid the bird nesting season (March to August, inclusive), replacement of all removed hedgerows, retention of trees with moderate suitability to roosting bats, and soft felling of trees with low suitability for roosting bats. See appendix 19-1, section 19.4 for specific detailed measures.	To be updated.	CEMP	Applicant/ Contractor
12			Timing of works	Timing of the instream works to avoid the IFI recommended 'closed season' (October to May, inclusive), and protection of watercourses from siltation, hydrocarbons and other pollutants using suitably material storage, procedures, buffer zones, and sediments control measures. See appendix 19-1, section 19.4 for specific detailed measures.	To be updated.	CEMP	Applicant/ Contractor
13	Land and Agriculture	Chapter 20	Access to property	Existing access to property, including homes, agricultural fields and farm facilities will, where practicable, be maintained during construction, otherwise reasonable temporary access will be provided.	To be updated.	CEMP	Applicant/ Contractor
14			Disruption to water supply	Any disruption to water supply will be reinstated immediately by the Contractor or an alternative source supplied until the source is reinstated, unless otherwise agreed with the landowner	To be updated.	CEMP	Applicant/ Contractor
15			Drainage	All drainage likely to be affected or disturbed during the construction phase will be identified and reinstated.	To be updated.	CEMP	Applicant/ Contractor
16			Subsoiling of agricultural lands	All agricultural lands temporarily acquired for the construction will, before return to the landowner, be subsoiled to alleviate compaction and minimise risk of impeded crop growth and will be re-instated to pre-construction conditions unless otherwise agreed with the landowner.	To be updated.	CEMP	Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation		
No.	Topic	EIAR Chapter	Aspect	Commitment (please read in conjunction with the EIAR chapter)	Related Planning Condition	Relevant document for Implementation	Responsible Party
17	Soil, Geology and Hydrogeology	Chapter 21	Excavated material	Excavated materials will be carefully managed in accordance with industry best practice during construction, to prevent any potential negative impact on the receiving environment and the excess material will be taken directly to an appropriately licenced facility avoiding contact with any open surface water drains. Excavated material will not be left uncovered to avoid run-off of silty water and trial pits will be backfilled at the earliest convenience to avoid leaving stockpiles exposed.	To be updated.	CEMP	Applicant/ Contractor
18			Re-instatement of earthworks	During the earthworks stage of construction, all lands including those temporarily acquired, will be re-instated to pre-construction conditions unless otherwise agreed with the landowner.		CEMP	Applicant/ Contractor
19			Management of topsoil and subsoil	Management of topsoil and subsoil will be managed in accordance with industry best practices. For all trenching along the road, all excavated material will be taken off-site in trucks and disposed of, under licence from the appropriate authority, thus preventing any contaminated run-off to roadside drains during heavy rainfall. In off-road areas where the top 400-500 mm of topsoil will be set aside within the wayleave for later reinstatement, these stockpiles will be stored at least 15 m back from drains and watercourses on level ground with a silt fence inserted at the base.	To be updated.	CEMP	Applicant/ Contractor
20			Imported materials	Imported materials to the site shall be sourced from a reputable supplier to ensure that only clean material is brought to site.	To be updated.	CEMP	Applicant/ Contractor
21			Dewatering all groundwater	Dewatering all groundwater from the trench and joint bays will be managed in line with industry best practices. Groundwater and surface water accumulating in the base of trenches will not be pumped directly to roadside drains or watercourses unless it is clean and free from solids. Solids-contaminated water will be discharged to a designated percolation area designated by a competent person if the soil is not waterlogged. In the case of heavy contamination, the water will either be removed off-site for disposal in a licensed facility by tank truck or pumped to a portable on-site settlement tank for treatment. These operations will be monitored by a designated competent member of the construction team on a regular basis to ensure that they are working effectively.	To be updated.	CEMP	Applicant/ Contractor
22			Temporary storage of CBM 4	Temporary storage of CBM 4 will be carefully managed. This will be stored on hardstanding areas only where there is no direct drainage to surface waters and where the area has been bunded. Will be applied by using sandbags and geotextile sheeting or silt fencing to contain any solids in run-off.	To be updated.	CEMP	Applicant/ Contractor
23			County Geological Site	The cable route and TJB has been developed to minimise impact on the County Geological Sites along the coast.	To be updated.	CEMP	Applicant/ Contractor
24			Imported crush rock	Imported crushed rock which is imported to the site shall be sourced from a reputable supplier to ensure that only clean material is brought to site.	To be updated.	CEMP	Applicant/ Contractor
25			Drainage	All drainage likely to be affected or disturbed during the construction phase will be identified and reinstated.	To be updated.	CEMP	Applicant/ Contractor
26			Storage and handling of oils, fuels, chemicals and hydraulic fluids	•The storage and handling of oils, fuel, chemicals and hydraulic fluids will be in secure areas within the site compounds and will not occur within a minimum of 10 m from watercourses; •Storage of fuels, chemicals and lubricants at the Contractor's compound must be fenced off and have a lockable gate to prevent unauthorised access or vandalism. •The principal control measures are as outlined in section 5.7 of the CEMP.	To be updated.	CEMP	Applicant/ Contractor
27			GSI Recommendations	The following GSI recommendations are also included within the proposed works: •Access to the site is to be provided for GSI staff during construction to record the exposures of glacial till within the works; and •GSI are to be provided sufficient notification of the commencement of works to allow GSI staff the opportunity to schedule resources to inspect the site.			Applicant/ Contractor
28	Hydrology and Flood Risk	Chapter 22	Reinstatement of steam beds	Following the installation of the cable ducts within watercourse crossings, in the case of an open trench construction method, the stream bed will be reinstated with original or similar material under the supervision of an aquatic ecologist.	To be updated.	CEMP	Applicant/ Contractor
29			Surface water Management	The contractor will be required to implement the following surface water management measures prior to commencing construction and decommissioning works on site, in accordance with Best Practice Guidance for the storage of oil BPGCS005 – Oil Storage Guidelines (Enterprise Ireland, nd), and CIRIA guidance (Report No.113 titled "Control of groundwater for temporary works" (CIRIA, 1986)). The mitigation measures will include and are not limited to those set out in 5.1.13 of the CEMP:	To be updated.	CEMP	Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation		
No.	Topic	EIAR Chapter	Aspect	Commitment (please read in conjunction with the EIAR chapter)	Related Planning Condition	Relevant document for Implementation	Responsible Party
30	Air Quality	Chapter 23	Traffic Management Plan	Implement Construction Traffic Management Plan (CTMP)	To be updated.	CEMP, CTMP	Applicant/ Contractor
31			Site roads	•Site roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface while any un-surfaced roads shall be restricted to essential site traffic only; •Any site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential); •All vehicles exiting the site shall make use of a wheel wash facility prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads; •Wheel will be self-contained systems that do not require discharge of the wastewater to water bodies; •Public roads outside the site shall be regularly inspected for cleanliness, and cleaned as necessary; •Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind; •Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods; •All vehicles which present a risk of spillage of materials, while either delivering or removing materials, will be loaded in such a way as to prevent spillage on to the public road; •The Contractor will be required to ensure that all vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum; and •The Contractor will be required to monitor monthly dust deposition levels each month for the duration of construction for comparison with the guideline of 350 mg/m2/day (for non-hazardous dusts). This monitoring should be carried out at a minimum of four locations at sensitive receptors around the Project works. Where dust levels are measured to be above this guideline the mitigation measures in the area will be reviewed as part of the CEMP.	To be updated.	CEMP	Applicant/ Contractor
32	Noise and Vibration	Chapter 25	Competent professional	Contractor to engage a competent acoustician for the duration of construction.	To be updated.	CEMP	Applicant/ Contractor
33			Monthly noise and vibration report	Implement noise control measures as outlined in section 5.1.11 of CEMP.	To be updated.	CEMP	Applicant/ Contractor
35	Cultural Heritage	Chapter 26	Cultural Heritage Sites	The construction team will be made aware of the locations of those upstanding structures that are designated RPS / NIAH sites and the Cultural Heritage sites situated in the immediate vicinity of the onshore cable corridor (Figure 26-4, Appendix 26-1-4, Tables 26-2, 26-3 and 26-5). This will be incorporated into the EMP.	To be updated.	CEMP	Applicant/ Contractor
36			CH6 impacted section	(CH6) A photographic and written record of the impacted section of the rubble stone wall at Drumcar will be made. The impacted section of the wall will be rebuilt using traditional methods and the same materials subject to agreement and any other requirements as may be agreed with the planning authority prior to the commencement of construction	To be updated.	CEMP	Applicant/ Contractor
37			GS2 impacted section	A section of woodland shelterbelt associated with the former Drumcar Demesne (GS2) will be impacted. Replanting to restore any breach in the wooded shelterbelt with similar trees will be undertaken.	To be updated.	CEMP	Applicant/ Contractor
38			Mad chair	The location of the boulder known as the 'Mad Chair of Dunany' on Dunany beach (located outside the planning application boundary at approximately ITM 715647, 791296) will be made known to the construction team;	To be updated.	CEMP	Applicant/ Contractor
39			Dunany Demense wall	An exclusion zone (i.e. where no construction or earthmoving works will take place) of >5 m from the southern walled/hedgerow boundary of Dunany Demesne will be maintained during construction; and	To be updated.	CEMP	Applicant/ Contractor
40			Dunany Demense wall	No works will be carried out that will damage the boundary wall of Dunany Demesne. The proposed permanent access track to TJB (Option 2) will be installed 5 m away from the Dunany Demesne wall to ensure no impact on this feature.	To be updated.	CEMP	Applicant/ Contractor
41			AAP1 – AAP7	See measure for protection in section 5.11 of CEMP	To be updated.	CEMP	Applicant/ Contractor
42	Landscape and Seascape	Chapter 27	Onshore cable route	Replacement hedgerow planting at locations along the onshore cable route; shallow rooting species where required over the onshore cable route to prevent disturbance of the cable by roots.	To be updated.	CEMP	Applicant/ Contractor
43			Onshore cable route	Restoration and repair of gates and fences that have been removed/damaged during the construction works; and	To be updated.	CEMP	Applicant/ Contractor
44	Traffic and Transport	Chapter 28	Traffic management	Implement CTMP	To be updated.	CTMP	Applicant/ Contractor
45			Visibility splays	Implement sightlines In accordance with TII Publication DN-GEO—03060 (TII, 2017) are provided for the substation access and temporary access to the site compounds; and	To be updated.	CTMP	Applicant/ Contractor
46			Traffic management	It is recommended that discussions will be had with St Finian's National School and the St Colmcille National School schools to determine if there is any impact on bus routes/access. The sequencing of the works could be altered to ensure that works take place during school holidays.	To be updated.	CEMP	Applicant/ Contractor

Environmental Management, Mitigation and Monitoring Measures - to be completed post consent					Mechanism for Implementation		
No.	**Topic**	**EIAR Chapter**	**Aspect**	**Commitment (please read in conjunction with the EIAR chapter)**	**Related Planning Condition**	**Relevant document for Implementation**	**Responsible Party**
47	Material Assets	Chapter 29	Disruption to built services	Any disruption to built services will be reinstated as soon as practicable, unless otherwise agreed with the asset owner, and where practicable by the Contractor;	To be updated.	CEMP	Applicant/ Contractor
48			Liaison and planning	· Where required, ducting will be provided to allow for the provision of services (electrical/water) across severed areas unless otherwise agreed with the asset owner and where practicable;	To be updated.	CEMP	Applicant/ Contractor
49			Ducting	· Any disruption to water supply will be reinstated immediately by the Contractor or an alternative source supplied until the source is reinstated, unless otherwise agreed with the landowner or Uisce Éireann as appropriate;	To be updated.	CEMP	Applicant/ Contractor
50			Liaison and planning	· Prior to commencement of construction works the Contractor will be required to engage with all built services providers. The Contractor will continue liaison with providers as required throughout the construction phase;	To be updated.	CEMP	Applicant/ Contractor
51				· Prior to any mechanical excavation taking place, there will be consultation with ESB Networks to establish and verify the exact locations of all underground electricity cables. Gas Networks Ireland (GNI) will also be consulted, and the exact position of the two gas transmission gas pipelines will be verified prior to works commencing; and	To be updated.	CEMP	Applicant/ Contractor
52				· All work being conducted in the vicinity of underground services will be completed in accordance with the current Health and Safety Authority (HSA) 'Code of Practice for Avoiding Danger from Underground Services'. Furthermore, the ESB Code of Practice and HSA guidance, including the 'Code of Practice for Avoiding Danger from Overhead Electricity Lines', regarding exclusion and safe operating distances around electricity infrastructure will be adhered to. Height restriction barriers and equipment will be used to demark electrical infrastructure.	To be updated.	CEMP	Applicant/ Contractor
53	Resource and Waste Management	Chapter 30	Waste management	Any waste and/or coastal litter arising from the construction, operation and maintenance, and decommissioning phases of the Project will be managed in accordance with the current national waste policy. Any waste and/or coastal litter that cannot be prevented or reused will be deposited at an appropriate facility;	To be updated.	CEMP	Applicant/ Contractor
54			Notification of waste or hazardous material	If any unforeseen waste or hazardous material is encountered during the course of the Project, the EPA will be notified, and the material will be deposited at an appropriate waste facility	To be updated.	CEMP	Applicant/ Contractor
55			Waste manager	A Waste Manager will be nominated who will have overall responsibility for the implementation of all waste processes. In conjunction with this, a clear responsibility structure will be introduced in the Project team to ensure difficulties encountered are raised at an appropriate level and acted upon.	To be updated.	CEMP	Applicant/ Contractor
56			Records of waste	Records will be kept on the quantity nature/type and quality of all waste leaving the site.	To be updated.	CEMP	Applicant/ Contractor
57			Waste management	•The management of waste generated by the Project will reflect the waste management hierarchy, with waste prevention and minimisation being the priority succeeded by reuse and recycling. Where there are opportunities for the beneficial reuse and recycling of materials, these will be considered; •Excess material will be made available for reuse off-site. It is anticipated that the available material will be a clean and valuable resource capable of meeting the specifications of a typical Class 1 material. This material can be reused in local projects under development, assuming by-product classification can be achieved. Alternatively, the material can be recovered at quarries in the local area and beyond. The availability of the material and the scheduling of local construction projects will be kept under review as the project develops. If reuse of surplus material is not possible, it will be sent for appropriate recovery. Any site identified for recovery of soil and stone will require the appropriate planning permission and waste authorisation in place to accept the material on-site; •Sustainable practices will be implemented when choosing materials to be used in the construction of the Project, including the use of cement containing high levels of GGBS or recycled steel (see volume 2C, chapter 17: Climate for further detail relating to sustainable materials);	To be updated.	CEMP	Applicant/ Contractor
58			Waste management plan	All Contractors (and their Sub-Contractors) will produce a Waste Management Plan (WMP), providing details of all waste management procedures for their activities and details of expected waste arisings and proposed procedures for waste management. The Contractor's Environmental Manager will be responsible for the compilation of this document which will implement all the measures outlined in section 5.15 of the CEMP.	To be updated.	CEMP	Applicant/ Contractor