

Sure Partners Limited

ARKLOW BANK WIND PARK  
PHASE 2

**ONSHORE GRID  
INFRASTRUCTURE**

**VOLUME III**

**Chapter 6 APPENDICES**

**Appendix 6.1** Construction  
Environmental Management Plan

ARUP

 **sse**  
Renewables

**Sure Partners Limited**

**Construction Environmental  
Management Plan (CEMP)**

**Arklow Bank Wind Park Phase 2  
Onshore Grid Infrastructure**

**(Project Ref.LF100034)**

## CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

### Arklow Bank Wind Park Onshore Grid Infrastructure

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# CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

## Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure

### DOCUMENT CONTROL

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	Name	Position	Signature
Prepared by:	Clodagh O'Donovan Carmel Brennan	Director (Arup) Environmental Adviser	
Checked by:	Matthew Vesey	Consent Manager	
Reviewed by:	Gary Nolan	Transmission Package Manager	
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### GLOSSARY

The following defines some of the terms used throughout this document:

**The *Employer*** – The Client i.e. the entity commissioning the construction of the onshore grid infrastructure and associated civil infrastructure. That is, Sure Partners Limited (SPL).

**The *Contractor* / *Principal Contractor* (PC)** – The *Contractor* responsible for Civil Infrastructure; the Contractor as defined in the Safety, Health and Welfare at Work (Construction) Regulations 2013.

**Decommissioning** – Decommissioning is a process including the partial removal of the onshore grid infrastructure at the end of its natural operational phase. Decommissioning works will involve similar tasks / impacts as construction works and will be subject to additional detailed proposals to be submitted to the Planning Authority prior to the commencement of the decommissioning works.

**Environmental (Ecological) Clerk of Works (ECoW)** – The ECoW is an independent specialist appointed by the *Employer*, typically with an ecological background, albeit with practical experience of broad environmental issues associated with construction. In accordance with relevant planning conditions, applicable regulations and good practice, the ECoW monitors environmental compliance and provides advice to the *Employer* and *Contractor* where required. The ECoW role and associated responsibility is outlined in this document.

**Geotechnical Engineer** – The Geotechnical Engineer is a technical specialist appointed by the *Contractor*. The Geotechnical Engineer monitors the construction works, ensuring that excavations and material stockpiles are managed in an appropriate manner to prevent the occurrence of material instability. The Geotechnical Engineer provides advice to the *Employer* and *Contractor* where required. The Geotechnical Engineer role and associated responsibility is outlined in the Works Information (and this CEMP).

**Reinstatement** – Reinstatement works are generally undertaken during construction and aim to redress impacts on the landscape as part of the construction process. Reinstatement is undertaken as soon as possible following the construction works in each area, such as the reinstatement of road verges, agricultural grasslands and other areas that may be disturbed as a result of the construction process.



# 1 INTRODUCTION

## 1.1 Construction Environmental Management: Aims & Objectives

- 1.1.1 This document provides information relating to environmental management for the Arklow Bank Wind Park (ABWP) Phase 2 Onshore Grid Infrastructure (OGI), here after referred to as the proposed development. This document has been prepared to inform the Planning Authority and statutory consultees of the proposed management methods to be employed during the construction of the proposed development.
- 1.1.2 The principal objective of this document is to provide information on the proposed infrastructure and to detail appropriate measures in the avoidance, minimisation and control of adverse environmental impact associated with the proposed development. Furthermore, this document aims to define good practice as well as detailing specific commitments relating to environmental protection as identified in the Environmental Impact Assessment Report (EIAR) (including appendices) and any planning conditions associated with a future planning consent (refer to **Section 2.2**).
- 1.1.3 The Construction Environmental Management Plan (CEMP) will form part of the *OGI Works Contract* (hereafter, the *Contract*). 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*.
- 1.1.4 This version of the CEMP 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 period. The CEMP will be a key construction contract document, which will ensure that all mitigation measures, which are considered necessary to protect the environment, are implemented.
- 1.1.5 The *Contractor* submits all relevant information as detailed in this document to the *Employer* for acceptance in accordance with the contract provisions. No construction works commence prior to the *Employer's* acceptance. Once approved, the *Employer* provides the *Contractor* with an electronic copy of the final CEMP which the *Contractor* maintains for the duration of the works (i.e. CEMP Version 2.0).
- 1.1.6 This document is read and implemented onsite in conjunction with industry good practice, published guidance documents, and other documents referred to within the CEMP (**Section 13**).
- 1.1.7 A **Checklist** has been included in **Section 14**, providing the *Contractor* with a summary of the minimum information to be provided to the *Employer* pre-, during and post-construction.

## 2 PROJECT INFORMATION

### 2.1 Overview of Arklow Bank Wind Park Phase 2

- 2.1.1 The Arklow Bank Wind Park (ABWP) is an offshore wind farm, located off the coast of County Wicklow, on the east coast of Ireland. A Foreshore Lease was granted for the development of a wind park on the Arklow Bank in 2002. Arklow Bank Wind Park Phase 1 was constructed in 2003 – 2004 consisting of seven wind turbines. Phase 1 is owned and operated by Arklow Energy Limited under a sublease to the Foreshore Lease. Sure Partners Limited (SPL), a wholly owned subsidiary of SSE plc (SSE), is now proposing to develop the remainder of ABWP, Arklow Bank Wind Park Phase 2, hereafter referenced as the Project.
- 2.1.2 The proposed development forms part of the overall Arklow Bank Wind Park Phase 2 Project. This Project comprises three distinct elements:
1. Offshore Infrastructure;
  2. Onshore Grid Infrastructure - the proposed development to which this CEMP relates; and
  3. Operations and Maintenance Facility (OMF)

### 2.2 Proposed Development

- 2.2.1 The proposed development, which is the subject of this CEMP, comprises the Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure (OGI) to be developed as part of the Project. The proposed development will comprise:
- Landfall for two offshore export circuits from the High Water Mark (HWM) to two Transition Joint Bays (TJB) at Johnstown North, located approximately 4.5km northeast of Arklow Harbour,
  - Connection by two underground 220kV high voltage alternating current circuits, and fibre optic cables over a distance of c. 6km, from the landfall to the new onshore 220kV substation,
  - A new onshore 220kV substation, to be located at Shelton Abbey, north of the Avoca River, approximately 2.1km northwest of Arklow town consisting of two connected compounds:
    1. The transmission compound with the infrastructure to physically connect to the National Electricity Transmission Network (NETN), and
    2. The connection compound with the infrastructure to allow the connection of the wind farm in accordance with EirGrid grid code requirements.
  - Flood defence improvement works to the existing Avoca River Business Park flood defences located c. 500m west of the substation site;
  - A 220kV overhead power line connection from the new 220kV substation at Shelton Abbey to the existing 220kV transmission network located c. 200m from the substation site.

### 2.3 Planning Conditions and Commitments Register

Following receipt of planning consent, if granted, this CEMP will be updated following the appointment of the contractor, and prior to commencing the works on site. A draft Commitments Register has been prepared and included in **Appendix A**, detailing the commitments made in the EIAR (based on the Summary of Mitigation and Monitoring Measures in the EIAR); planning conditions will be included in the register post-consent. Therefore, adherence to the measures described in the CEMP will ensure compliance with the planning consent as far as environmental management is concerned (pre-construction and construction phase). The Commitments Register forms part of the *Contractor's* and *Employer's* compliance checks throughout the phases of the proposed development.

### 3 RESPONSIBILITIES, CORRESPONDENCE & GENERAL COMMUNICATION

#### 3.1 Roles & Responsibilities

- 3.1.1 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*.
- 3.1.2 The *Contractor* is responsible for obtaining all necessary consents, licences and permissions for all activities as required by current legislation governing the protection of the environment.
- 3.1.3 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*.
- 3.1.4 A copy of this CEMP and related files (e.g. Waste Transfer Notes) will be kept in the site offices for the duration of the construction phase and will be made available for review at any time. Upon completion of the construction works, the *Contractor* submits a complete digital copy of the final set of information to the *Employer* for their records. This information will include electronic scans of all relevant hard copy reports, data, field records and correspondence which are generated over the course of the construction phase, including the records highlighted in **Section 3.8** below.
- 3.1.5 Where the *Contractor* has standard documents within its own Environmental Management System or Environmental Management Plan, that cover a particular requirement of this CEMP, they will either be inserted or cross-referenced within the relevant section of the final CEMP.
- 3.1.6 The *Contractor* ensures that the Environmental (Ecological) Clerk of Works (ECoW) is timeously informed of all site activities, including all programme changes, to ensure advanced checks and monitoring can be arranged. This extends to any preliminary works.
- 3.1.7 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*.

### 3.2 Contractor's Environmental Manager

- 3.2.1 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, deals with drainage maintenance, 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.

### 3.3 Environmental Clerk of Works (ECoW)

- 3.3.1 The *Employer* appoints an appropriately qualified and competent environmentalist or ecologist as **Environmental Clerk of Works (ECoW)** to manage and ensure *Contractor* compliance with this CEMP.
- 3.3.2 The ECoW will have a minimum of 5 years of relevant site experience and will be a full-time role for the duration of site activities. Thereafter the role may be part-time, subject to ongoing compliance of site activities with the CEMP (refer to **Section 3.3.3** below for ECoW responsibilities). For ECoW powers in relation to halting works refer to **Section 3.1** above.
- 3.3.3 The ECoW undertakes relevant environmental tasks / training prior to and during the construction works. Fundamentally, the ECoW shall 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 **Sections 5 and 6** herein.
  - **Monitoring implementing habitat and species protection measures** in accordance with the CEMP, including pre-construction verification checks and implementing demarcation measures. Refer to **Section 10** for specific details / tasks.
  - **Developing a positive environmental culture** via training and engagement with site management and, importantly, site operatives to increase awareness and promote timeous remediation / reporting.
  - **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.

### 3.4 Geotechnical Engineer

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

### 3.5 Community Liaison Officer

- 3.5.1 The Community Liaison Officer will be appointed by the *Contractor* and will be responsible for managing tasks such as the following:
- Alerting neighbouring residents of the works or particular activities commencing in their area

- Briefing neighbours on progress and issues likely to affect them, such as traffic management measures, as necessary;
- Liaison with Wicklow County Council and emergency services as appropriate; and
- Liaison with local Gardaí, particularly in relation to traffic movements and permits where necessary.

### 3.6 Community Engagement Manager

- 3.6.1 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 Community Liaison Officer.

### 3.7 Archaeological Consultant

- 3.7.1 The Archaeological Consultant will be appointed by the *Employer* to undertake a programme of archaeological testing in advance of construction.

### 3.8 Correspondence, Records & Reporting

- 3.8.1 The *Contractor* provides a complete record of all relevant communication and reports associated with all aspects of environmental management and implementation of this document. As a guide, the following records will be maintained:
- *Minutes and attendance record* of start-up meeting (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** – this includes the following components:
    - 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*, as defined in **Section 7** and **Appendix C** herein.
  - *Water Quality Monitoring Records*, documenting the *Contractor's* visual checks of waterbodies and water quality monitoring as outlined in **Section 5**.
  - *Licences and Consents* - copies of all permissions, consents, licenses and permits, including related correspondence.
  - *General Correspondence* - all other relevant internal and external communication records relating to environmental management issues and implementation of the CEMP.

### 3.9 Site Induction

- 3.9.1 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.
- 3.9.2 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:
    - i. species and / or habitat protection requirements, e.g. ecological exclusion zones and contact details for the ECoW;
    - ii. archaeological safeguarding measures, e.g. requirements for watching brief and contact details for the project ACoW;
    - iii. pollution prevention and protection of the water environment (e.g. silt mitigation measures and refuelling);
    - iv. waste management (including littering); and
    - v. plant service and repair procedures, specifically service location and the disposal of waste oils and service components.
  - Environmental Incident and Emergency Response Plan.
- 3.9.3 The *Contractor* provides an **Environmental Risk Map** illustrating environmentally sensitive areas and potential sources of pollution (e.g. water buffers, 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. In accordance with **Section 3.10**, any update will trigger a toolbox talk to clearly communicate the change and offer opportunity for any necessary clarifications.

### 3.10 Training and Toolbox Talks

- 3.10.1 During construction, in order to provide on-going reinforcement and awareness training, the above topics, along with any other environmental issues which arise onsite, will be discussed at regular toolbox talks.
- 3.10.2 Toolbox talks and training will be delivered by specialist personnel onsite (e.g. ECoW) as required.
- 3.10.3 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 - shall be consistent with the programme of works. Additional toolbox talks shall be added as required based on circumstances such as unforeseen risks, repeated observation of bad practices, perceived lack of awareness, pollution event, etc.
- 3.10.4 Specifically, the *Contractor* provides, as a minimum, the following environmental training by competent staff/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/subcontractor changes etc);
  - Training on silt mitigation e.g. installation of silt fencing etc., silt mitigation measures to relevant construction / site staff; and
- 3.10.5 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.

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

### 3.11 Environmental Audits

3.11.1 The *Contractor* undertakes a programme of environmental audits, including audits of his sub-contractors, on a quarterly basis and provides an audit report to the *Employer* within 2 weeks of the audit being undertaken.

3.11.2 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.

3.11.3 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.

### 3.12 Risk Assessment and Method Statements

3.12.1 The *Contractor* provides risk assessments and method statements (RAMS) for all works and tasks prior to these being undertaken. These documents take into account and address all of the environmental aspects of the planned works and will include proposed mitigation measures, provided to the ECoW at least one week in advance of such works starting.

### 3.13 Notice Boards

3.13.1 The *Contractor* provides and maintains project environmental notice board(s) which are positioned to ensure that all operatives have the opportunity to review a notice board on a daily basis. As a minimum this will include one notice board in each of the site compounds.

3.13.2 The environmental notice boards are maintained by the *Contractor* and will be updated at least monthly. 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 Environmental Incident and Emergency Response Plan (EIERP, refer to **Section 6**).



TABLE 3.1 CONTACTS SHEET				
(Table to be completed by <i>Employer</i> and <i>Contractor</i> prior to commencement. This table will be updated and kept current by the <i>Contractor</i> for the duration of the Contract)				
COMPANY	POSITION	NAME	TEL / MOBILE NO.	E-ADDRESS
Sure Partners Limited	Project Manager	TBC		
Sure Partners Limited	Construction Manager	TBC		
Sure Partners Limited	Site Supervisor	TBC		
Sure Partners Limited	Community Engagement Manager	TBC		
Sure Partners Limited	SPL Civil Engineer	TBC		
Contractor – tbc	Contractor's Project Manager	TBC		
Contractor – tbc	Site Agent	TBC		
Contractor – tbc	Foreman	TBC		
Contractor – tbc	Environmental Manager	TBC		
Contractor – tbc	Geotechnical Engineer	TBC		
Contractor – tbc	Community Liaison Officer	TBC		
TBC	Environmental Clerk of Works (ECoW)	TBC		
TBC	Archaeological Consultant	TBC		
Wicklow County Council		TBC		
National Parks and Wildlife Service (NPWS)		TBC		
Inland Fisheries Ireland IFI		TBC		
Specialist Emergency Contractor (specify)	TBC	TBC		

TABLE 3.2  
MAIN TASKS AND RESPONSIBILITIES – CONSTRUCTION PHASE

Task	Contractor							Employer				ECoW	Visitors
	Project Manager	Site Agent	Site Foreman	Environmental Manager	Geotechnical Engineer	Community Liaison Officer	Sub-Contractors	Project Manager	Construction Manager	Community Engagement Manager	Site Supervisor		
Provide information (in accordance with contractual timelines)	☑												
Start Up Meeting	✓	x	x	x	x	x	(x)	☑	✓	x	x	x	
Site Inductions	☑	✓	x	✓	x		x	(x)	x		(x)	✓	x
Obtaining all relevant permissions, consents, licenses and permits	☑			✓								✓	
Weekly progress meetings including <i>Contractor, Employer, Geotechnical Engineer, Environmental Specialist/Manager/Engineer</i> updates/issues	☑	x	(x)	✓	(x)	(x)	(x)	(x)	x	(x)	✓	✓	
Monthly or weekly Environmental Log / Report												☑	
Liaison with regulator / statutory consultees	☑			✓					✓			✓	
Liaison with neighbours, Garda and Wicklow County Council						☑				☑			
Environmental checks and monitoring (e.g. dust, oils and chemicals storage, drainage mitigation, waste management, plant etc)	✓	☑	☑	✓	✓		✓		✓		✓	☑	
Environmental monitoring and analysis (Water Quality Monitoring Plan)		✓		✓								✓	
Ecological inspections and monitoring and compliance checks	✓	✓	✓				✓					☑	
Record keeping (e.g. waste documentation, licences, training, incidents, mitigation designs, material, waste and risk registers etc)	☑			✓	✓			☑	✓		✓	☑	
Environmental audits / 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 the main tasks / responsibilities. Following agreement between the *Employer*, the *Contractor*, tasks/responsibilities may be re-assigned.

## 4 COMMUNITY LIAISON PLAN

### 4.1 Community Liaison Plan

- 4.1.1 SPL recognises the importance of effective community liaison in order 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, this Community Liaison Plan has been prepared. The purpose of this plan is to ensure good relations with the neighbouring community. Key aims of the Plan are to:
- 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.
- 4.1.2 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, businesses, community resources and specific vulnerable groups.
- 4.1.3 Communication with the local community, Wicklow 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 Community Liaison Officer on all aspects of community engagement. The Community Liaison Plan will be updated by the contractor prior to construction, in consultation with the Community Engagement Manager, and will specify obligations in relation to community and stakeholder engagement that the contractor must adhere to. Where communications are related to environmental issues, the environmental manager will be involved, if appropriate.
- 4.1.4 A significant part of the plan 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.
- 4.1.5 With regard to liaison, the contractor will be required to comply with the Plan and develop it further with additional information, which will include providing 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.
- 4.1.6 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 additional details will include the following:
- Contractor's community relations policy;
  - Personnel nominated to manage community relations;
  - A methodology for processing observations, queries and complaints from the general public, relevant authorities, the media and emergency services; and
  - The strategy for project-wide liaison with all relevant parties.
- 4.1.7 The contact details for the Community Liaison Officer 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

- 4.2.1 The contractor will ensure that local 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.
- 4.2.2 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

- 4.3.1 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 Wicklow County Council. All observations, queries and complaints will be dealt with in a timely manner.
- 4.3.2 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 environmental manager will be responsible for informing Wicklow County Council, relevant stakeholders and statutory bodies, as appropriate, about such issues.

## 5 GENERAL SITE MANAGEMENT AND POLLUTION PREVENTION & MITIGATION

### 5.1 Responsibility

- 5.1.1 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.
- 5.1.2 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.
- 5.1.3 It is the responsibility of the *Contractor* to contact the relevant statutory and non-statutory bodies e.g. Inland Fisheries Ireland (IFI), and stakeholders in the vicinity of and downstream of the proposed development, so that the requirements and interests of these parties are adhered to and protected throughout the duration of the Contract.
- 5.1.4 Prior to works commencing on site, the *Contractor* prepares a **Pollution Prevention Plan (PPP)** in line with the **below requirements** (as a minimum) and communicates the contents to all staff (induction / toolbox talks). The PPP covers all potentially polluting activities, taking into account good practice standards<sup>1</sup>. The *Contractor* provides the PPP to the *Employer* prior to start of works on site.
- 5.1.5 The *Contractor* monitors adherence to the plan throughout the works. The *Contractor* communicates the PPP and any changes/updates of the PPP to all personnel on site.

### 5.2 Good Housekeeping and General Pollution Prevention Measures

- 5.2.1 The *Contractor* will ensure "good housekeeping" at all times. The following points (not exhaustive) indicate general pollution prevention measures in accordance with published guidance (**Section 13**) and project commitments. Pollution prevention measures relating to specific tasks are also detailed in the respective sections of this document.
- 5.2.2 This will include, but not necessarily be limited to, the following measures:
- 5.2.3 General maintenance of working areas and cleanliness of welfare facilities and storage areas;
- 5.2.4 Provision of site layout map showing key areas such as first aid posts, spill kits, material and waste storage and welfare facilities;
- 5.2.5 Maintaining all plant, material and equipment required to complete the construction work in good order, clean, and tidy;
- 5.2.6 Keeping construction compounds, access routes and designated parking areas free and clear of excess dirt, rubbish piles, scrap wood, etc. at all times;
- 5.2.7 Provision of signs giving details of site management contact numbers, including out of hours, and public information at the boundaries of the working areas;
- 5.2.8 Provision of adequate welfare facilities for site personnel;

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<sup>1</sup> Refer to Section 13 for relevant documents

- 5.2.9 Installation of appropriate security, lighting, fencing and hoarding at each working area;
- 5.2.10 Effective prevention of oil, grease or other objectionable matter being discharged from any working area;
- 5.2.11 Provision of appropriate waste management at each working area and regular collections to be arranged;
- 5.2.12 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;
- 5.2.13 Maintenance of wheel washing facilities and other contaminant measures as required in each working area;
- 5.2.14 No discharge of site runoff or water discharge without agreement of the relevant authorities;
- 5.2.15 Prohibition of open fires at all times;
- 5.2.16 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;
- 5.2.17 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;
- 5.2.18 All loading and unloading of vehicles will take place off the public highway wherever this is practicable; and
- 5.2.19 Material handling and/or stockpiling of materials, where permitted, will be appropriately located 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.

### 5.3 Hours of Work

- 5.3.1 The core construction working hours for the proposed development will be:
  - 7am to 7pm from Monday to Saturday; with the potential for some works taking place outside these hours, including:
    - Equipment lifts over the Arklow to Gorey rail line near the substation site for health and safety and Irish Rail compliance purposes;
    - HDD works will occur 24 hours a day, 7 days a week as required; and
    - Commissioning and pre-commissioning may also take place 24 hours per day, seven days per week
- 5.3.2 All rock breaking/fracturing activities, pile driving and breaking out of existing concrete will be undertaken during daytime hours. 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.
- 5.3.3 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. Excepted as noted in **Section 5.3.4** below, the use of plant or machinery likely to cause disturbance, other than for HDD works, will not be permitted outside of

the core working hours.

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

5.3.5 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, Wicklow County Council will be informed as soon as reasonably practicable of the reasons and likely duration and timing.

### 5.4 Site Security

5.4.1 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;
- Consultation with neighbouring properties and local crime prevention officers including Wicklow 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.

### 5.5 Hoarding and Fencing

5.5.1 A site boundary in the form of temporary hoarding will be established around each of the temporary construction compounds with hoarding or fencing used around each of the working areas. These will be established before any significant construction activity commences.

5.5.2 For the temporary construction compounds (HDD, substation and temporary cable construction compounds), the hoarding will be generally be a minimum 2m high in order to provide a secure boundary to prevent unauthorised access and delineate the works.

5.5.3 The hoarding will be typical of that used on most construction sites. Mounting posts will be erected by using a mini-digger and the posts will be set in concrete. Other working areas and site access routes will typically use a mix of fencing and other appropriate safety barriers, as these types can be more readily re-configured and re-used between working areas as the construction activities progress.

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

- Adequate fencing and hoardings will be installed to prevent unwanted access to temporary compounds and working areas and provide noise attenuation, screening, and site security where required;

- 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 fences may 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;
- Notices to warn of hazards on site such as deep excavations, construction access will be installed on site boundaries; and
- Hoarding and fencing will be maintained free of graffiti or posters;

5.5.5 Notwithstanding the fencing and hoarding, existing walls, fences, hedges and earth banks will be retained, where feasible. Additional fencing will be provided for tree protection where required.

### 5.6 Services and Lighting

5.6.1 Services and Utilities – site services will be installed as part of the enabling works in parallel with the rearrangement and diversion of existing utilities. Working areas will be powered preferably by mains supplies and by diesel generators where an electrical supply is not available.

5.6.2 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.

5.6.3 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.
- Refer also to **Section 10.4** below in relation to lighting.

5.6.4 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.

5.6.5 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.

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

5.6.7 Wastewater - sanitary wastewater will be collected and stored on site in holding tanks, which will



be emptied on a regular basis (typically bi-weekly) by licensed contractors and disposed of appropriately.

- 5.6.8 Wheel Wash - 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. Alternatively, a “dry” wheel wash will be used, which relies on mechanical vibration of the vehicle wheels and chassis to loosen and remove mud and debris.
- 5.6.9 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.
- 5.6.10 Works requiring multiple vehicle deliveries, such as concrete pours, will be planned so as to ensure queuing on the public roads around the working areas will be avoided as far as is practical.
- 5.6.1 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.

## 5.7 Reinstatement of Working Areas on Completion

- 5.7.1 The *Contractor* will reinstate all working areas and access routes 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.
- 5.7.2 Following the excavations required for the cable route along with all other associated works during construction, the temporary cable construction corridor will be reinstated to its original condition as far as practicable with the replacement of excavated materials where appropriate. If the excavated materials are not suitable for re-use, then equivalent materials may be imported for reinstatement. Acceptable materials for import may include materials classified as by products from excavations in natural soils under Regulation 15 of S.I. No. 323/2020 – European Union (Waste Directive) Regulations 2020.

## 5.8 Fuels and Oils

- 5.8.1 The *Contractor* prepares and adheres to a **Fuel Management Protocol** in line with the below requirements (as a minimum) and communicates the contents to all staff (induction / toolbox talks).

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### Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure

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- 5.8.2 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;
- 5.8.3 No refuelling or fuel storage within 50m of waterways and only on a sealed surface;
- 5.8.4 Emergency spill kits will be retained onsite at sensitive locations, with portable kits provided to plant and equipment operators; A detailed spillage procedure, as part of the Environmental Incident and Emergency Response Plan, 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, Wicklow County Council, Inland Fisheries Ireland and the NPWS shall be notified. A set of standardised emergency response procedures will govern the management of emergency incidents, see Environmental Incident and Emergency Response Plan in **Section 6**.
- 5.8.5 The *Contractor* ensures that:
- Fuel 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;
  - Procedures and contingency plans are set up to deal with emergency accidents or spills;
- 5.8.6 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, 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.
  - Warning notices including “No smoking” and “Close valves when not in use” shall also be displayed.
- 5.8.7 Irrespective of the location of refuelling onsite, **interceptor drip trays** (or similar, e.g. plant nappies, – open metal drip trays are not acceptable) shall 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 shall take place over drip trays.
- 5.8.8 Plant, site vehicles and machinery shall be checked daily and are to be well-maintained. Any machinery leaking fluids must be repaired or removed from site immediately. Any servicing operations shall take place at least 50m from watercourses (unless servicing is required at the

point of breakdown) and over interceptor drip trays.

- 5.8.9 The *Contractor* identifies a specialist clean-up contractor (see **Table 3.1**) 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 Environmental Incident and Emergency Response Plan (**Section 6**).

### 5.9 Suspended Sediment and Adverse Weather

- 5.9.1 The *Contractor* shall ensure that all works are in accordance with Construction Industry Research and Information Association (CIRIA) guidance – Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors (Masters-Williams et al, 2001).
- 5.9.2 To minimise the potential for elevated silt levels in surface water run-off, the working area used during construction will be clearly outlined prior to the commencement of works and will be kept to the minimum area necessary to effectively complete the works. Vegetation will be retained where possible.
- 5.9.3 Rainfall and associated surface run-off readily mobilise sediment and silt when draining through areas of construction. The *Contractor* ensures that untreated construction run-off is prevented from flowing into watercourses.
- 5.9.4 The *Contractor* shall ensure that no materials will be stored in flood plains or in areas which would impede flood flow paths;
- 5.9.5 Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe run-off and prevent ponding and flooding;
- 5.9.6 Silt traps will be employed and maintained in appropriate locations;
- 5.9.7 Temporary interception bunds and drainage ditches will be constructed up slope of excavations to minimise surface runoff ingress and in advance of excavation activities;
- 5.9.8 Excavation and earthworks will be suspended during and immediately following periods of heavy rainfall to minimise sediment generation and soil damage;
- 5.9.9 For the cable route, the only section of trench that will be open is that which is being excavated and in which ducts are being installed. Excavated cable trenches will be backfilled as the works progress, as soon as installation is complete, and any cement bound surround material has cured sufficiently;
- 5.9.10 Any groundwater or rainwater that collects in a cable trench will be pumped to locations agreed with the landowners and local authorities. Typically, this will be onto adjacent land, not directly into waterways, and through a filter medium, to avoid the build-up of silt, as some granular material will, inevitably, be pumped out with the water. The pump flowrates will match that of the water flowing into the trench, as it must be kept generally free of water. A single pump with a 75mm hose will usually be adequate to deal with rainwater running into a trench. A similar arrangement will apply at joint bays, where a sump will be cast into the concrete base for a pump.
- 5.9.11 At the landfall, if field drains are temporarily diverted, the *Contractor* shall put in place facilities to over pump the water into a settlement pond to limit silt discharge into the field drain downstream;
- 5.9.12 All works will be closely monitored and will be enclosed by silt barriers (e.g. straw or silt fence) to prevent any runoff into surface water bodies.

- 5.9.13 Silt pollution caused by working in surface water will be minimised or prevented by keeping water out of the works area using appropriate isolation techniques, such as cofferdams, flume pipes and by-pass channels.
- 5.9.14 **Adverse weather** (rainfall, snowmelt) may result in increased sediment run-off and pollution of watercourses. Weather warnings will be monitored during construction to ensure that there is no flood risk to construction workers installing the cable ducts. A risk assessment will be carried out in the case of a weather warning to determine what works can proceed, and what works need to be postponed;
- 5.9.15 The requirement to temporarily suspend aspects of the *works* can be enforced by the *Contractor*, the ECoW or the *Employer*.

## 5.10 Concrete

- 5.10.1 All concrete mixing and batching activities will be located in areas away from watercourses and drains;
- 5.10.2 Concreting works will be carried out in dry conditions where possible and concrete works will be strictly controlled and monitored; and
- 5.10.3 No concrete washout will be allowed to discharge to watercourses. Wash out of concrete trucks will only be permitted where the *Contractor* has provided a designated, suitably prepared wash-out area.

## 5.11 HDD Operations and Frac-Out Contingency Measures

- 5.11.1 The *Contractor* shall implement a number of specific measures with respect to HDD operations at the landfall and the relevant crossings along the cable route, as detailed below.
- 5.11.2 Any groundwater or rainwater that collects in the HDD drilling pit will be pumped away. Then it will be discharged onto the adjacent land, not directly into a waterway, and through a filter medium. This will avoid the build-up of silt, as some granular material will, inevitably, be pumped out with the water from the trench.
- 5.11.3 The *Contractor* and the ECoW will monitor weather conditions as detailed in **Section 5.9.14** and will carry out daily inspections of the mud pit to ensure the volume of the mud pit does not 'overtop' to the surrounding land. Where required, measures such as pumping to secure containment will be used where required to prevent overtopping.
- 5.11.4 Any bentonite (or similar HDD drilling head lubrication material) will be handled and removed by the drilling contractor. The volume of bentonite (or similar material) will be determined by the ground conditions encountered and length of HDD. Typically for a land-based HDD rig, the volume of bentonite would be approximately 10m<sup>3</sup> per HDD bore, and for the landfall and M11 HDD rig, the volume of bentonite would be approximately 22.5m<sup>3</sup> per HDD bore.
- 5.11.5 Any bentonite (or similar HDD drilling head lubrication material) will be handled and removed by the drilling contractor. Typically, bentonite is used, which comprises 95% water and 5% bentonite clay which is a non-toxic, natural substance. HDD will be a closed system, with drilling fluid recirculated, the drill cuttings recovered, and drilling fluid reused;
- 5.11.6 In order to eliminate the migration of drilling fluids through the subsurface to waterbodies the

following measures will be employed:

- Drilling pressures will be closely monitored and not exceed those needed to penetrate the formation.
- Exit and entry points for the HDD on land (exit point for landfall HDD is on seabed) will be enclosed by silt barriers (e.g. straw or silt fence) to prevent any runoff into surface water bodies.
- If pressure drops during drilling or if there is a lack of returns the drilling will stop immediately to allow an assessment of a potential leakage of drilling fluid into the surrounding formation. A leak stopping compound, such as mica, may be used to prevent the leak from migrating further into the formation. If the leak stopping compound is not successful, the drilling direction may need to change to avoid the area where the leak occurred.

5.11.7 While the bentonite drilling fluid is non-toxic and can be commonly used in farming practices, if sufficient quantity enters a watercourse it can potentially settle on the bottom, smothering benthic flora and affecting faunal feeding and breeding sites. The drilling contractor will develop a location specific HDD frac-out contingency plan, detailing measures to be taken to reduce the risk of bentonite breakout and measures to be taken for the protection of sensitive ecological receptors, should a breakout occur.

5.11.8 A typical procedure for managing a breakout or frac-out on land would include:

- Stop drilling immediately;
- Contain the bentonite by constructing a bund e.g. using sandbags;
- Recover the bentonite from the bund by pumping to a suitable container or back to the entry pit for recycling;
- If necessary, inert and non-toxic lost circulation material (mica) will be pumped into the bore profile, which will swell and plug any fissures;
- The area will be monitored closely to determine if the breakout has been sealed;
- Check and monitor mud volumes and pressures as the works recommence.

5.11.9 A typical procedure for managing a breakout or frac-out under water would include:

- Stop drilling immediately;
- Pump lost circulation material (mica), which will swell and plug any fissures;
- Check and monitor mud volumes and pressures as the works recommence;
- Repeat process as necessary until the breakout has been sealed.

5.11.10 Any bentonite will be managed and removed by the specialist drilling contractor on completion of the operation. Water will be brought to site in tankers (to make up drilling fluid) for lubrication of the bore and to provide the requisite volumes of water to the compound. The water used will be non-saline and non-potable water.

5.11.11 The total volume of water required is estimated to be up to 450m<sup>3</sup> for each HDD bore at the landfall and M11 HDD, and 200m<sup>3</sup> for each HDD bore at the R772 HDD, assuming full drilling fluid returns are maintained. On completion of the operation the drill fluid will be disposed of to an appropriately licensed facility.

#### 5.12 Noise

- 5.12.1 Noise and vibration will be minimised through the adoption of good industry practice as standard working practices across the site to ensure that noise and vibration are reduced whenever practicable. The following provisions, although not exhaustive, will be adhered to where practicable throughout the construction programme:
- 5.12.2 Vehicles and mechanical plant used for the purpose of the works will be fitted with effective exhaust silencers, maintained in good and efficient working order, and operated in such a manner as to minimise noise emissions. The *Contractor* will ensure that all plant complies with the relevant statutory requirements;
- 5.12.3 Machines in intermittent use will be shut down or throttled down to a minimum when not in use;
- 5.12.4 Compressors will be fitted with properly lined and sealed acoustic covers which will be kept closed whenever in use. Pneumatic percussive tools will be fitted with mufflers or silencers;
- 5.12.5 Equipment which breaks concrete, brickwork or masonry by bending, bursting or “nibbling” will be used in preference to percussive tools. Where possible, the use of impact tools will be avoided where the site is close to occupied premises;
- 5.12.6 Rotary drills and bursters activated by hydraulic, chemical, or electrical power will be used for excavating hard or extrusive material;
- 5.12.7 Wherever possible, equipment powered by mains electricity will be used in preference to equipment powered by internal combustion engine or locally generated electricity;
- 5.12.8 No part of the works nor any maintenance of plant will be carried out in such a manner as to cause unnecessary noise except in the case of an emergency when the work is absolutely necessary for the saving of life or property or the safety of the works;
- 5.12.9 Plant will be maintained in good working order so that extraneous noise from mechanical vibration, creaking and squeaking is kept to a minimum; and
- 5.12.10 Noise emitting machinery which is required to run continuously will be housed in a suitable acoustically lined enclosure.
- 5.12.11 Monitoring of noise levels at the construction site boundary will be undertaken to identify where work procedures need to be modified. In the event of a valid complaint a noise monitoring protocol will be submitted to Wicklow County Council prior to commencement of any noise monitoring. The protocol will include details of:
- A description of the complaint;
  - Construction activities taking place at the time of the complaint;
  - Noise monitoring methodology and results; and
  - Any actions taken.
- 5.12.12 Prior to construction works being undertaken, liaison will be undertaken with occupiers of sensitive receptors that may be adversely affected by construction noise and vibration. Providing information on the timing and durations of construction works at night and why they are required to be undertaken at night can reduce adverse effects. All communications will contain contact details to direct any questions or complaints to.

### 5.13 Dust

- 5.13.1 The *Contractor* will implement the Community Liaison Plan, that includes community engagement, before work commences on site.
- 5.13.2 The *Contractor* shall record all dust and air quality incidents, complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- 5.13.3 The *Contractor* shall hold regular liaison meetings with other construction sites within 500m to the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.
- 5.13.4 The *Contractor* will undertake on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to Wicklow County Council on request. The frequency of the inspections will be increased during site activities with a high potential to produce dust are being carried out.
- 5.13.5 The *Contractor* ensures an adequate supply of water for dust suppression. Where applicable, the *Contractor* is responsible for following statutory guidance and/or obtaining necessary permissions for water for use in dust suppression. The water supply for dust suppression will be defined by the *Contractor*. The *Contractor* utilises water spraying for dust suppression on site as required<sup>2</sup>. The *Contractor* obtains all necessary permits and licences as required the supply of water for the purposes of dust suppression on site.
- 5.13.1 The *Contractor* ensures no mud or debris accumulates on the public road and the *Contractor* cleans the public road of any mud, dust or debris by suitable means. Water-assisted dust sweeper(s) are to be used on the access and local roads, to remove, as necessary, any material tracked out of the site.
- 5.13.2 The *Contractor* shall ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport and shall implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- 5.13.3 In relation to the substation and the remediation strategy proposed, the *Contractor* shall ensure that dust generation and dermal exposure during site construction works, until the made ground is capped, will be controlled by appropriate dust control measures e.g. water sprays and suitable personal protective equipment. Where the asphalt layer is being removed, this will occur in phases and the asphalt will be replaced with granular fill as soon as possible to prevent the generation of windblown dust.
- 5.13.4 To minimise the generation of dust emissions to air, the *Contractor* implements the following measures:
- Prepare and maintain the site appropriately, planning site layout so that machinery and dust causing activities are located away from receptors, as far as possible
  - Erect a 2m minimum site hoarding around construction compounds
  - Keep site fencing, barriers and scaffolding clean using wet methods
  - Cover, seed or fence stockpiles to prevent wind whipping.

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<sup>2</sup> <https://www.hse.gov.uk/copd/casestudies/dustsuppression.htm>



- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation.
- Use enclosed chutes and conveyors and covered skips
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate
- Ensure equipment and spill kits are readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods
- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable
- Only remove the cover in small areas during work and not all at once
- Completes regular equipment checks, including the inspection of relevant plant and vehicle parts to ensure they are maintained in a good state of repair and are fitted with appropriate dust suppressant measures (e.g. water supply for cutting tools etc.).
- Access gates to be located at least 10m from receptors where possible.
- Ensures all material (especially fine-powders, e.g. cement) are appropriately contained and stored.

#### 5.14 Hazardous Materials

- 5.14.1 At the substation, the *Contractor* will undertake surveys to identify the risk of asbestos on site. Although unlikely, given ground investigations to date, if asbestos is uncovered on site during construction, it will be double-bagged and removed from site by a competent contractor and disposed of in accordance with the relevant procedures and legislation.
- 5.14.2 The *Contractor* is responsible for ensuring that any hazardous materials (e.g. fuels, oils, paints, chemicals, cement bound granular mixtures etc.) brought to site are accompanied by a Safety Data Sheet (SDS)<sup>3</sup>.
- 5.14.3 The *Contractor* is responsible for carrying out a risk assessment of each substance and ensuring that all appropriate storage, protective equipment and if necessary, emergency procedures are put in place on site as required by the SDS, the risk assessment and relevant regulations (COSHH Regs, Control of Substances Hazardous to Health).
- 5.14.4 All hazardous materials must be stored in appropriate containers, must be indelibly and legibly labelled to identify the contents, hazards and precautions required.
- 5.14.5 Hazardous materials on site must be stored in a bunded area and in accordance with the relevant Safety Data Sheet and risk assessment, which must be readily available and up to date.
- 5.14.6 Any spent (contaminated) spill kits, absorbent granules, sheets or fibres must be disposed of in accordance with relevant regulations and the Construction Waste Management Plan (see Appendix C).

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<sup>3</sup> In accordance with REACH Regulation (Regulation (EC) No. 1907/2006)



#### 5.15 Traffic

- 5.15.1 A Construction Traffic Management Plan (CTMP) has been prepared and is included in Appendix B. This CTMP will be updated by the *Contractor* prior to construction to take account of any specific consent conditions and requirements of the Planning Authority. The *Contractor* will agree the CTMP with Wicklow County Council and An Garda Síochána and will fully implement the CTMP.

#### 5.16 Pollution Monitoring & Controls

- 5.16.1 The *Contractor* carries out regular (at least monthly) inspections of oil/fuel storage areas, plant and machinery, and the PPP. An inspection sheet together with information on inspection frequency and the relevant responsible *Contractor's* representative for undertaking these inspections will be recorded by the *Contractor* and communicated to the *Employer* prior to commencement of the works.
- 5.16.2 Regular onsite meetings will be held to confirm the appropriate use of mitigation measures identified within the *Contractor's* environmental documents relating to pollution control. These meetings will highlight any further issues / measures which may be relevant either prior to commencement or during the works.
- 5.16.3 Dust monitoring will be undertaken at the three nearest sensitive receptors (with agreement from the landowner) to the works during the construction phase. The TA Luft dust deposition limit values of 350 mg/m<sup>2</sup>/day applied as a 30-day average.
- 5.16.4 Visual monitoring will be undertaken as part of the regular site audits during the construction of the proposed development to ensure existing surface water drainage runoff and natural infiltration to ground is not affected by the proposed development.
- 5.16.5 A monitoring regime/programme for water quality will be put in place. Turbidity monitoring will be carried out downstream, within 20m of the crossing, while works are underway at the Templerainy, Kilbride River and Johnstown North watercourse crossings to ensure that sediment levels are not significantly elevated above baseline levels.
- 5.16.6 The *Contractor* is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials. Particular regard will be given to trench excavations and other works which may be vulnerable to the generation or conveyance of run-off, and for the protection of site personnel, plant and equipment in flood prone areas.
- 5.16.7 All flood defence improvement works will be appropriately monitored and supervised and will be enclosed by silt barriers (e.g. straw or silt fence) to prevent any runoff into surface water bodies.
- 5.16.8 Monitoring requirements for noise and vibration are detailed in **Section 5.12** above.

## 6 ENVIRONMENTAL INCIDENT & EMERGENCY RESPONSE

### 6.1 General Requirements

- 6.1.1 The *Contractor* prepares a detailed **Environmental Incident and Emergency Response Plan (EIERP)**. The EIERP contains details of emergency scenarios and relevant procedures and actions that will apply.
- 6.1.2 The *Contractor* communicates the EIERP as part of the site induction to all staff and visitors.
- 6.1.3 The *Contractor* ensures the EIERP contains contact details of relevant staff and external authorities, e.g.
- Environmental Protection Agency (EPA) and EPA 24-hour emergency incident line 1890 33 55 99
  - Inland Fisheries Ireland (IFI) and IFI 24-hour pollution line 1890 34 74 24
  - Specialist clean-up contractor
  - Emergency Services
  - Local Authority Environmental Officers
  - An Garda Síochána
  - National Parks and Wildlife Services
  - The Coast Guard

### 6.2 Safety and Environmental Awareness Reports (SEAR) and Environmental Auditing

- 6.2.1 The *Contractor* completes a SSE Safety and Environmental Awareness Report (SEAR) for all potential (near miss) or actual environmental incident or emergency which occurs on site.

### 6.3 Pollution/Spill Incident

- 6.3.1 The *Contractor* provides a 1-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):
- E.g. 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;
  - Help required i.e. manpower, machinery, expert advice, disposal, etc. and,
  - Whether the spill has reached a watercourse.

6.3.2 The *Contractor* shall, in updating the EIERP, consider the impacts of pollution/spill incidents during construction and shall identify 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 numbers of statutory water undertakers and local water company; and
- List of specialist pollution clean-up companies and their telephone numbers.

### 6.4 Emergency Access

6.4.1 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.

6.4.2 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.

### 6.5 Extreme Weather Events and Flood Risk

6.5.1 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. Refer to **Section 5.9.14** above.

6.5.2 The updated CEMP will include appropriate contingency measures to manage extreme weather events (red weather warnings from Met Éireann), see also **Section 5.9.14**, 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. For example, while the flood risk is very low at the substation site, appropriate contingency measures for construction works adjacent to the Avoca River will be identified.

### 6.6 Fire and Explosion Risk

6.6.1 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.

- 6.6.2 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.

## **7 WASTE MANAGEMENT**

### **7.1 Construction Waste Management Plan (CWMP)**

- 7.1.1 A Construction Waste Management Plan has been prepared and is included in Appendix C. The *Contractor* will update this plan and implement in full.

## 8 SOIL MANAGEMENT MEASURES

### 8.1 Regulatory Compliance and General Measures

- 8.1.1 The *Contractor* shall ensure that the adopted construction techniques will comply with the requirements of statutory bodies (Wicklow County Council and EPA) and construction will be completed in full accordance with the measures set out in this CEMP.
- 8.1.2 Good construction management practices will be employed to minimise the risk of transmission of hazardous materials as well as pollution of adjacent watercourses and groundwater.
- 8.1.3 The construction management of the site will take account of the recommendations of the CIRIA guidance Control of Water Pollution from Construction Sites – Guidance for consultants and contractors (Masters-Williams et al., 2001) to minimise as far as possible the risk of soil, groundwater and surface water contamination.

### 8.2 Ground Contamination

- 8.2.1 Good housekeeping (daily site clean-ups, use of disposal bins, etc.) will be carried out on site during construction, and the proper use, storage and disposal of all substances and their containers will help prevent soil contamination, as per the general measures in **Section 5**.
- 8.2.2 Excavations in made ground will be monitored by an appropriately qualified person to ensure that any localised areas of contamination encountered are identified, segregated and disposed of appropriately. Any identified localised areas of contamination will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the localised area of contamination does not cross-contaminate clean soils elsewhere throughout the site.
- 8.2.3 Potential soil and water pollution will be minimised by the implementation of good construction practices. Such practices will include adequate bunding for oil containers, wheel wash and dust suppression on site roads, and regular plant maintenance in accordance with the measures herein, the EIERP and the CIRIA guidance referenced above.

### 8.3 Loss or damage of topsoil

- 8.3.1 Excavated topsoils will be stockpiled using appropriate methods to minimise the effects of weathering. Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. Any surplus suitable material excavated that is not required elsewhere for the proposed development, will be reused for other projects where possible, subject to appropriate approvals/notifications or removed off site to a suitable licensed facility.
- 8.3.2 In order to reduce the compaction and erosion of topsoil outside the areas of direct construction, haulage routes will be along predetermined routes within and outside the proposed development. Where compaction occurs due to truck movements and other construction activities on unfinished surfaces, remediation works will be undertaken to reinstate the ground to its original condition. Where practical, compaction of any soil or subsoil which is not part of the works or to remain in-situ within the proposed development will be avoided.
- 8.3.3 The *Contractor* will ensure that any topsoil or subsoil is assessed for re-use within the proposed development ensuring the appropriate handling, processing and segregation of the material. Where practical the removal of soil from the proposed development will be avoided. All

earthworks will be undertaken in accordance with TII Specification for Road Works (SRW) Series 600 Earthworks and project specific earthworks specifications ensuring that all excavated material and imported material is classified using the same methodology so as to allow maximum opportunity for the reuse of materials on site.

#### 8.4 Excavation of Made Ground

- 8.4.1 Excavations in made ground will be monitored by an appropriately qualified person to ensure that any localised areas of contamination encountered are identified, segregated and disposed of appropriately and to ensure soils are consistent with the descriptions and classifications according to the waste acceptance criteria testing carried out as part of the site investigations. Any identified localised areas of contamination will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the contaminated material does not cross- contaminate clean soils elsewhere throughout the site.
- 8.4.2 Samples of ground suspected of contamination will be tested for contamination during the detailed investigation and ground excavated from these areas will be disposed of to a suitably licensed or permitted site in accordance with the current Irish waste management legislation.
- 8.4.3 Any dewatering in areas of contaminated ground will be designed to minimise the mobilisation of contaminants into the surrounding environment. Where dewatering in such areas is unavoidable the water will be adequately treated prior to discharge.
- 8.4.4 Where piling is undertaken, it will be completed following the placement of the deeper granular gas drainage layer which will also serve as a piling mat. Following this, the barrier layer and upper drainage layer will be placed around the piles and sealed. Piling may also be completed after the geosynthetic clay layer (GCL) barrier and drainage layer has been laid, which will require excavation of material and sealing the GCL around piles.
- 8.4.5 The geotechnical design will ensure that any future settlement on site does not lead to a disruption of the integrity of the GCL barrier layer that could lead to water ingress.

#### 8.5 Earthworks and Excavations

- 8.5.1 All excavated material, where possible will be reused within the proposed development. The appointed *Contractor* will ensure acceptability of the material for reuse for the proposed development with appropriate handling, processing and segregation of the material. This material would have to be shown to be suitable for such use and subject to appropriate control and testing according to earthworks specifications.
- 8.5.2 Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. Any surplus suitable material excavated that is not required elsewhere for the proposed development, will be used for other projects where possible, subject to appropriate approvals/notifications.
- 8.5.3 Earthworks haulage will be along predetermined routes within the proposed development and any deliveries to site will be along existing national, regional and local routes for importation and exportation of materials, in accordance with the Construction Traffic Management Plan (CTMP). Haulage along the cable route will be along internal haul roads/access tracks, where practicable. Where compaction occurs due to truck movements and other construction activities on unfinished surfaces, remediation works will be undertaken to reinstate the ground to its original condition. Where practicable, compaction of any soil or subsoil which is to remain in situ along the sites will

be avoided.

- 8.5.4 Earthworks operations shall be carried out such that surfaces will be designed with adequate falls, profiling and drainage to promote safe runoff and prevent ponding and flooding. Runoff will be controlled through erosion and sediment control structures appropriate to minimise the water effects. Care will be taken to ensure that surfaces are stable to minimise erosion.

### 8.6 Pollution of soil and groundwater

- 8.6.1 Measures to be implemented to minimise the risk of spills and contamination of soils and waters will include:

- Employing only competent and experienced workforce, and site specific training of site managers, foremen and workforce, including all subcontractors, in pollution risks and preventative measures;
- Ensure that all areas where liquids (including fuel) are stored, or cleaning is carried out, are in designated impermeable areas that are isolated from the surrounding area and within a secondary containment system, e.g. by a roll-over bund, raised kerb, ramps or stepped access;
- The location of any fuel storage facilities will be considered in the design of all construction compounds and will be fully bunded. These are to be designed in accordance with relevant and current guidelines and codes of best practice at the time of construction.
- Good housekeeping will be maintained at the site (daily site clean-ups, use of disposal bins, etc.) during the entire construction phase;
- All concrete mixing and batching activities will be located in designated areas away from watercourses and drains;
- Potential pollutants will be adequately secured against vandalism in containers in a dedicated secured area;
- Provision of proper containment of potential pollutants according to relevant and current codes of practice and legal requirements;
- Thorough control during the entire construction stage to ensure that any spillage is identified at early stage and subsequently effectively contained and managed; and
- Spill kits to be provided and to be kept close to the HDD and temporary construction compounds. Staff to be trained on how to use spill kits correctly.
- Refer also to **Sections 5.9 and 5.10**.

### 8.7 Monitoring

- 8.7.1 Excavations in made ground will be monitored by an appropriately qualified person to ensure that any contaminated material is identified, segregated and disposed of appropriately. Any material from identified localised areas of contamination shall be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the localised area of contamination does not cross-contaminate clean soils elsewhere.
- 8.7.2 Any excavation and stockpiled material shall be monitored during earthworks to ensure the



stability of slopes and to ensure that the soils excavated for disposal are consistent with the descriptions and classifications according to the waste acceptance criteria testing carried out as part of the site investigations.

- 8.7.3 Ground settlement, horizontal movement and vibration monitoring will be implemented during construction activities to ensure that the construction does not exceed the design limitations.
- 8.7.4 Movement monitoring shall be carried out during any activities which may result in ground movements or movements of any nearby structures.
- 8.7.5 Visual monitoring will be undertaken as part of the regular site audits during the construction of the proposed development to ensure existing surface water drainage runoff and natural infiltration to ground is not affected by the proposed development.
- 8.7.6 Horizontal movement monitoring of the sheet piles (if used) will be implemented during construction activities to ensure that movement does not exceed the design limitations. Appropriate remedial actions will be implemented should there be any exceedance of design limitations.

## 9 WATERCOURSE CROSSINGS

### 9.1 General Requirements for Watercourse Crossings

- 9.1.1 The Office of Public Works (OPW) regulate activities in or in the vicinity of rivers, lakes and wetlands, including engineering activities like river crossings and culverting. Depending on the nature of the works, these may require consent from OPW. In addition, consultation with Inland Fisheries Ireland (IFI) will be required. The *Contractor* undertakes all consultation and obtains consents/permits prior to works as necessary.
- 9.1.2 If damming and over-pumping is adopted for the open cut watercourse crossings the water will be discharged through a filtering medium to limit silt carry over or bed disturbance downstream of the crossing point;
- 9.1.3 There will be no tracking of machinery within watercourses other than the stream bed excavation for the temporary works associated with construction of the watercourse crossings for the cable route;
- 9.1.4 Silt pollution caused by working in surface water will be minimised or prevented by keeping water out of the works area using appropriate isolation techniques, such as cofferdams, flume pipes and by-pass channels.
- 9.1.5 Where short-term over pumping or flume pipes are required, equipment will be sized to accommodate surface water flow that might reasonably be expected over the period in question;
- 9.1.6 During the construction of the crossing of the Kilbride watercourse Inland Fisheries Ireland (IFI) will be consulted in relation to protecting fish populations. Measures include only undertaking instream works during the period July to September in the Kilbride and Johnstown North watercourses to avoid interference with the spawning migration and spawning process and to protect juvenile fish emerging from the gravels.

### 9.2 Open Watercourse Crossings – Biodiversity Measures

9.2.1 The Kilbride and Johnstown North watercourse crossings will be constructed using open cut trenched techniques. In addition to the general measures described in other sections herein and in the EIAR, the following specific mitigation measures will be implemented for open cut crossings of watercourses:

- Works will comply with The IFI's Guidelines on protection of fisheries during construction works in and adjacent to waters (IFI, 2016) and IFI will be consulted with regard to any proposed over-pumping at the watercourse crossing.
- The open cut methodology will require dams to be put in place.
- Appropriate silt control measures such as silt barriers (e.g. straw or silt fence) will be employed where required. Once reinstatement of the cable trench is complete, the temporary dams will be removed and over pumping ceased. No haul road is proposed at the watercourse crossing. Plant will utilise existing accesses used by landowners to avoid further works within the watercourse.
- Construction activities will be undertaken during daylight hours only. This will ensure that there is potential for undisturbed fish passage at night. The works will be temporary and will not create a significant long-term barrier to fish movement.
- Works on the Kilbride Stream will take place during the summer period from July to September inclusive, which is outside the most sensitive time for these species. Due to dryer conditions in the summer period, this will also minimise the risk of ground damage, minimises the potential for silt generation and thus minimise the risk of inadvertent ecological impacts.
- Sediment from the stream bed will be stockpiled outside of the flood plain and used to re-create the stream bed.
- Dams will be removed gradually, with silt curtains in place and under ecological supervision to minimise the potential for silt generation.
- The banks of the temporary watercourse crossings will be reformed to their original profile in accordance with both the NPWS, IFI and the landowners' requirements. The bed materials which had been removed for construction will be reinstated to the original profile. The temporary flume pipe, packing and sand-bags will be removed once the bed materials and bank profile are reinstated, ensuring the correct sequencing of substrate reinstatement.

Final bank reinstatement may require further measures to stabilise the banks and prevent erosion. Geotextiles may be used in conjunction with seeding of an appropriate grass mix. Heavier solutions such as the importation of locally sourced large stones or rocks may also be used. Bank stabilisation works will be discussed with the NPWS/IFI to ensure that suitable materials and methodologies are being used. Any bank protection, where it is required, will be adequately keyed into both the bed and banks. The materials and methods employed will be in keeping with the surrounding environment and comply with any conditions attached to the planning approval.

## 10 BIODIVERSITY MEASURES

### 10.1 General Measures

10.1.1 Mitigation measures (of relevance in respect of any potential ecological effects) will be implemented throughout the project, including the preparation and implementation of detailed method statements. The works will incorporate the relevant elements of the guidelines outlined below:

- *The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads*. National Roads Authority, Dublin (2010).
- *Control of water pollution from construction sites. Guidance for consultants and contractors (C532)*. CIRIA. H. Masters-Williams et al (2001)
- *Control of water pollution from linear construction projects. Technical guidance (C648)*. CIRIA. E. Murnane, A. Heap and A. Swain. (2006)

10.1.2 All personnel involved with the proposed development will receive an on-site induction relating to construction and operations and the environmentally sensitive nature of European sites and to re-emphasise the precautions that are required as well as the precautionary measures to be implemented. Site managers, foremen and workforce, including all subcontractors, will be suitably trained in pollution risks and preventative measures.

10.1.3 All staff and subcontractors have the responsibility to:

- Work to agreed plans, methods and procedures to eliminate and minimise environmental impacts,
- Understand the importance of avoiding pollution on-site, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental impact;
- Respond in the event of an incident to avoid or limit environmental impact;
- Report all incidents immediately to the Project Manager and the Environmental (Ecological) Clerk of Works (ECoW);
- Monitor the workplace for potential environmental risks and alert the site manager if any are observed; and
- Co-operate as required, with site inspections.

### 10.2 Water Quality

- 10.2.1 To minimise the potential for elevated silt levels in surface water run-off, the working area used during construction will be clearly outlined prior to the commencement of works and will be kept to the minimum area necessary to effectively complete the works. Vegetation will be retained where possible.
- 10.2.2 A set of standardised emergency response procedures will govern the management of emergency incidents, see the Environmental Incident and Emergency Response Plan.
- 10.2.3 A detailed spillage procedure 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. Spill kits will be maintained on-site and relevant staff will be trained in their effective usage. All site personnel will be trained and aware of the appropriate action in the event of an emergency, such as the spillage of potentially polluting substances. In the event of spillage of any polluting substance and/or pollution of a watercourse, Wicklow County Council, IFI and the NPWS shall be notified.
- 10.2.4 Specific environmental control measures to minimise the effect on the hydrological regime, water quality and flooding as outlined in the CEMP include:
- 10.2.5 General Measures:
- Good housekeeping (site clean-ups, use of disposal bins, etc.) will be implemented on the site;
  - No materials will be stored in flood plains or in areas which would impede flood flow paths;
  - Where possible, soil excavation will not be completed during periods of prolonged or heavy rain;
  - Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe run-off and prevent ponding and flooding;
  - All construction compounds will be in areas that are at low risk of flooding (outside the 1 in 100-year flood zone);
  - Secure oil and chemical storage in over-ground bunded areas, limited to the minimum volume required to serve immediate needs with specified delivery and refuelling areas;
  - No refuelling or fuel storage within 50m of watercourse and only on a sealed surface;
  - Emergency spill kits retained onsite at sensitive locations;
  - Cessation of work and development of measures to contain and/or remove pollutant should an incident be identified;
  - Silt traps will be employed and maintained in appropriate locations;
  - Temporary interception bunds and drainage ditches will be constructed up slope of excavations to minimise surface runoff ingress and in advance of excavation activities;
  - Excavation and earthworks will be suspended during and immediately following periods of heavy rainfall to minimise sediment generation and soil damage;

# CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

## Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure

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- Weather warnings will be monitored during construction to ensure that there is no flood risk to construction workers installing the cable. A risk assessment will be carried out in the case of a weather warning to determine what works can proceed, and what works need to be postponed;
- The temporary foul drainage at the construction compounds will comprise self-contained sanitary facilities, with wastewater stored and tankered off-site to appropriately licensed treatment facilities;
- Earthworks haulage will be along predetermined routes along existing national, regional and local routes for importation and exportation of materials, in accordance with the Construction Traffic Management Plan (CTMP) included in the CEMP. Haulage along the cable route will be along internal haul roads/access tracks, where practicable. Where compaction occurs due to truck movements and other construction activities on unfinished surfaces, remediation works will be undertaken to reinstate the ground to its original condition. Where practicable, compaction of any soil or subsoil which is to remain in situ along the sites will be avoided.
- The excavated material storage area will be at least 50m from any watercourse and material side slopes will be commensurate with the type of material, to ensure slope stability and prevent erosion. The stockpile will be surrounded in silt fencing.
- Any existing field drainage present crossing the landfall site will be temporarily diverted or facilities put in place to over-pump to settlement ponds prior to discharge of treated water into the existing surface water drainage system.
- Field drains will be reinstated on completion of the works or new drainage installed to match the drainage characteristics of the ground prior to development. The landowner will be consulted on the proposed drainage provisions prior to any installation.
- Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe runoff and prevent ponding and flooding. Runoff will be controlled through erosion and sediment control structures appropriate to minimise the water impacts. Care will be taken to ensure that surfaces are stable to minimise erosion.
- Excavated topsoils will be stockpiled using appropriate methods to minimise the impacts of weathering. Care will be taken in reworking this material to minimise dust generation, groundwater infiltration and generation of runoff. Any surplus suitable material excavated that is not required elsewhere for the proposed development, shall be used for other projects where possible, subject to appropriate approvals/notifications.
- In order to reduce the compaction and erosion of topsoil outside the areas of direct construction, haulage routes will be along predetermined routes within and outside the proposed development. Where compaction occurs due to truck movements and other construction activities on unfinished surfaces, remediation works will be undertaken to reinstate the ground to its original condition. Where practical, compaction of any soil or subsoil which is to remain in-situ within the proposed development will be avoided.
- The Contractor will ensure that any topsoil or subsoil is assessed for re-use within the proposed development ensuring the appropriate handling, processing and segregation of the material. Where practical the removal of soil from the proposed development will be avoided. All earthworks will be undertaken in accordance with TII Specification for Road Works (SPW) Series 600 Earthworks and project specific earthworks specifications ensuring that all excavated material and imported material is classified using the same methodology so as to allow maximum opportunity for the reuse of materials on site.

- All excavated material, where possible will be reused as construction fill. The appointed Contractor will ensure acceptability of the material for reuse for the proposed development with appropriate handling, processing and segregation of the material.
- All improvement works will be closely monitored and supervised and will be enclosed by silt barriers (e.g. straw or silt fence) to prevent any runoff into surface water bodies and will be carried out in accordance with the CEMP.
- Horizontal movement monitoring of the sheet piles will be implemented during construction activities to ensure that movement does not exceed the design limitations. Appropriate remedial actions will be implemented should there be any exceedance of design limitations.

### 10.2.6 Cable Route General Measures

- Any groundwater or rainwater that collects in a trench will be pumped to locations agreed with the landowners and local authorities. Typically, this will be onto adjacent land, not directly into waterways, and through a filter medium, to avoid the build-up of silt, as some granular material will, inevitably, be pumped out with the water. The pump flowrates will match that of the water into the trench, as it must be kept generally free of water. A single pump with a 75mm hose will usually be adequate to deal with rainwater running into a trench. A similar arrangement will apply at joint bays, where a sump will be cast into the concrete base for a pump
- Any bentonite (or similar HDD drilling head lubrication material) will be handled and removed by the drilling contractor. Typically, bentonite is used, which comprises 95% water and 5% bentonite clay which is a non-toxic, natural substance. HDD will be a closed system, with drilling fluid recirculated, the drill cuttings recovered, and drilling fluid reused;
- In order to eliminate the migration of drilling fluids through the subsurface to waterbodies the following measures will be employed:
- Drilling pressures will be closely monitored and not exceed those needed to penetrate the formation.
- Exit and entry points for the HDD will be enclosed by silt barriers (e.g. straw or silt fence) to prevent any runoff into surface water bodies.
- If pressure drops during drilling or if there is a lack of returns the drilling will stop immediately to allow an assessment of a potential leakage of drilling fluid into the surrounding formation. A leak stopping compound may be used to prevent the leak from migrating further into the formation. If the leak stopping compound is not successful, the drilling direction may need to change to avoid the area where the leak occurred.
- If damming and over-pumping is adopted for the open cut watercourse crossings the water will be discharged through a filtering medium to limit silt carry over or bed disturbance downstream of the crossing point;
- There will be no tracking of machinery within watercourses other than that related to the temporary works associated with construction of the watercourse crossings for the cable route;
- Silt pollution caused by working in surface water will be minimised or prevented by keeping water out of the works area using appropriate isolation techniques, such as cofferdams, flume pipes and by-pass channels;

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- Where short-term over pumping or flume pipes are required, equipment will be sized to accommodate surface water flow that might reasonably be expected over the period in question.
- Dewatering, where required, will incorporate the use of filter media; there will be no direct discharges into the watercourses
- The cables will be installed in ducts, so the only section of trench that will be open is that which is being excavated and in which ducts are being installed. Excavated cable trenches will be backfilled as the works progress, as soon as installation is complete and any cement bound surround material has cured sufficiently.



### 10.2.7 Substation General Measures

- Any excavations within made ground should follow the criteria outlined in the CEMP. The CEMP will be updated by the *Contractor* prior to the commencement of construction.
- Excavations in made ground will be monitored by an appropriately qualified person to ensure that any localised areas of contamination encountered are identified, segregated and disposed of appropriately and to ensure soils are consistent with the descriptions and classifications according to the waste acceptance criteria testing carried out as part of the site investigations. Any identified localised areas of contamination will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure that the contaminated material does not cross- contaminate clean soils elsewhere throughout the sites.
- Samples of ground suspected of contamination will be tested for contamination during the detailed investigation and ground excavated from these areas will be disposed of to a suitably licensed or permitted site in accordance with the current Irish waste management legislation.
- Any dewatering in areas of contaminated ground will be designed to minimise the mobilisation of contaminants into the surrounding environment. Where dewatering in such areas is unavoidable the water will be adequately treated prior to discharge.
- Where piling is undertaken, it is recommended that this is completed following the placement of the deeper granular gas drainage layer which will also serve as a piling mat. Following this, the barrier layer and upper drainage layer will be placed around the piles and sealed.
- Piling may also be completed after the GCL barrier and drainage layer has been laid, which will require excavation of material and sealing the GCL around piles.
- The geotechnical design will ensure that any future settlement on site does not lead to a disruption of the integrity of the GCL barrier layer that could lead to water ingress.

### 10.2.8 General Monitoring Measures – Water Quality

- Visual monitoring will be undertaken as part of the regular site audits during the construction of the proposed development to ensure existing surface water drainage runoff and natural infiltration to ground is not affected by the proposed development.
- A monitoring regime/programme for water quality will be put in place. Turbidity monitoring will be carried out downstream, within 20m of the crossing, while works are underway at the Templerainy, Kilbride River and Johnstown North watercourse crossings to ensure that sediment levels are not significantly elevated above baseline levels.
- The *Contractor* is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials. Particular regard will be given to trench excavations and other works which may be vulnerable to the generation or conveyance of run-off, and for the protection of site personnel, plant and equipment in flood prone areas.

### 10.2.9 HDD Works – Water Quality Measures

10.2.10 The drilling contractor will develop a location specific HDD frac-out contingency plan, detailing measures to be taken to reduce the risk of bentonite breakout and measures to be taken for the protection of sensitive ecological receptors, should a breakout occur.

10.2.11 A typical procedure for managing a breakout or frac-out on land would include:

- Stop drilling immediately;
- Contain the bentonite by constructing a bund e.g. using sandbags;
- Recover the bentonite from the bund by pumping to a suitable container or back to the entry pit for recycling;
- If necessary, inert and non-toxic lost circulation material (mica) will be pumped into the bore profile, which will swell and plug any fissures;
- The area will be monitored closely to determine if the breakout has been sealed; and
- Check and monitor mud volumes and pressures as the works recommence.

10.2.12 A typical procedure for managing a breakout or frac-out under water would include:

- Stop drilling immediately;
- Pump lost circulation material (mica), which will swell and plug any fissures;
- Check and monitor mud volumes and pressures as the works recommence; and
- Repeat process as necessary until the breakout has been sealed.

10.2.13 Any bentonite will be managed and removed by the specialist drilling contractor on completion of the operation. Water will be brought to site in tankers (to make up drilling fluid) for lubrication of the bore and to provide the requisite volumes of water to the compound. The water used will be non-saline and non-potable water. For each of the two HDD bores and with an average initial demand of around 10m<sup>3</sup>/hr, the total volume of water required is estimated to be up to 450m<sup>3</sup> per bore, assuming full drilling fluid returns are maintained. On completion of the operation the drill fluid will be disposed of to an appropriately licensed facility.

### 10.3 Noise

- 10.3.1 The employment of good construction management practice, as described in **Section 5** herein, will minimise the risk of adverse impacts from the noise and vibration during the construction phase.
- 10.3.2 Mitigation measures will be employed to ensure that potential noise and vibration impacts at nearby sensitive receptors due to construction activities are minimised. The preferred approach for controlling construction noise is to reduce source levels where possible, but with due regard to practicality.
- 10.3.3 The most effective means of mitigating construction noise are through use of barriers to reduce the levels of noise reaching noise sensitive human receptors. A site hoarding, if suitably impervious, will attenuate noise from construction activities. Where HDD activities will be taking place 24/7 in close proximity, a hoarding will be erected around work sites.
- 10.3.4 Further noise mitigation and monitoring measures are detailed in **Section 5.12** above.

### 10.4 Lighting

- 10.4.1 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. Lighting mitigation measures will follow *Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers* (Bat Conservation Ireland, 2010). The following measures will be applied in relation to site lighting:
- 10.4.2 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 to unnecessarily intrude on adjacent ecological receptors and structures used by protected species. The primary area of concern is the potential impact at the Avoca and Templerainy watercourses and its adjacent woodland habitat as well as hedgerows and treelines. There will be no directional lighting focused towards the watercourses or boundary habitats respectively and cowlings and focusing lights downwards will minimise light spillage.
  - Once commenced, the HDD drilling activities are expected to operate continuously over a 24 hour period until each bore is complete. Consequently, lighting will be provided to provide a safe working area. Directional lighting will be employed to minimise light spill onto adjacent areas and the lighting will be configured to meet health and safety requirements.

### 10.5 Invasive Species

- 10.5.1 A number of invasive species control measures have been proposed. Full details on these measures are outlined in the Invasive Species Management Plan provided in Appendix D.
- 10.5.2 Those involved in the application of herbicides/pesticides will be competent to do so and will have sufficient experience and knowledge in the area of herbicides/pesticides application.

- 10.5.3 All staff involved in the application of herbicides/pesticides will have received appropriate training, which may include achieving competency certification in the safe use of herbicides/pesticides through a National Proficiency Tests Council registered assessment centre or achieving an appropriate FETAC award in this area.

### 10.6 Habitats

- 10.6.1 The Wildlife Act 1976, as amended, provides that it is an offence to cut, grub, burn or destroy any vegetation on uncultivated land or such growing in any hedge or ditch from the 1 March to the 31 August. Exemptions include the clearance of vegetation in the course of road or other construction works or in the development or preparation of sites on which any building or other structure is intended to be provided. Where possible, vegetation will be removed outside of the breeding season and in particular, removal during the peak-breeding season (April-June inclusive) will be avoided. This will also minimise the potential disturbance of breeding birds outside of the proposed development site boundary.
- 10.6.2 To prevent incidental damage by machinery or by the deposition of spoil during site works, hedgerow, tree and scrub vegetation which are located in close proximity to working areas will be clearly marked and fenced off to avoid accidental damage during excavations and site preparation.
- 10.6.3 Habitats that are damaged and disturbed will be reinstated and landscaped once construction is complete. Disturbed areas will be seeded or planted using appropriate native grass or species native to the areas where necessary. Natural regeneration of vegetation will also occur.
- 10.6.4 There will be a defined working area which will be fenced off with designated haul routes to prevent inadvertent damage to adjoining habitats.
- 10.6.5 Any hedgerows, treelines or woodland habitat removed during construction will be replanted using a suitable mix of shallow rooted, native species such as Hawthorn and Blackthorn.
- 10.6.6 Tree root systems can be damaged during site clearance and groundworks. Materials, especially soil and stones, can prevent air and water circulating to the roots. No materials will be stored within the root protection area/dripline of mature trees. The ECoW will specify appropriate protective fencing where required. Retention of the existing network of woodland/ treelines/ hedgerows, where possible, will provide natural screening and help to maintain biodiversity. Where tree root systems cannot be avoided the trees will be assessed by an arboriculturist to determine if crown reduction or other measures are required.
- 10.6.7 It is intended that the land along the cable route will be reinstated and returned to its current use post-construction. As not all habitat can be reinstated, biodiversity enhancement planting will be provided at the landfall to ensure that there is no net-loss of habitat as a result of the proposed development. The total biodiversity enhancement area will be 16,000m<sup>2</sup>.

### 10.7 Otters

- 10.7.1 A detailed pre-construction survey will be carried out no more than 10-12 months prior to the commencement of construction works to confirm the absence of Otter holts within 150m of the proposed development area.
- 10.7.2 If Otter holts are recorded at that time, the Environmental (Ecological) Clerk of Works (ECoW) will determine the appropriate means of minimising effects i.e. avoidance, moving works, timing of works etc. If required the ecologist will obtain a derogation licence from the NPWS, to facilitate licenced exclusion from the breeding or resting site in accordance with a plan approved by the NPWS.

10.7.3 Any holts found to be present will be subject to monitoring and mitigation as set out in the NRA Guidelines for the Treatment of Otter prior to the Construction of National Road Schemes (2006b). If found to be inactive, exclusion of holts may be carried out during any season. No wheeled or tracked vehicles (of any kind) will be used within 20m of active, but non-breeding, Otter holts. Light work, such as digging by hand or scrub clearance will also not take place within 15m of such holts, except under licence. The prohibited working area associated with Otter holts will be fenced and appropriate signage erected. Where breeding females and cubs are present no evacuation procedures of any kind will be undertaken until after the Otters have left the holt, as determined by the ECoW. Breeding may take place at any season, so activity at a holt must be adjudged on a case by case basis. On occasion, Otter holts may be directly affected by the scheme. To ensure the welfare of Otters, they must be evacuated from any holts present prior to any construction works commencing. The exclusion process, if required, involves the installation of one-way gates on the entrances to the holt and a monitoring period of 21 days to ensure the Otters have left the holt prior to removal.

## 10.8 Fish

10.8.1 In addition to the water quality measures outlined in **Section 9.2** above, the following mitigation measures will be implemented:

- Works will comply with the IFI's Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016) and IFI will be consulted with regard to any proposed over-pumping at the watercourse crossing.
- Construction activities will be undertaken during daylight hours only. This will ensure that there is potential for undisturbed fish passage at night. The works will be temporary and will not create a significant long-term barrier to fish movement.
- During the construction of the crossing of the Kilbride watercourse IFI will be consulted in relation to protecting fish populations. Measures include only undertaking instream works during the period July to September to avoid interference with the spawning migration and spawning process and to protect juvenile fish emerging from the gravels,
- Prior to temporarily damming the Kilbride Stream, a fish salvage operation will be carried out under the provisions of a licence under Section 14 of the Fisheries (Consolidation) Act 1959. Standard biosecurity protocols will be implemented, and fish will be translocated to similar habitat upstream of the works area. This will be carried out following receipt of a Section 14 licence from Inland Fisheries Ireland and in consultation with Inland Fisheries Ireland.

## 10.9 Badgers

10.9.1 As a precautionary measure, as Badgers could potentially move into the area prior to the commencement of works, the planning boundary will be surveyed for Badgers no more than 10-12 months prior to the commencement of site works, to confirm the absence of Badgers within the zone of influence of the development. If Badgers are discovered at that time, the mitigation measures outlined in the NRA publication, Guidelines for the Treatment of Badgers Prior to the Construction of a National Road Scheme (NRA, 2006a), are to be followed. If necessary, the following measures will be employed for all construction works where badger issues arise:

- Badger sett tunnel systems can extend up to c. 20m from sett entrances. Therefore, no heavy machinery will be used within 30m of badger setts (unless carried out under licence); lighter machinery (generally wheeled vehicles) will not be used within 20m of a sett entrance; light work, such as digging by hand or scrub clearance will not take place within 10m of sett entrances. Based on the results of badger surveys to date the construction works within the planning boundary will not take place within these buffer zones.
- During the breeding season (December to June inclusive), no works will be undertaken within 50m of active setts, and no pile driving within 150m of active setts. Based on the results of badger surveys to date, the construction works within the planning boundary will not take place within these buffer zones.
- Where badger setts are likely to be affected, they will be clearly marked and buffer zones for vehicles clearly marked by fencing and signage;
- Works close to badger setts or removal of badgers from a site will only be carried out under the supervision of a qualified ecologist under license from the NPWS.
- Where affected setts do not require destruction, construction works may commence once recommended mitigation measures to address the badger issues as identified by the ECoW and agreed with NPWS, have been complied with. Such mitigation may include hoarding or visual screens.
- In the unlikely event that destruction of a badger sett is required this can only be carried out under licence from the NPWS. In these circumstances, which are highly unlikely to arise, badgers must have an alternative sett within their territory that can be utilised or an alternative artificial sett will be provided.

### 10.10 Bats

10.10.1 During the site works, general mitigation measures for bats will follow the National Road Authority's '*Guidelines for the Treatment of Bats during the Construction of National Road Schemes*' NRA (2005c) and '*Bat Mitigation Guidelines for Ireland: Irish Wildlife Manuals, No. 25*' (Kelleher, C. & Marnell, F. (2006)). These documents outline the requirements that will be met in the pre-construction (site clearance) stage to minimise negative effects on roosting bats, or prevent avoidable effects resulting from significant alterations to the immediate landscape.

10.10.2 No bat roosts were recorded within the proposed planning boundary. The *Contractor* will take all required measures to ensure works do not harm individuals by altering working methods or timing to avoid bats, if necessary. The following mitigation measures will be implemented:

- The bat specialist will work with the *Contractor* to ensure that the loss of trees is minimised and that trees earmarked for retention are adequately protected. A preconstruction survey by the bat specialist will be carried out to advise the *Contractor* on minimising tree loss within the cable route corridor.
- Tree-felling will be undertaken in the period September to late October/early November. During this period bats are capable of flight and may avoid the risks of tree-felling if proper measures are undertaken.

- Felled trees will not be mulched immediately. Such trees will be left lying several hours and preferably overnight before any further sawing or mulching. This will allow any bats within the tree to emerge and avoid accidental death. The bat specialist will be on-hand during felling operations to inspect felled trees for bats. If bats are seen or heard in a tree that has been felled, work will cease and the local NPWS Conservation Ranger will be contacted.
- Tree will be retained where possible and no 'tidying up' of dead wood and spilt limbs on tree specimens will be undertaken unless necessary for health and safety.
- Treelines outside the proposed development area but adjacent to it and thus at risk, will be clearly marked by a bat specialist to avoid any inadvertent damage.
- During construction directional lighting will be employed to minimise light spill onto adjacent areas. If night time works are required for HDD works at the Templerainy Stream and at the M11 there will be no directional lighting focused towards woodland habitat and cowling and focusing lights downwards will be utilised to minimise light spillage.
- If bats are recorded by the bat specialist within any vegetation or structure on site i.e. trees, or walls to be removed or impacted on, no works will proceed without a relevant derogation licence from the NPWS.
- Upon completion external lighting will be installed at the substation. The lighting system will provide directional illumination within the substation to allow personnel to move without risk to health and safety and to prevent light spill.

#### 10.11 Birds

10.11.1 Refer to **Section 10.6.1** above.

10.11.2 Retention of the native treelines, hedgerows and woodland where possible will reduce the loss of breeding and nesting habitat for birds. NRA guidelines on the protection of trees and hedges prior to and during construction will be followed (NRA, 2006).

#### 10.12 Landscape

10.12.1 See **Section 11** below.



## 11 Landscaping

### 11.1 General Measures

- 11.1.1 It is intended that the land along the cable route will be reinstated and returned to its current use post-construction.
- 11.1.2 The substation site, contractors' compounds and temporary work areas will be managed in an orderly manner with security fencing and hoarding kept in good condition, and vehicular access managed to avoid congestion outside the development site. All vehicular traffic leaving work areas will be clean, and the local road network kept clean.
- 11.1.3 Where trees and hedgerows are to be removed, tree protection fencing in accordance with BS 5837: 2012 will be installed to protect adjacent trees from construction traffic or activity to ensure their integrity and vitality. Excavated topsoil and subsoil will be stockpiled appropriately, for later backfilling and top-soiling.
- 11.1.4 Following completion of the civil works, all excavations will be backfilled using stockpiled materials, and ground surfaces prepared for seeding. Treelines and hedgerows removed to facilitate construction will be replanted.
- 11.1.5 It is intended that the land along the cable route will be reinstated and returned to its current use post-construction. Trees and hedgerows removed to facilitate construction corridors will be replaced with similar species where possible.
- 11.1.6 At field boundaries along the cable route, boundaries will be replanted with shallow rooting hedgerow species above the underground cable circuits.
- 11.1.7 At the 220kV substation, the space between the main security fence and the outer fence will be planted with shallow rooting hedge and shrub species.

### 11.2 Biodiversity Enhancement Planting

- 11.2.1 As not all habitat can be reinstated, biodiversity enhancement planting will be provided to ensure that there is no net-loss of habitat as a result of the proposed development. The total biodiversity enhancement area will be 16,000m<sup>2</sup>, comprising an area of coastal woodland planting provided at the landfall site and comprising native woodland species.
- 11.2.2 The objective of the planting scheme within the biodiversity enhancement area is to create a semi-natural habitat with a diverse woodland structure. The soil type in this area is alkaline and the natural woodland type on relatively dry, fertile and alkaline ground is Oak-ash-hazel woodland WN2 (Fossit, 2000). This is a relatively uncommon woodland type. Pedunculate Oak (*Quercus robur*) has been included within the planting scheme with a view to creating this woodland type. However, it is noted that the planting site is coastal and exposed and therefore a more diverse planting scheme has been utilised. It is also noted that due to the problems associated with ash die-back disease, ash has not been included in the planting scheme. The objective of the planting scheme therefore is to develop a native woodland which is loosely based on the Oak-ash-hazel woodland WN2, but which is more diverse and better able to survive the prevailing conditions.



- 11.2.3 This will be achieved by using a mixture of native species to provide a canopy, subcanopy and ground layer as the woodland matures. Native woodlands with this type of structure are generally of higher value for flora and fauna and as it matures it will become a locally important habitat for flora and fauna. Some open areas will be left unplanted to form small glades as the woodland matures. All trees will be of Irish origin. The planting scheme can be broadly categorised as follows:
- Main woodland planting area with Alder, Blackthorn, Hawthorn, Pendunculate Oak *Quercus robur*, Whitebeam, Hazel, Downy Birch *Betula pubescens*, Holly, Rowan *Sorbus* spp. and Scots Pine *Pinus sylvestris*.
  - Perimeter Edge Mix with Alder, Blackthorn, Hawthorn, Wild Privet *Ligustrum vulgare*, Holly, Spindle and Guelder Rose *Viburnum opulus*.
- 11.2.4 A rabbit proof fence will be provided to protect trees during early establishment. Weed control should not be necessary in Years 1 or 2, however in year 3 some hand weeding may be required. A 5-year aftercare programme will be implemented. Any plants which die, are removed or become seriously damaged or diseased within a period of five years from the completion of the development shall be replaced within the next planting season.
- 11.2.5 The contractor will be required to include a 24-month defects liability clause for replacement landscaping and any planting that fails to establish or dies will be replaced.
- 11.2.6 The coastal woodland planting at the landfall site will incorporate stock proof fencing and have a 5 year aftercare programme to ensure proper establishment of the woodland.

## **12 ARCHAEOLOGICAL PROTECTION**

### **12.1 Archaeological Mitigation**

- 12.1.1 A programme of archaeological testing will be carried out in advance of construction within all greenfield areas of the proposed development. This will be undertaken by an archaeologist under licence and will aim to identify the nature, extent and significance of any archaeological remains that may be present within the project extents. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record and/or archaeological monitoring. Any further mitigation will require approval from the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH).
- 12.1.2 A programme of underwater archaeological assessment, in the form of wade surveys, will be carried out on each watercourse to be directly impacted by the proposed development. This will be carried out by an archaeologist (or archaeologists) under licence and will aim to identify the nature, extent and significance of any archaeological remains that may be present within the sections of watercourses to be affected. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record and/or archaeological monitoring. Any further mitigation will require approval from the National Monuments Service of the DoHLGH.

## 13 REFERENCE DOCUMENTATION

CIRIA SP156 Control of water pollution from construction sites – guide to good practice (2002)

CIRIA C532 Control of Water Pollution from Construction Sites. Guidance for consultants and Contractors (2001)

CIRIA C584: Coastal and Marine Environmental Site Guide (2003)

CIRIA C624 Development and Flood Risk – guidance for the construction industry (2004);

CIRIA C648 Control of Water Pollution from Linear Construction Projects - Site Guide (2006)

CIRIA C649 Control of water pollution from linear construction projects - Technical guidance (2006)

CIRIA C741 Environmental good practice on site guide (4th edition) (2015)

CIRIA C744 Coastal and marine environmental site guide (2nd edition) (2015)

CIRIA C750 Groundwater control – design and practice (2016)

CIRIA C762 Environmental Good Practice on Site pocket book (fourth edition) (2015)

CIRIA X263 Brownfield development sites: ground-related risks for buildings (2002) Department of the Environment Heritage and Local Government Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects (2006)

Department of the Marine and Natural Resources (1998), Fisheries Guidelines for Local Authority Works. Department of the Marine and Natural Resources, Dublin

Department of Transport, Tourism and Sport Guidelines for Managing Openings in Public Roads (April 2017).

Department of Transport, Tourism and Sport Traffic Signs Manual – Chapter 8 Temporary Traffic Measures and Signs for Roadworks (August 2019)

Department of Marine and Natural Resources (DMNR) (1998), Fisheries Guidelines for Local Authority Works. Department of Marine and Natural Resources, Dublin

Eastern Regional Fisheries Board. (Year Unknown). Fisheries Protection Guidelines. Eastern Regional Fisheries Board, Dublin

Enterprise Ireland, Best Practice Guide BPGCS005 Oil Storage Guidelines

Environment Protection Agency (EPA), <http://www.epa.ie/pubs/advice/>

EPA Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011 (Version 3; June 2019).

Inland Fisheries Ireland (2016) Guidance on Protection of Fisheries during Construction in and adjacent to Water

Kelleher, C. & Marnell, F Bat Mitigation Guidelines for Ireland: Irish Wildlife Manuals, No. 2' (2006).

Local Government Management Services Board and Department of Transport Guidance for the Control and Management of Traffic at Roadworks – Second Edition (2010)

National Roads Authority Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes (2008)

National Roads Authority Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Road Schemes, Revision 1 (2010)

National Roads Authority Guidelines on the Management of Waste from National Road Construction Projects, Revision 1 (2014)

National Roads Authority Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes (2005)

National Roads Authority Guidelines for the Treatment of Badgers Prior to the Construction of a National Road Schemes (2006a)

National Roads Authority Guidelines for the Treatment of Bats during to the Construction of National Road Schemes (2008)

National Roads Authority Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes (2006b)

Transport Infrastructure Ireland CC-SPW-00600 Specification for Road Works Series 600 - Earthworks (including Erratum No 1, dated June 2013) (2013)

Transport Infrastructure Ireland GE-ENV-01104 The Management of Invasive Alien Plant Species on National Roads - Standard (2020)

Transport Infrastructure Ireland GE-ENV-01105 The Management of Invasive Alien Plant Species on National Roads - Technical Guidance (2020)

Office of Public Works "Construction, Replacement or Alteration of Bridges and Culverts, 2013".

UK Pollution Prevention Guidelines (PPG):

- GPP 2 (2018): Above ground oil storage tanks
- GPP 4 (2017): Treatment and disposal of wastewater where there is no connection to the public foul sewer
- GPP 5 (2017): Works and maintenance in or near water
- PPG6 (2012): Working at construction and demolition sites
- *GPP08 (2017): Safe Storage and Disposal of Used Oils;*
- GPP 21 (2017): Pollution incident response planning
- PPG 22 (2011): Incident response - dealing with spills
- PPG 26 (2011) Safe storage - drums and intermediate bulk containers

## 14 CHECKLIST – 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 post construction
<b>Consents, licences and permissions</b> for activities as required by current legislation governing the protection of the environment	Yes	Yes
Completed / Updated <b>Contacts Sheet</b>	Yes	Updates
<b>Pollution Prevention Plan</b>	Yes	Updates
<b>Fuel Management Plan</b>	Yes	Updates
<b>Rock Blasting Plan</b>	Yes	Updates
<b>Drainage Maintenance Register</b>		Yes
<b>Weekly Environmental Risk Log</b>		Yes
<b>Geotechnical Risk Register</b>		Yes
<b>Environmental Risk Map</b>	Yes	Updates
<b>Toolbox Talk Schedule</b>	Yes	Updates
<b>Environmental Inspection Schedule</b>	Yes	Updates
SHE risk register, <b>Risk Assessment &amp; Method Statements</b>	Yes	Yes
Construction <b>Waste Management Plan</b> and related information	Yes	Yes
<b>Excavation / Reinstatement records and plans</b>		Yes
<b>Inspection and Audit Reports</b>		Yes
<b>Water monitoring records</b>		Yes
<b>Watercourse Crossing Plan</b>	Yes	Updates
<b>Invasive Species Management Plan</b>	Yes	Updates
<b>Environmental Incident and Emergency Response Plan</b>	Yes	Updates

**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*.

## **Appendix A – Draft Commitments Register**

## **Appendix B – Construction Traffic Management Plan**

## **Appendix C – Construction Waste Management Plan**



## **Appendix D – Invasive Species Management Plan**