

# MWP

## **Construction Environmental Management Plan (CEMP) Carrownagowan 110 kV Grid Connection**

**FuturEnergy Carrownagowan DAC**

**November 2023**

## Table of Contents

1.	Introduction .....	2
1.1	CEMP Purpose and Objectives .....	2
1.2	Structure of Construction Environmental Management Plan .....	3
2.	Proposed Development Overview .....	3
3.	Site Description .....	4
4.	Construction Works .....	5
4.1	Overview of the Works .....	5
4.2	Schedule of Construction Works .....	5
4.3	Working Hours and Personnel .....	5
4.4	Construction Methodology .....	6
4.4.1	Pre-Construction Surveys .....	6
4.4.2	Enabling Works .....	6
4.4.3	Site Access .....	6
4.4.4	Watercourse/Drainage Crossings .....	7
4.4.5	Joint Bays and Communication Chambers .....	7
4.4.6	Other Elements of the Construction Phase .....	7
5.	Construction & Environmental Management .....	8
5.1	Overview .....	8
5.2	On-site Organisational Structure and Responsibility .....	8
5.3	Duties and Responsibilities .....	9
5.3.1	Project Manager .....	9
5.3.2	Environmental Manager .....	9
5.3.3	Construction Manager .....	12
5.3.4	Design Engineer .....	13
5.3.5	Other Roles .....	13
5.4	Contacts .....	14
5.4.1	Main Contractor Contacts .....	14
5.4.2	Employer Contacts .....	14
5.4.3	Third Party Contacts .....	15
5.5	Auditing, Monitoring and Response .....	15
5.6	Environmental Performance Indicators .....	17
5.6.1	Response Procedure/ Corrective Action .....	17
5.6.2	Corrective and Preventative Action .....	18
6.	Environmental Management Plans .....	18
	EMP 1: Management of Excavations .....	19
	EMP 2: Surface Water Runoff Management .....	20
	EMP 3: Fuel and Oils Management .....	23
	EMP 4: Management of Concrete .....	24
	EMP 5: Construction Noise Management .....	25
	EMP 6: Construction Waste Management .....	27
	EMP 7: Construction Dust Management .....	28
	EMP 8: Ecological Management Plan for the Protection of Habitats and Fauna .....	30
	EMP 9: Management of Invasive Species .....	31
	EMP 10: Archaeological and Heritage Protection .....	32
	EMP 11: Emergency Response .....	33
	EMP 12: Site Environmental Training Awareness .....	36
	EMP 13: Monitoring and Auditing .....	37
	EMP 14: Environmental Accidents, Incidents and Corrective Actions .....	38
	EMP 15: Environmental Complaints .....	39

## 1. Introduction

FuturaEnergy Carrownagowan DAC (the ‘Applicant’) is seeking planning consent from An Bord Pleanála (ABP) under section 182A of the Planning and Development Act 2000 for a grid connection to provide a connection to the national grid from the consented Carrownagowan Wind Farm in Co. Clare. The works will involve construction of an underground grid connection cable route (hereafter referred to as the ‘Proposed Development’).

The proposed works will take place on an approximately 25km long grid connection cable route from the Carrownagowan Wind Farm substation to the existing ESB owned 110kV substation at Ardnacrusha, County Clare. The location of the Proposed Development (hereafter referred to as ‘the Site’) is shown in **Figure 1** below.

This Construction and Environmental Management Plan (CEMP) outlines construction practices and environmental management measures which will be implemented during the construction phase.

This will be done to ensure the Proposed Development is constructed in accordance with best practice and with the minimum impact on the surrounding environment.

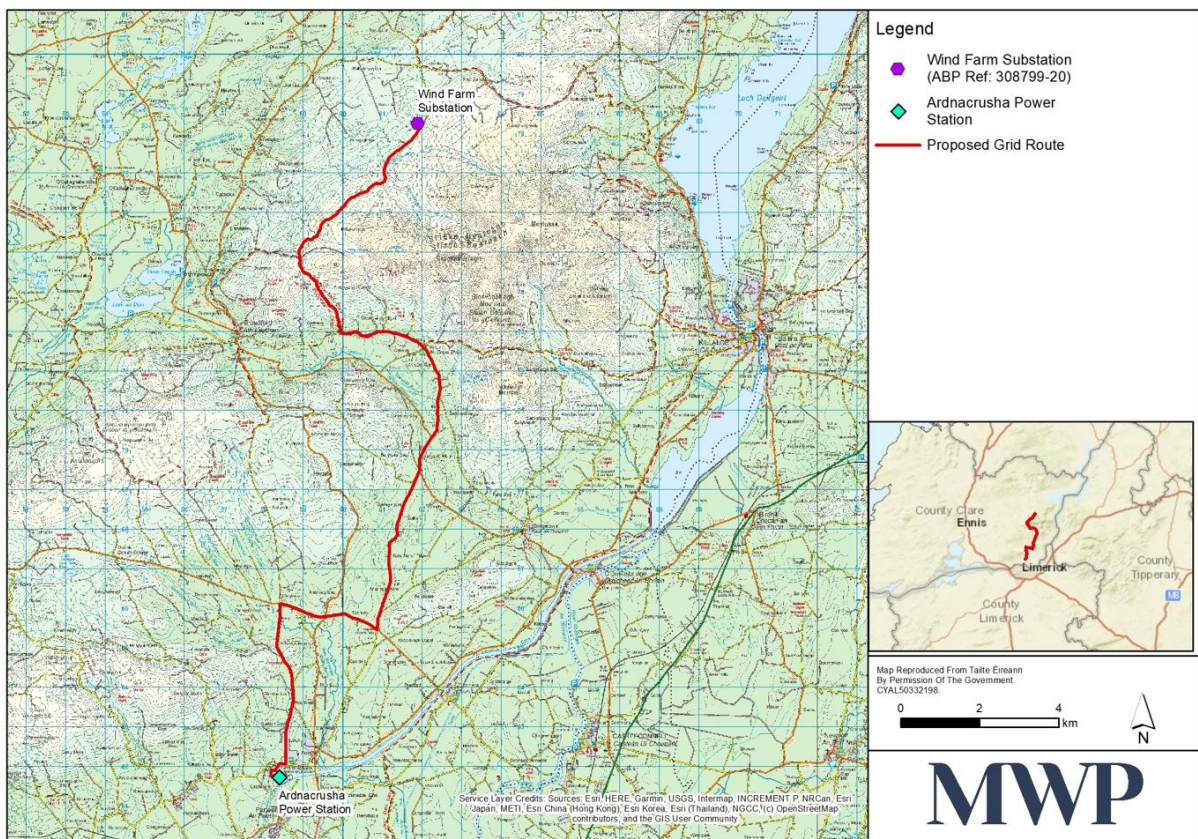


Figure 1 Site Location Map

### 1.1 CEMP Purpose and Objectives

All construction projects require the preparation of a Site-Specific CEMP in order to ensure that the Proposed Development is constructed in accordance with Best Practice, with the minimum impact on the surrounding environment.

The purpose of a CEMP is to outline how the Contractor(s) will implement a Site Construction Management System to meet the specified requirements which include Contractual, Regulatory and Statutory Requirements, Environmental Mitigation Measures and Planning Conditions.

In essence this CEMP is to provide the Client and the Main Proposed Development Contractor with a practical guide to ensure compliance by all parties with Planning and Environmental requirements.

The CEMP achieves this by providing the environmental management framework to be adhered to during the pre-commencement, construction phase of the Proposed Development. It outlines the work practices, construction management procedures, management responsibilities, general control and mitigation measures, as well as monitoring proposals that are required to be adhered to in order to construct the works in an appropriate manner.

All site personnel will be required to be familiar with the plan's requirements as related to their role on-site. There will be a requirement on the Appointed Contractor that details are updated with progress, including the roles and responsibilities of those appointed on the Site for the construction of the Proposed Development.

This CEMP is intended to be a live document. In the event ABP decides to grant approval for the Proposed Development, the final CEMP will address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned by the Board.

## **1.2 Structure of Construction Environmental Management Plan**

This CEMP is structured as followed:

- Overview of Proposed Development – Section 2
- Site Context – Section 3
- Construction Works – Section 4
- Construction and Environmental Management– Section 5
- Environmental Management Plans – Section 6

## **2. Proposed Development Overview**

The consented Carrownagowan Wind Farm will be connected to the existing ESB Networks owned 110kV substation at Ardnacrusha, County Clare which will allow the electrical energy generated from the wind farm to be exported onto the national grid. The full length of the Proposed Development is approximately 25km.

The grid connection will consist entirely of underground cabling (UGC) utilising public local road networks, existing Coillte access tracks and private forestry access tracks with the majority of the UGC to be installed within the public road network. Sections of the Proposed Development will be located on 3rd party agricultural lands in the northern section of the Proposed Development site as it approaches the wind farm. The UGC works will consist of the installation of 6No. HDPE ducts in an excavated trench to accommodate 3 No. power cables, and 2 No. communications cables to allow communications between the Carrownagowan Wind Farm Substation and Ardnacrusha 110kV substation. The excavated trench will be 825mm wide and a depth of 1,315mm in width with variations to adapt to bridge crossings, service crossings and watercourse crossings. The active construction area will generally be only along a 100-200m stretch of any roadway at any one time.

Further detail is included in the Construction Methodology, **Appendix 2-1, Volume III** of this **EIAR** and Planning Drawings **05641-DR-200** to **05641-DR-217**.

### **3. Site Description**

The Proposed Development begins at the consented Carrowmagowan wind farm substation within the townland of Caherhurlly. Once the Proposed Development leaves the wind farm lands, the 25km Proposed Development will be installed primarily along a series of public road networks, along with sections of agriculture, forestry lands and commercial forestry track where the Proposed Development deviates off the public road, between the Carrowmagowan wind farm site and the existing substation in Ardnacrusha illustrated in **Figure 1** above.

The Proposed Development will pass through the townlands of Cloongaheen West, Cloongaheen East, Killeagy, Ballymoloney, Ballyquin Beg, Ballyquin More, Springmount, Leitrim, Fahy More South, Aharinaghmore, Tooreen, Cloghera, Trough, Knockdonagh, Roo West, and Lakyle.

The Site is located within the Lower Shannon catchment. The Site extends south towards the southern boundary of the Lower Shannon sub-catchment at Parteen (Ardnacrusha). The Site is drained by the Killuran River, the Broadford River, the Snaty River and the Blackwater River. All of these are located within the Lower Shannon River catchment.

The Proposed Development passes along the boundary of the Slieve Bernagh Bog SAC (within 30m at the northern end of the Site, the SAC is upgradient of the Proposed Development at this location), as well as the Glenomra Wood SAC near Fahy More (passes along the road within the SAC). The Proposed Development is not located within an SAC.

## 4. Construction Works

### 4.1 Overview of the Works

Key elements of the civil works and activities associated with the construction phase of the Proposed Development are as follows and are discussed in the following subsections:

- Pre-construction activities including site investigation work and pre-construction surveys;
- Site preparation earthworks;
- Underground cable route trenching and cable laying;
- Installation of 5 no. HDPE ducts in an excavated trench;
- Installation of 35 no. joint bays and communication chambers;
- Watercourse crossings; and
- Complete site works: security fencing, gates, signage, landscaping.

Further detail is included in **Appendix 2-1**, the Construction Methodology in **Volume III** of this **EIAR** and the following Planning Drawings:

- 05641-DR-223
- 05641-DR-227
- 05641-DR-230
- 05641-DR-243
- 05641-DR-244
- 05641-DR-246

### 4.2 Schedule of Construction Works

The active construction area will generally be only along a 100-200m stretch of any roadway at any one time. The works are estimated to take approximately 6-8 months and will overlap with the wind farm works. During the first 4 months the cable trenches will be constructed. The second 4 months will involve sequential opening up of all joint bays (these are pre-cast concrete chambers that will be required along the grid connection route over its entire length) and pulling electrical cables through ducts and then joining each cable together. There is anticipated to be 35 joint bays with 2-3 days' work involved at each.

### 4.3 Working Hours and Personnel

Standard working hours for construction will be 8.00am to 8.00pm Monday to Friday and 8.00am to 6.00pm on Saturday (if required) (subject to planning consent and local authority stipulated conditions) , with no works on Sundays or Bank Holidays except in exceptional circumstances or in the event of an emergency. Any deviations to these times will be agreed in advance with Clare County Council. It is expected that the civil works for the Proposed Development will require at least 10 personnel to complete the works. The electrical works will require less heavy machinery but more labour personnel, with typically 25 personnel to complete the works.



All site personnel will be required to wear Proposed Development notification labelling on high visibility vests and head protection so that they can be easily identified by all workers on-site.

## **4.4 Construction Methodology**

Initially a number of preparatory activities will be carried out. The following key works will be undertaken as part of the site preparation and pre-construction activities:

### **4.4.1 Pre-Construction Surveys**

- Prior to any commencement of any physical works, demarcation works and benchmarks on site will be established.
- Any detailed ground investigations required to support the site regrading process will be carried out and finalised.
- Prior to works commencing a pre-construction survey will be carried out photographing and noting any existing damage or defects to structures or road surfaces. A copy of this survey will be submitted to Clare County Council prior to works commencing.

### **4.4.2 Enabling Works**

Prior to construction commencing, on site demarcation of the construction site boundary will be undertaken to prevent equipment tracking outside the planning boundary. All surface water management, waste management measures etc will be put in place at the outset.

Part of the pre commencement activities will include:

- The installation of suitable protection (e.g., silt curtain) around the site boundaries to control and treat any run-off during the works.
- The erection of signage and information boards for the general public, site employees and trucks transporting materials to/from the site

A Traffic Management Plan (TMP) has been prepared for the Proposed Development. In the event ABP decides to grant approval for the Proposed Development, the final TMP will address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned by ABP. The TMP will be finalised and implemented by the appointed contractor prior to the works commencing and this will be agreed between the Developer, the Contractor and Clare County Council to ensure that traffic is managed during the works safely and with least impact.

### **4.4.3 Site Access**

The majority of the Proposed Development will be installed within the public road network and therefore will be accessed via the existing road network. Where the cable route is located on private lands, contractor(s) will be required to utilise the local public road network in the vicinity of the work area and from there utilise private access tracks where appropriate.

Some areas will require a road closure where it is not possible to safely implement a Stop/Go system. Where road closures are necessary, a suitable diversion will be implemented using appropriate signage, following consultation with Clare County Council.

Careful and considered local consultation will be carried out by the Client Liaison Officer approximately two months prior to construction works, to minimise the amount of disturbance caused during works. Prior to the commencement of construction, the contractor will assess all access routes and determine any additional access requirements which will be incorporated as part of the method statement. All plant and equipment employed during the proposed works (e.g. diggers, tracked machines, footwear etc). will be inspected prior to arrival on site and on leaving site and cleaned where necessary to prevent the spread of invasive aquatic/riparian species.

#### **4.4.4 Watercourse Crossings**

There are a total of 9 no. major watercourse crossings along the Proposed Development. See Planning Drawing **05641-DR-231** to **05641-DR-239** for locations.

#### **4.4.5 Joint Bays and Communication Chambers**

Joint bays are pre-cast concrete chambers which will be required along the Proposed Development over its entire length. They are required to join cables together to form one continuous cable. They will be located at various points along the Proposed Development approximately every 700 - 850 metres depending on gradients, bends etc. It is proposed to install 35 no. joint bays and communication chambers along the Proposed Development.

#### **4.4.6 Other Elements of the Construction Phase**

##### **4.4.6.1 Water Requirement / Water Supply**

Water needs for construction activities will be limited to dust suppression. It is proposed that this water requirement will be imported in vacuum tankers. The volumes of water required are minimal and would have no impact on existing water supply utilities.

##### **4.4.6.2 Waste Management**

All waste arising during the construction phase will be managed and disposed of in a way that ensures the provisions of the Waste Management Act 1996 (as amended) and associated amendments and regulations and the Waste Management Plan. Construction phase waste may consist of concrete, food waste and unused oil, diesel and building materials. This waste will be collected at regular intervals by a licensed waste contractor during the construction phase and taken off site to be reused, recycled and disposed of in accordance with best practice procedures at an approved facility. Plastic waste will be taken for recycling by an approved contractor and disposed or recycled at an approved facility. Soil will be reinstated into trenches where possible. In the event, there is excess material, with no defined purpose, it will be transported to an authorised waste facility.

Waste facilities in the waste study area include Clare Waste & Recycling at Tuamgraney, Inagh Central Waste Management Facility in Ballyduff Beg, Inagh and Enva, located at Smithstown Industrial Estate in Shannon, Co. Clare.



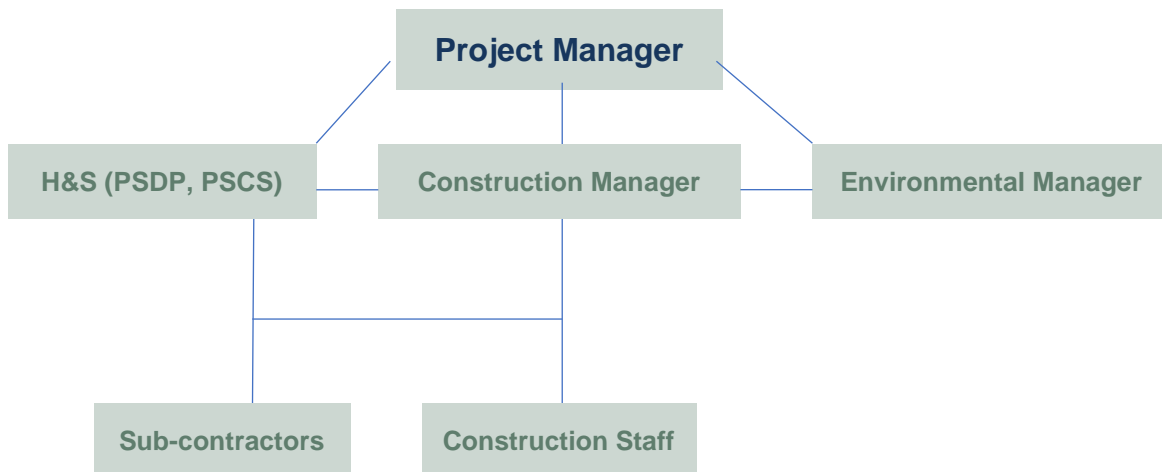
## 5. Construction & Environmental Management

### 5.1 Overview

The Contractor’s CEMP shall fully address the particular requirements outlined in this CEMP. The CEMP shall also comply with the requirements of the relevant authorities/environmental bodies. The CEMP shall be prepared by the Contractor and submitted to Clare County Council for approval prior to works commencing on-site. It shall be prepared in sufficient detail to describe the framework of the Contractor’s proposed management, control and mitigation strategy for each environmental aspect. The CEMP will include, where required, specific Method Statements for specific works (e.g. working in or near watercourses) and these will be included as an appendix. The CEMP shall be developed/updated as necessary during the course of the construction phases and will be reviewed on a regular basis with Clare County Council as necessary.

### 5.2 On-site Organisational Structure and Responsibility

The Organisational Structure for the Contractor’s Project Team is included below. This structure is defined by the Contractor and includes the names of the assigned personnel with the appropriate responsibility and reporting structure reflected.



The Contractor will select the Proposed Development Team for the construction of the Proposed Development. The Contractor’s Proposed Development Team will include an overall Proposed Development Manager, whose duties will stretch beyond the day-to-day works to budgetary, procurement and scheduling matters. The selected Construction Manager will have overall responsibility for the construction-site personnel carrying out the works and the Construction Manager will report to the Proposed Development Manager.

A competent Environmental Manager will be appointed for the duration of the works and will report to the Proposed Development Manager. The Construction Manager will communicate regularly with the Environmental Manager to ensure mitigation measures are applied to specific works. The Environmental Manager will carry out tasks as required, including installation and maintenance of sediment control measures and implementing and maintaining approved waste management control measures. The use of dedicated staff, under the direction of the Environmental Manager, will ensure the environmental controls are in situ ahead of the works on-site.

### 5.3 Duties and Responsibilities

The general role of key people on-site implementing the CEMP will be:

- The Project Manager - liaises with the Project Team in assigning duties and responsibilities in relation to the CEMP to individual members of the main contractor(s)'s project team.
- The Construction Manager - liaises with the Environmental Manager when preparing site works where there is a risk of environmental damage and manages the construction personnel and general works.
- The Design Engineer - undertakes and certifies the Design and supervises the standard of works, including geotechnical aspects (Geotechnical engineer may need to be consulted).
- The Environmental Manager - ensures that the CEMP is developed, implemented and maintained. The Environmental Manager's tasks at the construction-site are described below at **Section 5.4.2**. To ensure adequate cover of environmental tasks, waste management tasks and responsibilities, dedicated construction staff will be assigned to the Environmental Manager to implement and maintain the Sediment and Erosion Plan and any other measures required.

Other roles include:

- Health and Safety (PSDP and PSCS)
- Project Archaeologist (report to the Environmental Manager).

#### 5.3.1 Project Manager

**Name:** TBC

A Project Manager is to be appointed on behalf of the main Contractor(s) to manage and oversee the entire Proposed Development. The Project Manager is responsible for:

- Implementing of the Construction and Environmental Management Plan (CEMP);
- Implementing the Health and Safety Plan;
- Management of the construction Proposed Development;
- Liaison with the client/developer;
- Liaison with the Project Team;
- Assigning duties and responsibilities in relation to the CEMP;
- Production of construction schedule;
- Materials procurement; and
- Maintaining a site project diary.

#### 5.3.2 Environmental Manager

**Name:** TBC

The Environmental Manager is responsible for:

##### General

- Being familiar with the Proposed Development environmental commitments and requirements;

- Being familiar with baseline data gathered for the various environmental assessments and during pre-construction surveys;
- Liaising with the Proposed Development Team in assigning duties and responsibilities in relation to the CEMP to individual members of the Contractor's Proposed Development staff;
- Implementing the environmental procedures of the CEMP;
- Liaising with the Construction Manager to ensure that the control measures set out in the Schedule of Environmental Mitigation are implemented;
- Liaising with the client/developer in relation to environmental issues; and
- Auditing the construction works from an environmental viewpoint.

#### **Site-Specific Method Statements**

- Liaising with the Construction Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage. These site-specific Method statements should incorporate relevant Environmental Control Measures and take account of relevant Environmental Control Measure Sheets;
- Liaising with the Construction Manager in reviewing and updating site-specific Method Statements for all Works activities where Environmental Control Measure and Environmental Control Sheets have been altered; and
- Liaising with the Construction Manager where third party agreement is required in relation to site-specific Method Statements, Environmental Control Measures and/or Environmental Control Measure Sheets.
- Where new Environmental Control Measures are agreed as a result of third party consultation, ensuring that the CEMP is amended accordingly;
- Where new Environmental Control Measures are agreed as a result of third party consultation, the Environmental Manager should liaise with the Construction Manager in updating relevant site-specific Method Statements; and
- Where required, liaising with the Construction Manager in agreeing site-specific Method Statements with third parties.

#### **Licensing**

- Ensuring that all relevant works have (and are being carried out in accordance with) the required permits, licences, certificates, planning permissions, etc;
- Liaising with the designated licence holders with respect to licences granted pursuant to the Wildlife Act, 1976, as amended (if required); and
- Bringing to the attention of the Proposed Development, Design and Construction Team any timing and legal constraints that may be imposed on the carrying out of certain tasks.

#### **Waste Management Documentation**

- Holding copies of all permits and licences provided by waste contractors;
- Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorisation; and
- Gathering and holding documentation with the respect to waste disposal.

### **Legislation**

- Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase;
- Advising the Construction Manager of these changes; and
- Reviewing and amending the CEMP in light of these changes and bringing the changes to the attention of the Contractor's senior management and subcontractors.

### **Specialist Environmental Contractors**

- Identifying requirements for specialist environmental contractors (including ecologists, waste contractors and spill clean-up specialists) before commencement of the Proposed Development;
- Procuring the services of specialist environmental contractors and liaising with them with respect to site access and report production;
- Ensuring that the specialist environmental contractors are competent and have sufficient expertise to co-ordinate and manage environmental issues; and
- Co-ordinating the activities of all specialist environmental contractors on environmental matters arising out of the contract.

### **Environmental Induction Training and Environmental Toolbox Talks**

- Ensuring that Environmental Induction Training is carried out for all the Contractor's site personnel. The induction training may be carried out in conjunction with Safety Induction Training;
- Providing toolbox talks on Environmental Control Measures associated with Site-specific Method Statements to those who will undertake the work;

### **Environmental Incidents/Spillages**

- Prepare and be in readiness to implement at all times an Emergency Response Plan;
- Notifying the relevant statutory authority of environmental incidents;
- Carrying out an investigation and producing a report regarding environmental incidents. The report of the incident and details of remedial actions taken should be made available to the relevant authority, the Design Engineer and the Construction Manager;
- The Site Environmental Manager shall notify the Client of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Client shall be notified within 1 hour; and

### **Site Environmental Inspections and Auditing**

- Carrying out regular documented inspections of the Site to ensure that work is being carried out in accordance with the Environmental Control Measures and relevant site-specific Method Statements, etc.,
- Carrying out inspections of the site drainage system;
- Appending copies of the inspection reports to the CEMP;
- Liaising with the Construction Manager to organise any repairs or maintenance required following the daily inspection of the Site;

- Accommodate audits by the Employer and/or independent auditing consultants during the Proposed Development;
- Accommodate third party environmental auditing when required;
- During audits, the Environmental Site Manager shall make the necessary staff available during each audit and provide access to all documentation and site areas (and provide necessary induction and training to allow access where required);
- If there are any adverse findings arising from the environmental audits, the Environmental Site Manager shall be required to take prompt mitigation actions and provide written reports to the Employer detailing such mitigation; and
- The Environmental Site Manager shall notify the Employer of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Employer shall be notified within 1 hour.

#### **Environmental Records**

- The Construction Environmental Manager shall provide all CEMP documentation to the Client on completion of the site works. Reports arising during the site works, such as verification reports or waste disposal records shall be provided to the Client within one month of completion of the activity and may be subject to review.

### **5.3.3 Construction Manager**

**Name:** TBC

The Construction Manager manages all the works to construct the Proposed Development, on behalf of the Contractor. The Construction Manager reports to the Project Manager. In relation to the CEMP, the Construction Manager is responsible for:

#### **Site-Specific Method Statements**

- Liaising with the Environmental Manager in preparing site-specific Method Statements for all Works activities where there is a risk of environmental damage, by incorporating relevant Environmental Control Measures and referring to relevant Environmental Control Measure Sheets;
- Liaising with the Environmental Manager in reviewing and updating site-specific Method Statements for all Works activities where Environmental and Waste Management Control Measures and Environmental Control Sheets have been altered; and
- Liaising with the Environmental Manager where third party agreement is required in relation to site-specific Method Statements, Environmental & Waste Management Control Measures and/or Environmental Control Measure Sheets.

#### **General**

- Being aware of all Proposed Development Environmental Commitments and Requirements;
- Ensuring that all relevant information on Proposed Development programming, timing, construction methodology, etc., is communicated from the Proposed Development Manager to the Environmental Manager in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required;

- Programming and planning of excavation works and communicating this schedule to the Environmental Manager.
- Ensuring that adequate resources are provided to design and install any environmental interventions.
- Liaising with the Design Engineer and providing information on environmental management to the Design Engineer during the course of the construction phase.
- Liaising with the Proposed Development Team in assigning duties and responsibilities in relation to the CEMP to individual members of the Contractor's project staff.
- Ensuring that the Environmental Manager performs regular and frequent environmental site inspections; and
- Reviewing and approving all waste management control measures ensuring compliance with National and International Waste legislation and best practice.
- Log and respond to any environmental complaints made.

### **5.3.4 Design Engineer**

**Name:** TBC

The Design Engineer is responsible for:

- Design of the Works;
- Review and approval of relevant elements of the method statements – assist the Construction Manager with the overall review;
- Participating in Third Party Consultations; and
- Liaising with Third Parties through the Environmental Manager.

### **5.3.5 Other Roles**

#### **5.3.5.1 Health and Safety Personnel**

The Health and Safety personnel for the construction Proposed Development is appointed by the Contractor in line with the Construction Regulations:

- Carrying out duty of Project Supervisor Construction Stage (PSCS);
- Responsible for safety induction of all staff and personnel on-site;
- Implementing the Health and Safety Plan;
- Auditing and updating the Health & Safety Plan; and
- All other required legal duties.

#### **5.3.5.2 Project Archaeologist**

The Archaeologist may be appointed by the Developer or the Contractor(s) and is responsible for:

- Ensuring implementation of archaeological mitigation measures;
- Monitoring of groundworks associated with the Proposed development;

- Liaison with the Environmental Manager/Construction Manager; and
- Liaison with the Project Manager/client/developer.

### 5.3.5.3 All Site Personnel

The site personnel appointed by the Contractor are responsible for:

- Adhering to the relevant Environmental Control Measures and relevant site-specific Method Statements;
- Adhering to the Health and Safety Plan;
- Reporting immediately to the Environmental Manager and Construction Manager any incidents where there has been a breach of agreed procedures including:
  - a spillage of a potentially environmentally harmful substance;
  - an unauthorised discharge to ground, water or air, damage to a protected habitat, etc.

## 5.4 Contacts

The following tables will be populated when the Contractor is appointed,

### 5.4.1 Main Contractor Contacts

Position Title	Name	Phone	Email
Main Contractor			
Project Manager			
Construction Manager			
Design Engineer			
Environmental Manager*			
Safety (PSCS)*			
Safety Officer*			
Site Emergency Number*			
Waste Management Coordinator			
Overall Project PSDP			

*\*24 hour contact details required*

### 5.4.2 Employer Contacts

Position Title	Organisation	Name	Phone	Email
Employer	FutruEnergy Ireland	Charlie Langley		planning@futureenergyireland.ie
Employer's Representative				



### 5.4.3 Third Party Contacts

Organisation:	Position:	Name/Address	Phone:	Email Address:
Inland Fisheries Ireland			(096) 22788	galway@fisheriesireland.ie
National Parks and Wildlife Service		District Conservation Officer	(076) 100 2520	nature.conservation@chg.gov.ie
Environmental Protection Agency (EPA)		EPA Headquarters	(053) 9160600	info@epa.ie
Local Authority		Clare County Council		
Health and Safety Authority			(01) 6147000	wcu@hsa.ie
Emergency Services			999 or 112	
Others, as appropriate				

### 5.5 Auditing, Monitoring and Response

The environmental Monitoring Schedule (**Table 1**) for construction will provide for the checking of equipment, materials storage and transfer areas and specific environmental controls.

The Contractor will assign a full-time Environmental Manager who will visit the site regularly to monitor the construction activities on a day-to-day basis. The duties will include completing the required checklists (sample checklist included below) and coordinating with the relevant personnel (e.g. Design Engineer as required) ensuring all environmental monitoring is carried out.

**Table 1 Environmental Monitoring Schedule**

Aspect	Area of Inspection	Monitoring Required	Note/Checks	Frequency	Responsibility
<b>Surface Water Run-off Controls</b>	Weather Forecast	Met Éireann download	<ul style="list-style-type: none"> <li>Pre-determined rainfall trigger levels (e.g. 1 in 5 year storm event or heavy rainfall at &gt;25mm/hr)</li> </ul>	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
	Discharges from on-site sediment and erosion controls	Visual inspection	<ul style="list-style-type: none"> <li>Colour, presence of silts</li> </ul>	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
<b>Water quality monitoring</b>	Discharges from on-site sediment and erosion controls	Visual inspection	<ul style="list-style-type: none"> <li>Unacceptable level of sediment/silt on the road surface</li> <li>Presence of waste</li> </ul>	Regular/daily/weekly during the construction phase as well as during and after significant rainfall events	Environmental Manager
		Visual inspection	<ul style="list-style-type: none"> <li>Unacceptable level of sediment/silt on the road surface</li> <li>Presence of waste</li> <li>Surface Condition</li> </ul>	Daily	Project Manager
<b>Roads</b>	Fuel & Oil Storage areas	Visual inspection	<ul style="list-style-type: none"> <li>Damage to containers or ancillary equipment</li> <li>Leakages</li> <li>Unlocked storage container</li> <li>Fuels stored within bunded area</li> </ul>	Daily	Project Manager

## 5.6 Environmental Performance Indicators

The Contractor will outline the key performance indicators for the Site in gauging successful site management in the prevention of pollution and the protection of the environment.

Environmental performance indicators will include:

- Number of environmental accidents/incidents logged;
- Breach of procedure and corrective actions;
- Number of environmental complaints received; and
- Results of site audits.

The performance indicators will be communicated to all relevant personnel and sub-contractors. The review periods for analysing site performance indicators must also be specified.

### 5.6.1 Response Procedure/ Corrective Action

In the event of an environmental incident, or breach of procedure, or where a complaint is received, or in the event of encountering buried waste or contaminated soils/groundwater, the contributing factors are to be investigated and remedial action taken as necessary. The Contractor will ensure that the following response actions will take place:

1. The Project Manager/Environmental Manager must be informed of any incident, breach of procedure and/or complaint received and details must be recorded in the incident/complaint register
2. The Project Manager/Environmental Manager is to conduct/co-ordinate an investigation to determine the potential influence that could have led to the non-compliance.
3. The Project Manager/Environmental Manager is to notify and liaise with the appropriate site personnel where required, e.g. Site Environmental Manager
4. The Project Manager/Environmental Manager shall notify the Client of any complaints or environmental incidents within 24 hours of occurrence. Where significant incidents occur requiring the involvement of statutory authorities or emergency services or where any pollution events occur, the Client shall be notified within 1 hour.
5. If necessary, the Project Manager/Environmental Manager will inform the appropriate regulatory authority. The appropriate regulatory authority will depend on the nature of the incident.
6. The details of the incident will be recorded on an Incident / Complaints Form which is to record information such as the cause, extent, actions and remedial measures used to follow the incident/complaint. The form will also include any recommendations made to avoid reoccurrence of the incident.
7. The Project Manager and the Environmental Manager will be responsible for any corrective actions required as a result of the incident e.g. an investigative report, formulation of alternative construction methods or environmental sampling, and will advise the Designer and Client as appropriate.
8. The Environmental Manager is to ensure that the relevant environmental management plans/procedures are revised and updated as necessary.

### 5.6.2 Corrective and Preventative Action

Corrective Action Requests will be issued to ensure that prompt action is agreed and committed to, with a view to the effective resolution of any deviations from the CEMP requirements or any environmental issues

## 6. Environmental Management Plans

A number of Environmental Management Plans (EMP) have been prepared for managing the impacts of Construction Activities associated with the Proposed Development. See **Table 2**. These EMPs are based on identified mitigation measures as outlined in relevant chapters of the EIAR.

These plans will be implemented by the Appointed Project Manager and/or Project Contractor(s) as relevant. Once appointed, it is the Contractor’s responsibility, to update and add (where required) project specific control measures relevant to the environmental management plans and procedures. The Contractor will ensure that plans/procedures are communicated to all site staff, including sub-contractors, through induction, training and at relevant meetings.

**Table 2 Plans for Managing Impacts of Construction Activities**

Ref:	Procedure:
EMP-1	Management of Excavations
EMP-2	Surface Water Runoff Management
EMP-3	Fuels and Oils Management
EMP-4	Management of Concrete
EMP-5	Construction Noise Management
EMP-6	Construction Waste Management
EMP-7	Construction Dust Management
EMP-8	Ecological Management Plan Protection of Habitats and Fauna
EMP-9	Management of Invasive Species
EMP-10	Archaeological and Heritage Protection
EMP-11	Emergency Response
EMP-12	Site Environmental Training and Awareness
EMP-13	Monitoring and Auditing
EMP-14	Environmental Accidents, Incidents and Corrective Actions
EMP-15	Environmental Complaints

## **EMP 1: Management of Excavations**

### **Purpose**

To describe measures for the management of all excavations and excavated soil and rock on the Site.

### **Procedure**

- Use of the existing road network where possible to reduce subsoil excavation volumes;
- A minimal volume of spoil and subsoil will be removed to allow for infrastructural work to take place.
- The road surface and underlying subsoils excavated along the grid cable connection will be exported from the Proposed Development site to a licenced waste facility. Any excavated topsoil/subsoil associated with the trench and access tracks in off road sections of the Proposed Development that isn't removed off-site to a licenced facility will be temporarily stored near the excavations and reused for reinstatement works. The peat and subsoil which will be removed during the construction phase will be localised to the Proposed Development infrastructure;
- Excavation will be carried out by using excavators. Machinery will not operate directly on excavated/stockpiled soils.
- All site excavations and construction will be supervised by a suitably experienced engineer. The Contractor's method statements for each element of work will be reviewed and approved by the engineer prior to site operations.
- During directional drilling, any bentonite mix will be collected at either end of the bore within a dedicated sump. All excavated material and excess bentonite will be removed from site and brought to an authorised waste facility; and
- Once excavation of an area is complete along roads/tracks, completion the final surface dressing or dense bituminous macadam (DBM) as soon as possible.

### **Responsibility**

- The Environmental Manager will monitor the excavation areas.
- The Construction Manager will monitor vehicle movements throughout the construction phase.
- The Project Manager will oversee the phasing of the excavation and machinery movement across the Site.
- Construction personnel will be informed of the measures to prevent pollution of water courses,
- All responsibilities will be finalised by the Appointed Contractor.

## **EMP 2: Surface Water Runoff Management**

### **Purpose**

To describe measures for the management of all surface water and run-off on the Site, for the protection of watercourses and in particular, sediment and erosion control.

### **Procedure**

#### General

- Prior to commencing work on each 100-200m stretch, observe the slopes for any potential problems and preferential pathways. Notice where there could be affected areas adjacent to the site and plan accordingly - it may be necessary to install silt fencing or straw wattles to slow water and catch sediment where there is potential for site runoff to nearby watercourses.
- Implement erosion control to prevent runoff flowing across exposed ground and become polluted by sediments.
- The road surface can become contaminated with clay or other silty material during construction and cable trench works. Road cleaning will, therefore, need to be undertaken regularly during wet weather to maintain clean and safe surfaces along the Proposed Development. This will be completed using a road washer vehicle and this will be employed intermittently each day and at the end of the completion of each section of closed trench on a day to day basis.
- Protection of the riparian zone watercourses by implementing a constraints zone around stream crossings, in which construction activity will be limited to the minimum, i.e. works solely in connection with duct laying at the stream crossing;
- No concrete truck chute cleaning is permitted in this area;
- Works shall not take place at periods of high rainfall, and shall be scaled back or suspended if heavy rain is forecast;
- Plant will travel slowly across bare ground at a maximum of 5km/hr. Bog mats will be employed to protect tracked areas as necessary;
- Machinery deliveries shall be arranged using existing structures along the public road;
- All machinery operations shall take place away from the stream and ditch banks, apart from where crossings occur. Although no instream works are proposed or will occur;
- Any excess construction material shall be immediately removed from the area and taken to an appropriately licensed facility;
- No stockpiling of materials will be permitted in the constraint zones;
- Spill kits shall be available in each item of plant required to complete the stream crossing; and,
- Silt fencing will be erected on ground sloping towards watercourses at the stream crossings if required.

#### Sediment Control

- Prior to any construction activity, the Site will be inspected for areas that would be prone to siltation of nearby watercourses.
- Temporary silt fencing/silt trap arrangements will be placed within existing roadside/field drainage features along the grid connection to remove any suspended sediments from the works area. The trapped sediment

will be removed and disposed at an appropriate licenced facility. The bare ground re-seeded/reinstated immediately and silt fencing temporarily left in place if necessary.

- Any excavated topsoil/subsoil associated with the trench and access tracks in off road sections of the Proposed Development that isn't removed off-site to a licenced facility will be temporarily stored near the excavations and reused for reinstatement works.
- Disturb as little area as possible and excavate only one section of the site at a time where feasible. Backfill each section at the end of each day upon completion of the installation of the cable.
- There will be no storage of excavated soils or other materials along the route.
- All excavated material from the trenches and joint bay excavations site will be removed immediately to the licensed facility, so there will be no potential for erosion of overburden from this excavated material.
- Once excavation of an area is complete along roads/tracks, completion the final surface dressing or dense bituminous macadam (DBM) as soon as possible.

#### Directional Drilling Works

- For directional drilling the area around the bentonite batching, pumping and recycling plant will be bunded using terram (as sediment will accumulate against the surface of the terram) and sandbags in order to contain any spillages.
- Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area. Spills of drilling fluid will be cleaned up immediately and stored in an adequately sized skip before been taken off-site;
- The drilling fluid/bentonite will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used);
- The drilling process / pressure will be constantly monitored to avoid any possible leaks or breakouts into the surrounding geology or local watercourse;
- This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur then drilling will be immediately stopped;
- Any frac-out material will be contained and removed off-site.

#### Dewatering

- No significant dewatering is proposed during construction. Any pumping required will be temporary and at a very shallow depth.

#### **Monitoring**

- The Environmental Manager will walk the site each day and check the cross-drain pipes, dirty water drains and outlets, drains and silt fences for any damage or blockages. Any damage or blockages will be repaired or cleared promptly.
- As detailed above, weather forecasts will be monitored during the construction phase. The 24 hour advance meteorological forecasting service from Met Éireann will be used.

#### **Responsibility**

The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out. Where standards are breached and remedial action is



taken, an investigation must be carried out in conjunction with the Construction Manager, and further samples must be taken to verify that the situation has returned to normal.

The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations and that booms for watercourses are long enough and have adequate anchorage.

The Construction Manager (or a designate) is responsible for ensuring the spill kits are adequately stocked and should inform the Environmental Manager when items have been used.

***Details and Responsibilities for Sediment and Erosion Control to be finalised by Appointed Contractor***

### **EMP 3: Fuel and Oils Management**

#### **Purpose**

Construction machinery and associated equipment will be the principal sources of pollutants such as oil, lubricants, fuel, and hydrocarbons. The purpose of this plan is to describe measures for the management of all fuel and oils on-site for the protection of watercourses from any spills.

#### **Procedure**

##### General

- Due to the ease of access along the grid connection route, it is unlikely that any refuelling on site will be necessary. Nevertheless, if required, storage areas will be bunded appropriately for the fuel storage volume for the time period of the construction and fitted with a storm drainage system and an appropriate oil interceptor;
- The plant used during construction will be regularly inspected for leaks and fitness for purpose;
- All waste tar material arising from the chipping and resurfacing of the roads will be removed off-site and taken to licenced waste facility;
- Spill kits will be available to deal with any accidental spillage from plant or equipment.

##### Directional Drilling

See EMP 2.

#### **Responsibilities**

- The Construction Manager and Environmental Manager are responsible for ensuring Fuel and Oils are managed in line with this procedure.
- The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations and that booms for watercourses are long enough and have adequate anchorage.
- The Construction Manager (or a designate) is responsible for ensuring the spill kits are adequately stocked and should inform the Environmental Manager when items have been used.
- The Contractor, in updating the CEMP, must designate personnel to the tasks relating to Fuels and Oil, as outlined above.

#### **Reference**

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

## **EMP 4: Management of Concrete**

### **Purpose**

To reduce the potential for cementitious material entering the sewer / discharge points, concrete pours will be supervised by the Construction Manager, a suitably qualified Engineer and/or the Environmental Manager.

The purpose of this plan is to describe measures for the management of concrete on-site for the protection of natural resources from any spillages.

### **Procedure**

- No batching of wet-cement products will occur on site. Ready-mixed supply of wet/semi dry lean mix concrete products and where possible, emplacement of pre-cast elements, will take place;
- Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water practicable. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water will be undertaken at lined cement washout ponds;
- Weather forecasting will be used to plan dry days for pouring concrete;
- The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event;
- To reduce the potential for cementitious material entering watercourses, concrete pours will be supervised by the Construction Manager, a suitably qualified Engineer and/or the Environmental Manager;
- The Construction Manager will ensure that the area of the pour is completely drained of water before a pour commences.
- To reduce the volume of cementitious water, washout of concrete trucks will not take place on site. Concrete trucks will be washed out off site.

### **Responsibilities**

- The Environmental Manager is responsible for ensuring that appropriate water pollution prevention measures are put in place and that water sampling is carried out. Where standards are breached, he/she should carry out an investigation and in conjunction with the Construction Manager, he/she should ensure remedial action is taken and further samples taken to verify that the situation has returned to normal.
- The Environmental Manager is responsible for ensuring spill kits are readily available in vulnerable locations and that booms for watercourses are long enough and have adequate anchorage.

## EMP 5: Construction Noise Management

### Purpose

The construction phase of the Proposed Development has the potential to increase noise levels at noise sensitive locations surrounding the Site. The purpose of this plan is to describe measures for the management of impacts from construction noise.

### Procedure

#### Construction Phase

Best practice in the form of BS5228 –1&2:2009 + A1 2014, *Code of Practice for the Control of Noise and Vibration on Construction and Open Sites* will be adopted during the construction phase in order to minimise the noise generated by construction activities and nuisance to neighbours including the following:

- A pre-construction commitment to managing nuisance noise will be agreed through notification and consultation with affected parties, if deemed necessary.
- Working hours at the site during the construction phase will be limited to Standard working hours for construction will be 8.00am to 8.00pm Monday to Friday and 8.00am to 6.00pm on Saturday (if required) (subject to planning consent and local authority stipulated conditions) , with no works on Sundays or Bank Holidays except in exceptional circumstances or in the event of an emergency. Any deviations to these times will be agreed in advance with Clare County Council.
- Construction contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations, 1988 as amended in 1990 and 1996 (S.I. No. 320 of 1988, S.I. No. 297 of 1990 and S.I. No. 359 of 1996), and the Safety, Health, and Welfare at Work (Control of Noise at Work) Regulations, 2006 (S.I. No. 371 of 2006).

The main control measures will be control of noise at source using the following methods in line with Clause 8 'Control of noise' of BS 5228-1:2009+A1:2014:

- Operators of all mobile equipment will be instructed to avoid unnecessary revving of machinery (Clause 8.2.1 General).
- Use of appropriate plant and equipment where possible with low noise level generation where possible (Clause 8.2.2 Specification and substitution).
- All construction plant to be used on site should have effective well-maintained silencers and mufflers (in the case of pneumatic drill) (Clause 8.2.3 Modification of existing plant and equipment).
- Noise generating equipment will be located as far as possible away from local noise sensitive areas identified (Clause 8.2.5 Use and siting of equipment); and
- Regular and effective maintenance of site machinery including a full maintenance schedule to ensure that all pieces of equipment are in good working order. With efficient use of well-maintained mobile equipment, considerably lower noise levels than those predicted can be attained (clause 8.2.6 Maintenance).

In addition, the following best practice measures are proposed:

- Training of site staff in the proper use and maintenance of tools and equipment;
- Avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment;

- Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum;
- Plant start-up will be sequential rather than all together;
- Internal access tracks to be well maintained;
- Plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive locations; and
- Drop heights for materials such as gravels will be minimised whenever practicable.

#### **Responsibility**

- The Construction Manager will be familiar with the noise sensitive receptors and alert the Environmental Manager in good time prior to work commencing in the areas closest to any noise sensitive receptors.
- The Environmental Manager will review any relevant planning conditions in updating this plan.

#### **References**

*BS5228 –1&2:2009, Code of Practice for the Control of Noise and Vibration on Construction and Open Sites*

IOA GPG Supplementary Guidance Note 5: *Post Completion Measurements* (July 2014).

## **EMP 6: Construction Waste Management**

### **Purpose**

During construction there will be approximately 22,204 m<sup>3</sup> of material excavated.

The road surface and underlying subsoils excavated along the grid cable connection will be exported from the Proposed Development site to a licenced waste facility. Any excavated topsoil/subsoil associated with the trench and access tracks in off road sections of the Proposed Development that isn't removed off-site to a licenced facility will be temporarily stored near the excavations and reused for reinstatement works.

Road excavation will generate small quantities of tarmacadam which will require off-site disposal by a permitted waste contractor to one of the listed licensed facilities. Available facilities include Clare Waste & Recycling at Tuamgraney, Inagh Central Waste Management Facility in Ballyduff Beg, Inagh and Enva, located at Smithstown Industrial Estate in Shannon, Co. Clare.

The purpose of the plan is to describe measures for the management of all wastes associated with the construction works.

### **Procedure**

#### General

- All waste arising during the construction phase will be managed and disposed of in a way that ensures the waste hierarchy in Council Directive 98/2008/EC on waste and section 21A of the Waste Management Act 1996, as amended, as follows: (a)Prevention; (b)re-use; (c)Recycling; (d)Other recovery (including energy recovery); and (e) Disposal.
- All waste to be removed from site is to be undertaken by authorised waste contractors and transported to an authorised facility in accordance with best practice.

## **EMP 7: Construction Dust Management**

### **Purpose**

The main air quality impacts will be associated with dust generation during construction works. The purpose of this plan is to describe the measures for the management of nuisance impacts on air quality from construction generated dust.

### **Procedure**

The potential for dust to be emitted depends on the type of construction activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. The majority of any dust produced will be deposited close to the potential source and any impacts from dust deposition will typically be within several hundred metres of the construction area.

It is not envisaged that a dust monitoring nor a sampling programme is required for this site. Ongoing good practice measures for the management of dust on-site is to be implemented as set out below. Ongoing visual monitoring of dust by Site Management will take place.

#### Construction phase generated dust can be minimised by the following measures:

- The use of water as a dust suppressant, e.g., a water bowser to spray access road and compound hardcore areas during any extended dry periods when fugitive dust emissions could potentially arise.
- Public roads will be inspected regularly for cleanliness and cleaned as necessary.
- All loads entering and leaving the site will be covered during dry periods if dust becomes a nuisance on site.
- Control of vehicle speeds passing over access road within the Site.
- Where necessary, site stockpiling of materials will be designed and laid out to minimise exposure to wind.
- Regular site inspections will take place to examine dust measures and their effectiveness.

#### Construction traffic emissions will be reduced using the following measures:

- Ensure regular maintenance of plant and equipment. Carry out periodic technical inspection of vehicles to ensure they perform most efficiently.
- Implementation of the Traffic Management Plan to minimise congestion; and
- All site vehicles and machinery to be switched off when not in use - no idling.

### **Monitoring**

Public roads in the vicinity of the Site will be regularly inspected for cleanliness and cleaned, as necessary.

### **Responsibility**

- The Environmental Manager is responsible for reviewing the site Dust Minimisation Plan.
- The Construction Manager is responsible for:
  - Organising dust suppression through use of bowsers and cleaners
  - Plan site layout so that machinery and dust causing activities are located away from receptors as far as possible.
  - Keep site fencing, barriers and scaffolding clean using wet methods.
  - Remove materials that have the potential to produce dust from site as soon as possible.



- Cover seed of fence stockpiles to prevent wind whipping.
- Ensure all vehicles switch off their engines when stationary – no idling vehicles.
- Use enclosed chutes and covered skips.
- The Project Manager is responsible for:
  - Recording all dust and air quality complaints, identifying causes and taking appropriate measures to reduce emissions in a timely manner
  - Make a compliant log available to Clare County Council when requested
  - Record any exceptional incidents that cause dust or air emissions

### References

‘Control of Dust from Construction and Demolition Activities’, UK British Research Establishment (BRE).

‘Environmental Good Practice on Site’, Construction Industry Research and Information Association (CIRA).

‘Environmental Management Plans’, Institute of Environmental Management and Assessment (IEMA).

‘Guidelines for the Creation, Implementation and Maintenance of an Environmental Operating Plan’ National Roads Authority of Ireland (NRA).

## **EMP 8: Ecological Management Plan for the Protection of Habitats and Fauna**

### **Purpose**

The purpose of this plan is to describe measures for the management and protection of habitats and fauna on the Site.

### **Procedure**

Please see EMP 1 to 4 for control measures in relation to water quality.

#### General

- Hedgerows / treelines and other semi-natural habitats that occur in close proximity to proposed works will be protected from accidental damage; and
- During construction, all site works (including machinery movements, storage of excavated material etc.) will be confined to the development footprint.

#### Habitats

- The area of degraded upland blanket bog that will be directly impacted (lost) at the northern extent of the Proposed Development site will be minimised by marking out the area where works are to take place with stakes and fencing to prevent access beyond this area.
- Spoil from excavations will not be deposited on peatland. It will be managed as outlined in Chapter 2.
- There is potential for loss of treeline habitat turning north at chainage 17500m for a maximum of 30 m. Where there is scope for the Proposed Development to avoid mature trees within treeline habitat such opportunities will be taken.

#### Construction Works in proximity to Designated Natura 2000 sites

A full toolbox talk will be given by the Environmental Manager before works begin to ensure that all workers are fully understanding of their responsibilities on-site regarding the sensitivity of the Site as part of two designated Natura 2000 sites: Slieve Bernagh SAC and Slieve Aughty Mountains SPA, and the potential ecological impacts and mitigation measures in place.

- Given the designated Natura 2000 status of Slieve Bernagh SAC and Slieve Aughty Mountains SPA, no water is to be abstracted as part of the proposed works. Water will be brought to the Site in a bowser by the Contractor.
- The boundary of the SAC/SPA in relation to the Site will be clearly indicated in order to prevent unnecessary ingress to these designated sites by construction-related machinery.

### **Monitoring**

- In the unlikely event that protected faunal species are found actively using the Site for breeding/roosting during the construction phase, works will cease immediately, and the area will be cordoned off until advice is sought from a suitable qualified expert / NPWS.

### **Responsibility**

- Environmental Manager
- Construction Manager

## EMP 9: Management of Invasive Species

### Purpose

Two Invasive alien species (IAS) listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011, (as amended) were recorded within the study area: Japanese Knotweed (*Fallopia japonica*) and Rhododendron. One stand of Giant Rhubarb (*Gunnera tinctoria*) was observed in the proximity of the Proposed Development and two stands of Himalayan Knotweed, but both of these are outside of the study area. Cherry laurel (*Prunus laurocerasus*) was recorded at a single location within the study area.

This EMP describes measures for the management of invasive species on site.

### Procedure

#### Invasive Alien species

Where IAS occur at one side of the road along the Proposed Development, the cable will be installed at the roadside opposite the IAS. It is noted that the roots of Japanese knotweed can extend up to 7 meters from visible overground vegetation so works must take place accordingly i.e., implement exclusion zones.

The management of Rhododendron, Cherry laurel and the Japanese Knotweed will be subject to containment.

See standalone Invasive Alien Species Management Report.

### Responsibility

- Project Manager
- Environmental Manager
- Construction Manager

### References

- Information on invasive species is provided in the National Road Authority (NRA) (now Transport Infrastructure Ireland (TII))<sup>1</sup>, and Invasive Species Ireland (ISI)<sup>2</sup> documents provided in Annexes I and II, in relation to identification, control and eradication of Japanese Knotweed.
- 'IFI Biosecurity Protocol for Field Survey Work' (IFI, 2010)
- 'Disinfection of scuba diving equipment' (IFI, 2011)
- 'Invasive species biosecurity guidelines for boaters' (IFI, 2013)

---

<sup>1</sup> <http://www.tii.ie/technical-services/environment/construction/Management-of-Noxious-Weeds-and-Non-Native-Invasive-Plant-Species-on-National-Road-Schemes.pdf>

<sup>2</sup> <http://invasivespeciesireland.com/>

## **EMP 10: Archaeological and Heritage Protection**

### **Purpose**

To describe measures for the management and protection of archaeological and cultural heritage on the Site.

### **Procedure**

- Where the proposed development scheme passes through the zone of notification for recorded monuments (AH03, AH07, AH10, AH11, AH12, AH14), these excavations will be subject to monitoring by a suitably qualified archaeologist.
- If any features of archaeological potential are discovered during the course of the works the Department of Housing, Local Government and Heritage (DoHLGH) will be informed immediately and further mitigation will be required, such as preservation in-situ or by record. Any further mitigation will require the approval of the DoHLGH.

### **Responsibility**

- Project Manager
- Environmental Manager
- Construction Manager

## **EMP 11: Emergency Response**

### **Purpose**

To describe measures for the prevention of an environmental accident or incident and the response required to minimise the impact of such an event.

### **Procedure**

#### General

In the event of an environmental emergency, all personnel will react quickly and adhere to this procedure.

All site personnel will be inducted in the provisions of the Emergency Response Plan.

The following outlines some of the information, on the types of emergency, which must be communicated to site staff:

- Release of hazardous substance – Fuel and oil spill;
- Concrete spill or release of concrete or silt;
- Flood event – extreme rainfall event;
- Environmental buffers and exclusion zones breach;
- Housekeeping of materials and waste storage areas breach;
- Stop works order due to environmental issue or concern (threat to archaeological or ecological feature); and
- Fire on-site (cross-reference site Safety Emergency Plan as appropriate).

If any of the above situations occur; the Emergency Response Plan is activated. The Environmental Manager will most likely be responsible for overseeing the Emergency Response Plan (to be confirmed by the Appointed Contractor(s)) and will be prepared and ready to implement the plan at all times. The Environmental Manager will be immediately informed and report to the scene. He / she must be aware of the:

- Nature of the situation – brief description of what has happened;
- Location of the incident;
- Whether any spill has been released; and
- Whether the situation is under control.

#### Oil Spillages

The following list outlines issues likely to be appropriate for inclusion the plan:

- Site staff will report the spillage immediately to the Environmental Manager or Construction Manager;
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Clare County Council;
- Where possible, the source of pollution will be identified;
- Switch off all sources of ignition;
- Stop the spillage spreading:

- Use absorbent materials from the spill kit to mop up the spill (sand or absorbent materials should be used rather than detergents);
- Place boom across watercourse or in nearby downstream existing drains as a precaution;
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems;
- If the spill has already reached drains, block the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains with oil absorbent booms, which will prevent oils flowing into the existing drains;
- Shovel contaminated sand/earth/absorbent granules into sacks or skips; and
- A specialist oil removal company should remove pooled oil.

#### Concrete Spillages

The following list outlines issues likely to be appropriate for inclusion in such a plan:

- Site staff will report the concrete spillage immediately to the Environmental Manager or Construction Manager;
- Where relevant, the Environmental Manager will report the spillage to Inland Fisheries Ireland and Clare County Council;
- If there is a risk of concrete spreading into the drainage system, the inlet of the dirty water cross pipes in the nearby drainage outflow points on the roadside drains will be blocked using the absorbent booms, which will prevent concrete flowing into the existing drains;
- Do not wash spillage into drainage system. Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems;
- If the spill has already reached drains, acid may be added to the drains by the Environmental Manager to neutralise the alkalinity of the concrete; and

#### Contacts

As an Environmental Control Measure, the Environmental Manager will append the relevant contact details to the Emergency Response Plan document. Examples of such contact details include:

- Environmental Manager
- Specialist oil removal company
- Clare County Council
- Inland Fisheries Ireland
- National Parks and Wildlife Service

#### Location of Emergency Spill Kits

- A map indicating the location of all emergency spill kits will be attached to the Emergency Response Plan document.
- Emergency oil spill kits will also be carried in all site vehicles and machinery.

#### **Responsibility**

- The Environmental Manager will prepare and finalise an Emergency Response Plan to be ready to respond to any incident.
- All site personnel will report any spillages of oil or chemicals to the Environmental Manager and Construction Manager immediately.
- As appropriate, the Environmental Manager will report the spillage to the Regional Fisheries Board, Clare County Council and any other relevant authority.

***Details of Emergency Response Plans to be finalised by Appointed Contractor***

## EMP 12: Site Environmental Training Awareness

### Purpose

To describe measures for informing the public of restricted access to the construction-site and the training of all site personnel in the protection of the environment and the relevant controls.

### Procedure

#### General

Site signage will be provided at the entrance to the site to inform the public that access to the site is restricted to those directly involved in the construction works.

An initial site environmental induction and ongoing training will be provided to communicate the main provisions of the CEMP including this EMP to all site personnel. Two-way communication will be encouraged to promote a culture of environmental protection.

The following outlines some of the information which will be communicated to site staff:

- Environmental procedures of the CEMP;
- Housekeeping of materials and waste storage areas;
- Environmental Emergency Response Plan.

#### Housekeeping and Storage of Hazardous Materials

- Hazardous materials marked with the following symbols will only be stored in a secure storage container in the temporary site construction compounds.



- Sub-contractors will provide a copy of the Material Safety Data Sheets for all hazardous substances brought on-site.

All finalised CEMP policies will be adhered to, in the management of fuels and oils, concrete, and installation of sediment and erosion controls and drainage features. All finalised details will be communicated with site personnel. Environmental Training including spill kit training, installation of silt fence training is to be provided by the Appointed Contractor(s). Environmental training records will be retained in the site office.

### Responsibility

- Construction Manager
- Environmental Manager
- All site personnel

#### ***Details of Induction and Training to be finalised by Appointed Contractor***



## **EMP 13: Monitoring and Auditing**

### **Purpose**

To describe measures for environmental monitoring during the construction works and audit of control measures to ensure environmental protection.

### **Procedure**

#### General

All mitigation measures, any planning conditions and relevant construction methods will be monitored on-site. The Contractor will nominate an Environmental Manager for the works. The Environmental Manager will provide Audit Checklists to ensure regular checks of the Site's control measures for the ongoing protection of the environment.

Monitoring will be carried to ensure adherence with the following.

EMP-1 Management of Excavations

EMP-2 Surface Water Runoff Management

EMP-3 Fuels and Oils Management

EMP-4 Management of Concrete

EMP-5 Construction Noise Management

EMP-6 Construction Waste Management

EMP-7 Construction Dust Management

EMP-8 Ecological Management Plan Protection of Habitats and Fauna

Checklists for daily, weekly or monthly site audits will be finalised by the Environmental Manager and the relevant personnel informed of their duties. Checklists will include (but are not limited to) confirmation that fuel is stored appropriately, waste management rules are adhered to, all environmental buffers are maintained, Surface water and run-off control measures of the are in place and functioning, and concrete chute wash-out procedure is being followed. Checklists will be finalised with the Contractor's EOP.

All environmental records, including completed checklists, will be retained at the site office.

### **Responsibility**

- Project Manager
- Environmental Manager
- Construction Manager

*Details of Monitoring Procedure and Checklists to be finalised by Appointed Contractor's Environmental Manager*

## **EMP 14: Environmental Accidents, Incidents and Corrective Actions**

### **Purpose**

To describe measures for the recording, investigating and close-out of any environmental accidents or incidents on the Site.

### **Procedure**

- The Environmental Manager or Construction Manager will be contacted as soon as possible where there is any incident that carries the possibility of negative environmental consequences (e.g. minor oil leakage or blockage of drainage pipe).
- The Emergency Response Plan and standard emergency procedures will be applied to get the incident under control and prevent injury or loss of life in the first instance.
- Work in the area will be halted and the Environmental Manager will be called to the scene to assess the situation and to decide on initial responses and remedial measures.
- Once the situation is under control, the environmental accident or incident will be recorded, and the cause investigated.
- Any remedial action required will be taken to mitigate any damage and prevent a reoccurrence.
- Corrective actions will be communicated to personnel and sub-contractors where relevant – particularly where it results to a change in procedure.

### Example list of environmental accidents & incidents:

- Accidents involving large spill of fuel or concrete from delivery truck (emergency response required)
- Spills of fuel and oil (minor);
- Waste or rubbish left around the Site (not in dedicated waste areas);
- Breach of any buffers (archaeological, ecological, watercourse);
- Failure of any control measures (silt fences collapsed in a storm);
- Concrete chute wash out in a non-dedicated area;
- Unplanned vehicle movement off the access tracks; and
- Unplanned vehicle movement within a buffer zone.

### **Responsibility**

- Site staff will contact the Environmental Manager or Construction Manager as soon as possible where there is any incident that carries the possibility of negative environmental consequences.
- The Environmental Manager is responsible for alerting the relevant authorities.

*Details of Environmental Accidents, Incidents and Corrective Actions Procedure, including a chain of responsibility, to be finalised by Appointed Contractor and communicated to all personnel and sub-contractors.*

## **EMP 15: Environmental Complaints**

### **Purpose**

To describe measures for the recording and resolving complaints by third parties, including local residents or members of the public.

### **Procedure**

#### General

A complaints procedure will be established for the duration of the construction phase. Any complaints received regarding alleged noise, or any other complaint will be investigated immediately. Details of the complainant, the complaint (time of occurrence and nature of noise/vibration/other) and follow up action will be logged in the complaints record. The Project Manager will develop and implement an appropriate queries/complaints procedure. Records will include full details of the concerns expressed and ensure that a formal assessment is commenced of the reported concern.

The Project Manager will also discuss complaints with and oversee an initial response to the person who has submitted the complaint/concern confirming its receipt. The Project Manager will liaise with the environmental manager and an investigation to assess the issue of concern will be carried out and decisions made to see what corrective and/or preventive action, or further investigation is necessary. With overall responsibility for complaints, the Project Manager will respond within a reasonable timescale and maintain records of all correspondence. If significant corrective action and external stakeholder involvement is required the site manager/Project Manager will oversee all elements of the process.

Complaints that may be received will be logged, assessed and appropriate action taken as soon as practical. It will be critical to the success of the Proposed Development that key issues are properly addressed from the outset to create a good working relationship and an integrated team approach to resolving potential issues before they arise

This procedure includes:

- Recording of any complaints to a Site Log;
- Follow up by the relevant site representative – Environmental Manager;
- Remedial measures where required;
- Ongoing communication with complainant to confirm resolution; and
- Any required training or communication with site personnel and sub-contractors as a result.

The out of hours contact number for the Site is: **TBC**

### **Responsibility**

- Project Manager
- Environmental Manager
- Construction Manager