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# East Limerick Substation Development

## Construction Environmental Management Plan (CEMP)

Prepared for  
Harmony Solar East  
Limerick Limited

Date  
September 2026

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# Contract

|                     |                                               |
|---------------------|-----------------------------------------------|
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This Report describes work commissioned by Harmony Solar East Limerick Ltd, by an instruction dated 13/12/2024. The Client's representative for the contract was Fred Tottenham of Harmony Solar East Limerick Ltd. Tara Saccardo of JBA Consulting carried out this work.

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## Abbreviations

|       |                                                            |
|-------|------------------------------------------------------------|
| AIA   | Archaeological Impact Assessment                           |
| BESS  | Battery Energy Storage System                              |
| CEMP  | Construction Environmental Management Plan                 |
| CIRIA | Construction Industry Research and Information Association |
| CTMP  | Construction Traffic Management Plan                       |
| EclA  | Ecological Impact Assessment                               |
| ECoW  | Ecological Clerk of Works                                  |
| EPA   | Environmental Protection Agency                            |
| IFI   | Inland Fisheries Ireland                                   |
| INNS  | Invasive Non-Native Species                                |
| IPP   | Integrated Pest Management Plan                            |
| NPWS  | National Parks and Wildlife Service                        |
| oCTMP | Outline Construction Traffic Management Plan               |
| OHL   | Overhead Line                                              |
| OSi   | Ordnance Survey Ireland                                    |
| SID   | Strategic Infrastructure Development                       |
| SuDS  | Sustainable Drainage Systems                               |
| TTA   | Traffic and Transport Assessment                           |

# 1 Introduction

This Construction Environmental Management Plan (CEMP) has been prepared for a proposed substation development within the townlands of Gotoon, Coolscart and Kilfrush in East Limerick (hereafter referred to as "Proposed Substation Development").

This CEMP defines the project-specific environmental measures that are to be put in place and procedures to be followed for the scope of construction works, both permanent and temporary, for the project. This plan and methodology seek to demonstrate how works on the project can be delivered in a logical, sensible and safe sequence with the incorporation of specific measures to mitigate the impact on people, property and the environment.

Any constraints and mitigation measures will be required to be interrogated by the contractor as part of the tender process and the Construction-Phase CEMP to be developed by the contractor as part of their methodology to complete the works. Approval of the Construction-Phase CEMP, to be developed by the contractor, will be required prior to commencing works on site. This will be approved by the client and their environmental team, and by the Local Authority if required following the planning application decision and/or prior to commencement of works - for example, if this is required by a condition in the planning permission.

This CEMP is developed with all information available at the timing of writing. It is noted that additional information may be required to feed into the Construction-Phase CEMP, for example if the planning authority were to impose conditions on the development that would need to be included, or if regulations change between now and when the project commences construction. Similarly, some of the companies who will work on the project, or individuals within these companies are not yet known. For that reason, contractor will develop a Construction-Phase CEMP prior to works commencing on site. This Construction-Phase CEMP will, at a minimum, include all measures included in this CEMP and more specific information that is known at the time it is produced.

This review of construction activities covers a description of:

- Duration and phasing;
- Site preparation;
- Construction methods;
- Materials source and transportation;
- Employment and accommodation;
- Dust, noise and traffic;
- Construction safety;
- Waste disposal; and
- Services requirements.

The CEMP is an integral part of the site health, safety, environmental and quality management system and constitutes a component of the Construction Health and Safety

Plan documentation. The CEMP is also subject to the requirements of the site quality management system with respect to documentation control, records control and other relevant measures.

In the event of an accident or emergency on site during the construction period, the CEMP will be reviewed, and procedures amended if necessary. All personnel and sub-contractors will be made aware of the CEMP during the toolbox talks. The site manager or his environmental manager will be responsible for maintaining and updating the approved document.

## **1.1 Applicant**

Harmony Solar East Limerick Limited is owned by Harmony Solar Ireland Ltd. and ESB Solar (Ireland) Ltd. Harmony Solar Ireland Ltd. is an independent renewable energy developer - the company has an extensive portfolio of projects throughout Ireland and has considerable knowledge in the development of solar energy projects. ESB Solar (Ireland) Ltd. is a member of the ESB group of companies.

## **1.2 Description of Development**

The Proposed Substation Development comprises a 220kV Loop In Loop Out (LILO) substation, a Battery Energy Storage System (BESS), associated grid infrastructure, access tracks, drainage and ancillary works within a 17.02 ha site. A full description is provided in Section 3.

## 2 Legislation, Guidance, and Reports Referenced

Relevant legislation and best practice guidance that have been considered includes but is not limited to the following.

### 2.1 National and International Legislation

- Water Framework Directive(2000/60/EC), as amended;
- European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009);
- Water Environment (Abstractions and Associated Impoundments) Act 2022, as amended;
- European Communities Water Environment (Abstractions and Associated Impoundments) Regulations 2024 (S.I. No. 419 of 2024);
- Habitats Directive (92/43/EEC), as amended;
- Birds Directive (2009/147/EC), as amended; and
- Wildlife Act, 1976 (S.I. No. 39 of 1976), as amended.

### 2.2 Environmental Liability Regulations

The European Communities (Environmental Liability) Regulations (S.I. No. 547 of 2008) supplement existing National and European Legislation to achieve the prevention and remediation of environmental damage. Environmental damage under the Environmental Liability Regulations 2008 means:

- Water damage that has significant adverse effects on water status under the Water Framework Directive (2000/60/EC);
- Land damage that creates a significant risk to human health as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms; and
- Damage to protected species and natural habitats.

The Regulations represent an overarching piece of legislation that can be used in concert with all the existing powers of the Environmental Protection Agency (“EPA”) existing powers but will only be used in the appropriate circumstances when environmental damage has occurred as a result of an incident.

### 2.3 Best Practice Guidelines

The CEMP was prepared in accordance with the “Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Waste Projects” (EPA, 2021) (the “EPA Guidelines”).

In addition to the above, the following guidelines were consulted and constitute a baseline of the criteria to be used by the contractor in preparing their Method Statements and Construction-Phase CEMP:

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters. Inland Fisheries Ireland (“IFI”), 2016;
- Fishery guidelines for Local Authority works. Department of Marine and Natural Resources 1998;
- Construction Industry Research and Information Association (“CIRIA”) – Guideline Document C532 – Control of Water Pollution from Construction Sites;
- CIRIA – Guideline Document C624 – Development and Flood Risk – Guidance for the Construction Industry;
- CIRIA – Guidance Document C515 – Control of groundwater for temporary works (Somerville et al., 1986);
- CIRIA – Guidance Document C811 – Environmental good practice on site guide (Kwan et al, 2023);
- CIRIA – Guidance Document C750D – Groundwater control: design and practice (Preene et al., 2016);
- CIRIA – Guidance Document SP156 – Control of water pollution from construction sites - guide to good practice;
- CIRIA – Guidance Document C648 – Control of water pollution from linear construction projects & Site Guide C649;
- NetRegs Guidance for Pollution Prevention for works and maintenance in or near water (NetRegs, February 2018);
- PPG6 Pollution Prevention Guidelines for working at construction and demolition sites (Environmental Agency, 2012);

## 2.4 Reports Referenced

Numerous reports were prepared by various consultants as part of the application process. The following reports were referenced in the preparation of this CEMP:

- Hydrology and Hydrogeology Assessment by JBA Consulting
- Ecological Impact Assessment (EclA) by JBA Consulting
- Natura Impact Statement by JBA Consulting
- Flood Risk Assessment by JBA Consulting
- Appropriate Assessment Screening by JBA Consulting
- Report to inform Environmental Impact Assessment Screening Determination by Gravis Planning
- Planning and Environmental Report by Gravis Planning
- Glint and Glare Technical Analysis by Macro Works Ltd
- Landscape & Visual Impact Assessment by Macro Works Ltd
- Archaeological Testing Report by John Cronin & Associates
- Drainage Management Plan by JBA Consulting

- Noise Assessment by AWN Consulting
- Traffic and Transport Assessment by MPA Consulting Engineers
- Outline Construction Traffic Management Plan by MPA Consulting Engineers
- Archaeological Impact Assessment by John Cronin & Associates
- Outline Construction Methodology by TLI Group
- Outline Battery Safety Management Plan by Enertis

## 3 Site and Project Details

### 3.1 Site Description and Location

The site of the Proposed Substation Development is situated in the townlands of Gotoon, Coolscart, and Kilfrush in County Limerick. The Overall Project further extends to the townlands of Ballyhaukish, Millfarm, Coolalough, Ballycahill, Newtown and Knocklong.

The Proposed Substation Development comprises an area of 17.02 ha. The site is located south-west of the village of Hospital and north-west of Knocklong village.

The Proposed Substation Development land is in agricultural use at present. There is an existing agricultural building located within the south-east corner of the parcel, and a derelict shed structure located in the northern area of the parcel. The parcel benefits from existing hedgerows along the field boundaries.

The site lies entirely within the 'Agricultural Lowlands' Landscape Character Area (LCA) as designated within the Limerick Development Plan 2022-2028.

There are no residential dwellings within the red line boundary for the Proposed Substation Development. There are, however, residential properties and farm holdings within the surrounding area, including properties located along the L1509 public road to the south of the site and within the wider rural area between Hospital and Knocklong.

The land parcel associated with the Proposed Substation Development is within four private landownerships. Agreements are in place between the landowners and the Applicant to facilitate the construction and operation of the Proposed Substation Development on these lands. Letters of consent from the landowners has been provided to the Applicant and will be submitted with the SID application.

#### 3.1.1 Site History

Existing and historic land use at the site is primarily for agriculture. Ordnance Survey (OSi) historic 6-inch maps were consulted, with no previous land uses or potential sources of contamination evident on them.

A review of the planning history identified two planning applications within the Proposed Substation Development site. This includes the current application for the Proposed Solar Farm Development, submitted to Limerick City and County Council, which overlaps with the Proposed Substation Development site, and an application submitted in 1996 for the construction of a two-storey dwelling, which was subsequently refused.



Figure 3-1: Proposed Substation site location

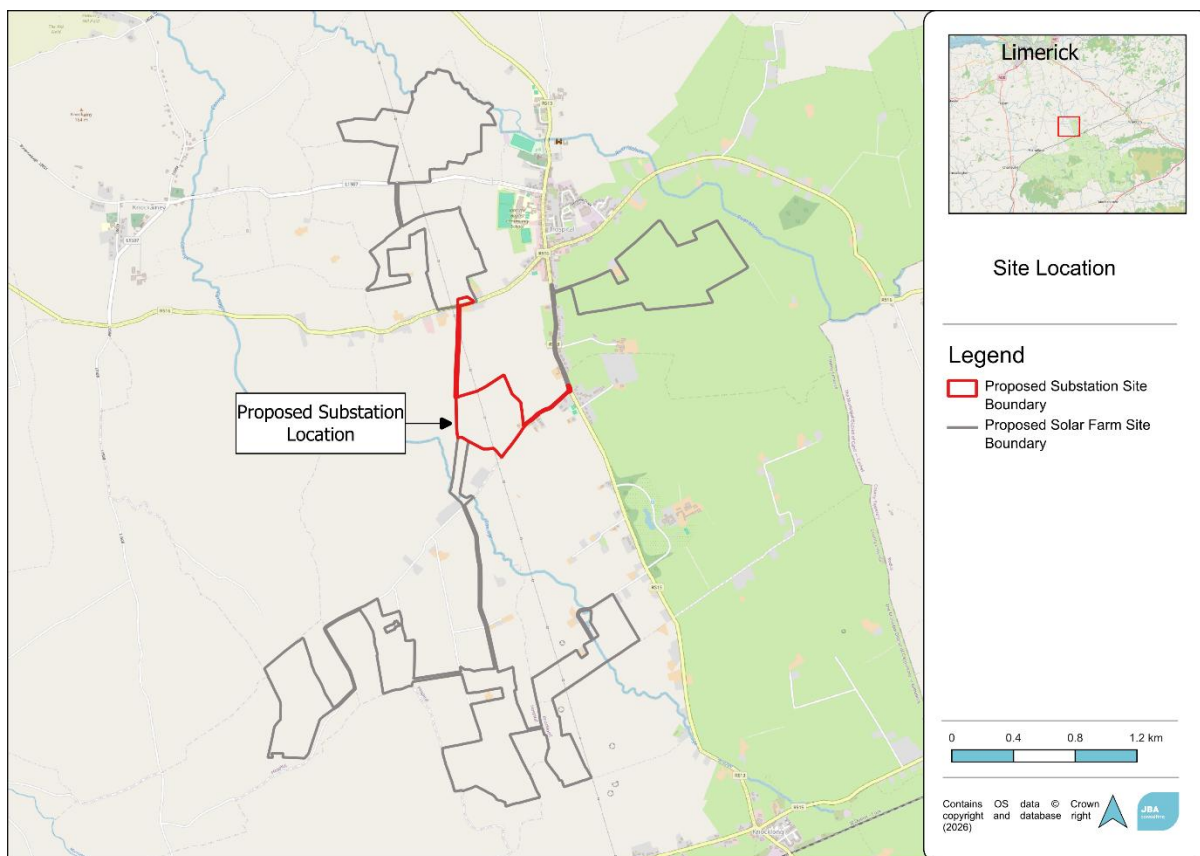


Figure 3-2: Overall Project site location

### 3.2 Proposed Development

Harmony Solar East Limerick Limited is seeking planning permission for a substation development within the townlands of Gotoon, Coolscart, and Kilfrush in County Limerick.

The Proposed Substation Development description, as contained on the statutory notices for the planning application, reads as follows:

A 10-year planning permission for the construction of a 220kV Loop In Loop Out (LILO) substation and associated works within a site of 17.02 hectares which will include the following:

- Transmission System Operator (TSO) compound with an area of approximately 14,158m<sup>2</sup>, containing a two-storey 220kV GIS substation building with a footprint of approximately 1,844m<sup>2</sup>, a total floor area of 3,550.8m<sup>2</sup>, and a height of 20.7 m.
- Customer compound with an area of approximately 4,576m<sup>2</sup>, containing a customer building with a footprint of approximately 346.2 m<sup>2</sup>, a total floor area of 311.8m<sup>2</sup> and a height of 7.62m.
- 220kV customer transformer positioned within bunded enclosures, with a height of 9.5m above finished ground level.
- 220kV electrical infrastructure including transformers, switchgear, gantries, insulators, conductors, protection and control equipment, and all associated electrical plant and apparatus.
- A Battery Energy Storage System (BESS) located within a dedicated BESS compound and including:
  - 55 no. containerised battery storage module(s), each measuring 6.06 m long, 2.44 m wide and 2.9 m high.
  - 28 no. containerised transformer and power conversion / conditioning unit(s), each measuring 6.06 m long, 2.44 m wide and 2.9 m high.
  - Ancillary BESS infrastructure including inverters, transformers, switchgear, control equipment, thermal management systems, fire detection and suppression systems, acoustic screening, and associated electrical plant.
- Removal of 1 no. existing 25m high steel lattice tower, and the installation of 2 no. steel lattice towers of 26.5m high, foundations and associated insulators, hardware and conductor.
- 4 no. lightning protection mast(s), with a height of 18m.
- 1 no. telecommunications mast, with a height of 37.52m.
- 140m of underground electrical cable and associated ducting, including joint bays, cable sealing end compounds, marker posts and associated infrastructure.
- Internal access tracks.
- A new access point from the L1509 public road.
- Removal of derelict farm building.
- Landscaping and biodiversity enhancement measures.
- Security gates, boundary fencing and all associated ancillary development, site works and services.

A Natura Impact Statement will be submitted with the application.

The Proposed Substation Development forms part of a wider “Overall Project”. The Overall Project comprises the following components:

- A new 220kV substation development, Battery Energy Storage System (BESS) and associated grid infrastructure (hereafter referred to as the Proposed Substation Development), for which planning consent will be sought from An Coimisiún Pleanála (ACP) as a Strategic Infrastructure Development (SID) under Section 182A of the Planning and Development Act 2000 (as amended).
- A solar farm and associated cable route (the Proposed Solar Farm Development), for which planning consent is sought from Limerick City and County Council under Section 34 of the Planning and Development Act 2000 (as amended).

The Red Line Boundary for the Proposed Substation Development overlaps with, and is located within, the Red Line Boundary for the Proposed Solar Farm Development and therefore forms part of the wider Overall Project lands. The Proposed Substation Development is required to facilitate the connection of the Proposed Solar Farm Development to the national electricity transmission network. However, separate consenting routes are required under the Planning and Development Act 2000, as amended. Notwithstanding these separate consent processes, the Overall Project has been considered in this Report, with the Proposed Solar Farm Development and Proposed Substation Development assessed cumulatively.

### 3.3 Drainage

The stormwater drainage proposals for this site have been designed in accordance with international best practice and are outlined in full in the separate Drainage Management Plan submitted with the application.

It is intended to preserve existing overland flow pathways outside the formal drainage catchment, manage the additional runoff generated by the proposed hardstanding areas and avoid increasing flood risk to downstream or third-party receptors. The strategy comprises two complementary drainage systems:

- Outside the formal hardstanding drainage catchment, shallow interception trenches, trackside drains, check dams, cross-underdrains and diffusers will maintain the continuity of existing overland flow pathways across the access tracks. These measures will limit localised ponding and prevent the access infrastructure from creating new barriers to flow or concentrating runoff towards adjacent land.
- Within the formal drainage catchment, runoff from the buildings and hardstanding areas will be collected through surface grading, gullies, and vegetated swales. The swales will convey runoff to the proposed attenuation pond, which will operate as a detention basin and discharge at a controlled rate to the receiving

watercourse. The pond will provide attenuation storage and a dedicated interception zone for the first 5 mm of rainfall.

### 3.4 Watercourses

A tributary of the River Camogue is located at the southern boundary of the site (Figure 3-3). The River Camogue flows in a northwestern direction. The River Mahore is a tributary of the River Camogue, located 1.5km north of the site. It joins the larger river circa 5km northwest of the site. Drainage ditches traverse the site and drain south towards the River Camogue.

The Morningstar River is located 3.7km southwest of the Proposed Substation Development but is not hydrologically connected to the site.

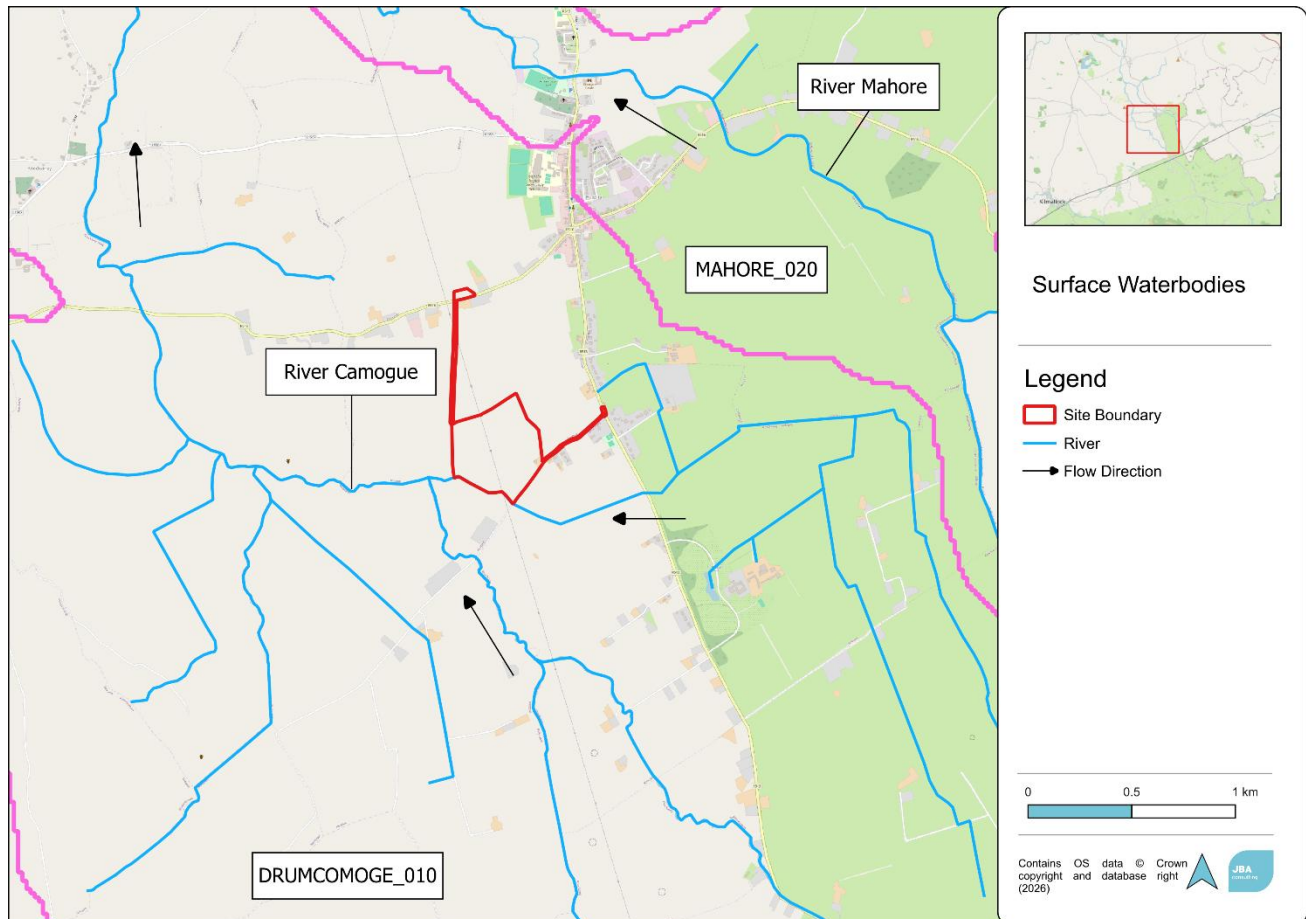


Figure 3-3: Surface waterbodies in the vicinity.

## 4 Roles and Responsibilities

The contractor is responsible for ensuring that all employees and sub-contractors follow the requirements of the CEMP. The contractor will be required to provide training and supervision to ensure that the requirements of the CEMP are adhered to.

It is anticipated that the main environmental responsibilities for the key staff will be as set out below (To be confirmed by the contractor when appointed).

The list below does not take into account the responsibilities of specialised survey staff (arborist, bat specialist) as their roles are both self-explanatory and also confined to specific tasks if required. They will not be resident as permanent staff.

### 4.1 The Applicant

The Applicant, Harmony Solar East Limerick Limited, is committed to safeguarding the environment during construction of the Proposed Substation Development through the appointment of a suitably qualified and competent Site Manager who shall oversee the compliance of all activities with environmental law and regulations.

### 4.2 Site Manager

The Site Manager will be required to:

- Prepare the CEMP. This will include the key elements as outlined in this CEMP;
- Be responsible for ensuring that adequate equipment, control measures and resources are made available to meet the requirements of the CEMP;
- Ensure all staff undergo suitable training and environmental induction;
- Manage the preparation of the methods statements and will be responsible for implementing these on-site;
- Retain all training records;
- Retain all records on the quantities of material that leaves the site for disposal, and all disposal records;
- Oversee the day-to-day management of working areas within the site;
- Carry out continuous monitoring of the site. This will include regular site walkovers and visual inspection of works and mitigation measures. Any irregularities or deficiencies will be reported to the ECoW, who will conduct detailed visual monitoring of mitigation measures including silt fences, surface water runoff treatment trains, and ecological mitigation, as outlined in Section 6.

### 4.3 Ecological Clerk of Works (ECoW)

- Ensure that all mitigation measures used to protect the environment are in place and are maintained during the work;
- Undertake and report on regular monitoring and site audits (Section 6.11.1);

- Revise any given mitigation measure if the monitoring evidence indicates that the measure is not effectively protecting the environment;
- Supervise any excavation; and
- Provide toolbox talks to all sub-contractors before they start on site.

#### 4.4 Staff and Operators

Staff and operators will be responsible for:

- Attendance at ongoing toolbox talks and ensuring that mitigation measures are in place before the work commences;
- Adherence to CEMP mitigation measures; and
- Reporting any environmental incidents to the Site Manager and the ECoW.

All site personnel will undertake site induction prior to carrying out any activity. Induction topics to be covered include:

- Duties and responsibilities;
- Site layout;
- Emergency response procedures including Accident & Emergency routes and contact details;
- Site First Aiders;
- Site rules;
- Temporary traffic management plan;
- Existing utilities present on site;
- Awareness of adjacent third-party practices and boundary management;
- Environmental best practice;
- Specific environmental mitigation;
- Waste management and housekeeping;
- Storage and delivery procedures;
- Health and Safety procedures;
- Method Statements for specific tasks; and
- Risk Assessments.

#### 4.5 Statutory Bodies

Relevant statutory bodies include the following. Their responsibilities are set out below:

- Limerick City and County Council
  - The appropriate planning and development of suitably zoned land.
  - Review planning applications.
- IFI
  - Provide guidance on best practices for surface water management and protection of waterways.
  - Issue relevant licences and consents.
- The EPA

- Oversee environmental licensing, monitor compliance, and enforce environmental regulations.
- Office of Public Works
  - The maintenance of arterial drainage scheme channels, in accordance with Section 37 and 38 of the Arterial Drainage Act 1945 (as amended by the Arterial Drainage (Amendment) Act 1995).

## 5 Construction Operations

The following activities will be undertaken during the construction phase:

- Erecting construction traffic signage;
- Creation of internal site tracks;
- Sustainable Drainage Systems (SuDS) installation;
- Erecting temporary construction compound;
- Removal of existing derelict farm building and 25m steel lattice tower;
- Construction of 220 kV GIS substation and gantry compounds;
- Construction of the Battery Energy Storage System (BESS), including foundations and concrete slabs;
- Delivery, installation and placement of battery modules, transformers, power conversion system (PCS) equipment and associated electrical equipment;
- Overhead Line and Loop In Loop Out works;
- Installation of underground earthing cables and associated electrical infrastructure;
- Installation of lightning protection and telecommunications infrastructure;
- Installation of permanent fencing, security gates, closed-circuit television (CCTV), maintenance access lighting, and other site security measures;
- Commissioning of the substation, BESS and electrical infrastructure; and
- Removal of construction compound.

### 5.1 Employment and Accommodation

The construction of the scheme will lead to employment by direct construction work, and indirectly by the requirement for other local support services during the works.

The Proposed Substation Development will have its own construction compound located within the red line boundary, and will include site toilets, a staff canteen and site office. A suggested compound location is shown in Figure 5-1 below, and setup of the compound will follow mitigation measures outlined in Section 6. It is also noted that the location of compound may need to move in the later stages of construction to allow for construction of the full substation development.



Figure 5-1: Indicative temporary compound location

## 5.2 Programme of Works

The detailed programme of works will be known at tender stage and the actual construction sequence and programme will be confirmed upon appointment of a contractor.

### 5.2.1 Construction Timescale

The construction phase of the Proposed Substation Development is anticipated to cover a period of up to 18 months approximately for completion. Working hours are to be confined to between 07:00 – 19:00, Monday to Friday inclusive, and 08:00 – 14:00 on Saturdays, or as otherwise agreed in advance with Limerick City and County Council. Works on Sundays and public holidays, and evening and night-time working will not be necessary. Outside of these times works are limited to:

- Works which do not require significant noise e.g., distribution of materials, assembly of structures and modules, commissioning and testing;
- Planned OHL tie-in works and associated outage activities, where required and subject to agreement with the relevant network operator; and
- Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer

retrospectively notifies Limerick City and County Council of such works within 24 hours of their occurrence.

All planned works outside normal working hours, including low-noise activities and OHL tie-in or outage works, shall be subject to prior agreement with Limerick City and County Council and appropriate noise management measures.

### 5.3 Plant

Equipment to be used during the construction of the works will be typical of a project of this scale. In general, the following machinery will be used:

- 4x4 Vehicle;
- Winch;
- Tracked Excavators and 360° Tracked Excavators;
- Tracked Dumpers/Tractors and Trailers;
- Crane;
- Teleporter;
- Hoist;
- Sheet Piling Rig;
- Power Tools;
- Generator;
- Chains and small tools; and
- Scaffolding.

### 5.4 Site Confines

The red line boundary is shown in Figure 3-2. The initial works necessary to establish the site confines will be carried out by the contractor and will include the following:

- Setting up of access controls for the site. Access routes during construction will be determined by the appointed contractor;
- Construction of traffic management and alert signage, including pedestrian management;
- On-site toilet facility, site offices and site canteen;
- Temporary fencing, silt (watercourse protection) fencing and site security; and
- Bunded storage of fuels and refuelling area.

### 5.5 Method Statements

In advance of any operations commencing at the site the appointed contractor will be required to prepare a Method Statement. This may include:

- Location of temporary site compounds;
- Construction of foundation hardstandings with relevant control measures;
- Details on hydrocarbon and fuel storage areas;

- Car parking facilities for workers;
- Site security including fencing and hoarding;
- Traffic management plan;
- Waste disposal plan;
- Sediment Management Plan and silt fencing installation;
- Storm Water Management Plan; and
- Bunding/drip tray proposals for fuel storage & vehicles as required.

## 6 Environmental Impacts and Mitigation Requirements

During the construction stage of the development there are potential risks to environmental receptors from the following:

- Potential leakage of hydrocarbon/lubricants;
- Increased surface water runoff and sediment loading;
- Disturbance to habitats or species; and
- Excavations.

The following sections outline proposed mitigation measures for identified potential environmental impacts across all relevant construction activities and environmental receptors. Documents consulted in the preparation of this report have been referenced where appropriate. Measures are summarised under each heading.

This section shall be read in conjunction with Section 7 and Table 7-1 of the Natura Impact Statement and Table 9-1 of the Ecological Impact Assessment, which set out the ecological mitigation measures to be implemented for the Proposed Substation Development.

### 6.1 Pre-commencement Works

#### 6.1.1 Site Surveys

Prior to any works commencing on the site, the following pre-commencement site surveys will be conducted:

- Ecological surveys to review the EclA submitted with the planning application and to confirm that no new at-risk species are using the site. The surveys include but are not limited to:
  - Badger sett inspection;
  - Otter holt inspection;
  - INNS survey.
- A programme of targeted archaeological test trenching will be carried out prior to construction. The results of this test trenching including any mitigation measures will be incorporated into the Construction-Phase CEMP.
- Geotechnical ground investigations.

#### 6.1.2 Cordoning Off of Areas

There are a number of areas on the site where works will be managed carefully. These include but are not limited to:

- Setbacks from archaeology;
- A buffer zone of 30 - 50m from badger sett entrances shall be applied depending on the nature of the works in proximity to the entrance;

- 3m setback from edge of hedgerow/treeline;
- 20m disturbance buffer for otter, increasing to 150m for active breeding holts;
- 20m buffer, as measured from the top of the bank of the River Camogue, where no works will be permissible, in line with EH018; and
- 3m buffer to field drains.

The buffers to the River Camogue and field drains will be retained as vegetated buffers and will not be used for storage or site compounds, in accordance with Section 7.2 of the NIS.

After all surveys are complete and before any heavy plant machinery is brought to site, each of these areas will be cordoned off with a simple plastic tape. This ensures that workers do not inadvertently enter the buffer areas.

## 6.2 Planned Erosion and Sediment Control Practices

The risk to water quality must be considered by the contractor and adequate control measures put in place. The presence of surface watercourses in this area means that there could be a risk to surface water bodies. To prevent this, water that would normally flow over areas of proposed earthworks should be intercepted and diverted around any high-risk areas and be allowed to discharge to the natural environment. Additionally, the water emanating from areas of construction should be intercepted and treated, to remove sediment and any other pollutants before being allowed to dissipate. The use of settling lagoons, settling tanks, or equivalent, with outflow control measures may be used for the interception of surface water or groundwater pumped from an active working area.

### 6.2.1 Surface Water Runoff

Two distinct methods will be used in the management of surface water runoff during construction. The first method involves keeping clean water clean by avoiding disturbance to natural drainage features, minimising works in or around drainage features, and diverting clean surface water flow around excavations or construction areas. The second method will consist of collecting any water from works areas that may contain silt or sediment, and to convey that towards settlement ponds prior to controlled diffuse release over vegetated natural surfaces. No direct discharge to surface water will take place.

“Clean” water will be separated from “dirty” water through the use of interceptor drains, upstream of works areas. These will convey surface water to cross drains under proposed infrastructure, from where it will be allowed to disperse overland via diffuse outfalls. This preserves the natural drainage regime on site as much as possible.

The pathway for sediment-laden water from the site to the adjacent surface water network and further downstream will be disrupted by mitigation measures outlined below. The following mitigation measures will be implemented in sequence:

- Silt fencing shall be installed along watercourses, and field drains outside the buffer zones specified in Section 6.1.2. Silt fences will be installed as indicated in Figure 6-1. The silt fencing along watercourses and drains will remain in place for

the full construction phase, with regular inspection taking place and replacement in case of damage.

- Temporary settlement ponds will be established on site to allow for retention of stormwater. Surface water on site will be conveyed to these settlement ponds prior to being allowed to discharge off-site. Discharge will be by means of overland diffusers. The ponds will be designed in compliance with CIRIA C648.
- Elements of the operational drainage system will be constructed at an early stage of the works to provide construction phase drainage control. This will include, as appropriate, interceptor drains, cross drains, filtration check dams, swales, attenuation features and other drainage infrastructure as outlined in the Drainage Management Plan. Surface water runoff generated during construction will be directed through these measures to facilitate sediment settlement and controlled discharge.
- Temporary settlement ponds may now be removed, with surface water now discharging through the operational phase drainage system.
- The contractor will construct a temporary site compound at a location at least 20m remote from the River Camogue and 10m remote from any drains. Any surface water arising from the site compound will pass through the site drainage system.
- Remaining construction phase temporary drainage infrastructure and silt fencing is removed.

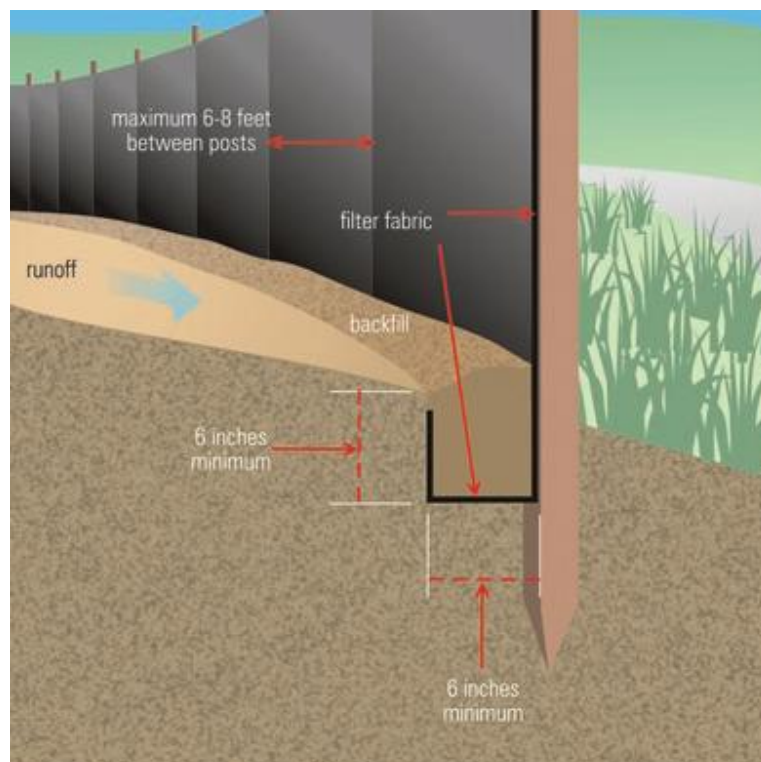




Figure 6-1: Example of suitable silt fence mitigation ensuring maximum safeguarding efficiency.

#### 6.2.2 Pollution Control and Spill Prevention

Spill kits containing absorbent pads, granules and booms will be stored in the temporary site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site foremen's vehicles will carry large spill kits at all times. Absorbent material will be used along with pumps and generators at all times, and any material used for this purpose will be disposed of. All used spill materials, e.g., absorbent pads, will be placed in a bunded container in the contractor's compound. The material will be disposed of by a licenced waste contractor at a licenced facility. Records will be maintained by the environmental site manager.

Regular inspections and maintenance of plant and machinery, including checks for leaks, damage or vandalism, will be made on all plant and equipment.

The contractor will ensure that the following procedures are in place:

- The contractor will construct a temporary site compound at a location at least 20m removed from the River Camogue or 10m removed from drains.
- Emergency response awareness training will be issued for all project personnel doing on-site works;
- Oil booms and oil soakage pads should be maintained on-site to enable a rapid and effective response to any accidental spillage or discharge. The correct disposal of these booms and pads will be demonstrated during the toolbox talks. Records will be maintained by the environmental manager of the used booms and pads taken off site for disposal;
- Spill kits will be stored in the temporary site compound with easy access for delivery to site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits must include suitable spill control materials to deal with the type of spillage that

may occur and where it may occur. Typical contents of an on-site spill kit will include the following as a minimum:

- Absorbent granules;
- Absorbent mats/cushions;
- Absorbent booms;
- Gloves to handle contaminated materials and sealable disposal sacks;
- Track mats, drain covers and geotextile material.
- Any pollutant chemicals, fuels of any kind, concrete additives etc. stored on site throughout the project will be stored in labelled waterproof and secured protective containers to mitigate the risk of pollution of the watercourses. At no point should there be storage of material or vehicles/machinery within 20m of watercourses;
- Oil and fuel storage tanks shall be stored in designated areas, and these areas will, as a minimum, be bunded to a volume not less than the following:
  - 110% of the capacity of the largest tank or drum within the bunded area (plus an allowance of 30 mm for rainwater ingress), or
  - 25% of the total volume of substances which could be stored within the bunded area.
- The Site Manager will, as part of their daily site walkaround, check the integrity of the fuel tank(s). The condition of the tanks will be recorded by the Site Manager.
- The temporary site compound fuel storage areas and cleaning areas will be rendered impervious and will be constructed to ensure no discharges will cause pollution to surface or ground waters;
- Re-fuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated area which will be away from any existing surface water drains which could also provide pathways to the underlying soils or groundwater;
- Mobile plant will refuel over a drip tray with an absorbent mat;
- The contractor will ensure that no hazardous or noxious materials enter a watercourse/drain. Should this situation arise emergency procedures will be activated;
- Potentially contaminated run-off from plant and machinery maintenance areas will be managed within the temporary site compound surface water collection system; and
- Damaged or leaking containers will be removed from use and replaced immediately.
- During all works the weather forecast will be monitored and a contingency plan developed to prevent damage or pollution during extreme weather. Machinery and equipment will not be left on-site during such events and will either be removed from site beforehand or stored within the site compounds.

### 6.2.3 Plant/Machinery

Regular inspections and maintenance of plant and machinery to check for leaks, damage or vandalism will be made on all plant and equipment.

Track mats will be provided and stored onsite for use following heavy rainfall events. Track mats are durable mats often made from plastic or composite materials making them lightweight, durable, weather-resistant and suited to a wide range of ground conditions. They can be used to prevent break-up of the topsoil cover from heavy machinery.

All construction products will be subject to the European Union (Construction Products) Regulations 2013 (S.I. No. 225 of 2013), as amended (the “Construction Products Regulations”). CE marking will be mandatory for all construction products placed on the market for which harmonised standards are in place. With this marking, the manufacturers indicates that a product meets the requirements set out in EU product rules, and allows the product to be moved freely within the EU. The Construction Products Regulation aims to ensure that reliable performance-related data is made available, by means of Declarations of Performance, in relation to construction products being placed on the European market.

It is envisaged that deliveries of materials will occur on a “just in time” basis to reduce the presence of unnecessary stocks on site (i.e., materials are ordered as they are required, aligning construction needs with real-time demand).



Figure 6-2 Examples of track mats<sup>1</sup>

### 6.2.4 Spoil Management

Temporary storage of soil will be carefully managed to prevent any potential negative effects on the receiving hydrological environment. Excavated material shall be stored at least 50m from watercourses, drainage ditches and other surface water features, in accordance with the Outline Construction Methodology.

Movement of material will be minimised to reduce degradation of soil structure and generation of dust. Excavations will remain open for as little time as possible before the placement of fill. This will help to minimise potential for water ingress into excavations.

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<sup>1</sup> Photographs from TuffTrak Heavy Duty Mats for Temporary Roads Ireland - Ground Protection Ireland <https://groundprotection.ie/products/tufftrak/>

Weather conditions will be monitored when planning construction activities, to minimise risk of run-off from the site and the suitable distance of topsoil piles from drainage ditches will be maintained. In the event of an extended period of dry weather, stockpiles will be dampened using a water spray.

All soil stockpiles will be covered (vegetated or with tarpaulins/similar material) to minimise the risk of rain runoff / wind erosion. Vegetation will be established as soon as possible on all exposed soils.

During extended dry periods, soil stockpiles will either be dampened periodically or covered to minimise the risk of airborne particles entering watercourses.

Should mobilisation of soil particles/pollution be noted during weekly monitoring by the Site Manager, works will stop temporarily, and the Site Manager will initiate the interception and treatment of pollution/silt run-off.

Silt fencing and silt bags shall be put in place downstream of exposed soils or soil stockpiles to contain surface water runoff from the site.

#### 6.2.5 Groundwater protection

The following measures will be put in place for the protection of groundwater during the construction phase:

- Under no circumstances will surface water runoff be allowed to discharge to exposed excavations or disturbed ground. Any excavated areas will be properly bunded or bound by a silt fence.
- Excavations will not be deeper than required.

Should groundwater require pumping from excavations (such as for cables), this will not be allowed to discharge back to ground or to surface watercourses without treatment via the drainage network outlined in Section 3.3.

### 6.3 Biodiversity

An Ecological Impact Assessment (EclA) and Natura Impact Statement (NIS) has been prepared by JBA Consulting and is submitted with the application. Mitigation measures have been developed in this report and are summarised here.

#### 6.3.1 General Avoidance Measures

General avoidance measures that should be incorporated by the contractor and sub-contractors working on site include:

- Preparations of a toolbox talk for staff highlighting the ecological features of concern, appropriate use of site compounds, and Proposed Substation Development site.
- The use of lighting at night on site should be avoided. If the use of lighting is essential, then a directional cowl should be fitted to all lights to prevent light spill

and to be directed away from treelines and hedgerows, and away from any potential roost locations.

- Limit the hours of working to daylight hours, to limit disturbance to nocturnal and crepuscular animals.
- Contactors must ensure that no harm comes to wildlife by maintaining the site efficiently and clearing away materials which are not in use, such as wire or bags in which animals can become entangled.
- Any pipes should be capped when not in use (especially at night) to prevent animals becoming trapped.
- Any excavations should be covered overnight to prevent animals from falling and getting trapped. If that is not possible, a strategically placed plank should be placed to allow animals to escape.
- No heavy machinery in proximity to breeding setts or active otter holts.

### 6.3.2 Mammals

The site of the Proposed Substation Development will be fenced. In order to not create barriers to movement, mammal gates/passageways will be placed at regular intervals around the entirety of the fenced area. The fencing should use as big a mesh as possible to allow free movement of micromammals and have mammal passage points at regular intervals to avoid entrapment of large mammal species. Mammal tracks and crossing points have been mapped, and will be used to inform mammal passage points, as well as regular intervals being provided.

Any vegetation scrub/tree type vegetation that is to be removed shall be checked for the presence of mammals prior to clearing. This includes checks for Badger, but also small mammals that are more cryptic such as hedgehog.

#### 6.3.2.1 Badger

Prior to works commencing, a survey will be carried out to check the status of known setts and whether additional setts have been dug.

At all times:

- No heavy machinery to be used within 30m of a badger sett unless authorised by the NPWS.
- No work within 50m of an active breeding sett.
- 10m buffer for all new planting.

At the time of the surveys, badger activity was recorded along the northern and eastern hedges of the site; these did not present characteristics of breeding setts (low levels of activity, single entrances). However, prior to works going ahead, a detailed badger survey of the area will be carried out to assess badger activity. No clearance works shall occur during the December to June period.

Should it be required for any sett to be closed, a detailed shutdown plan shall be prepared by a suitably experienced ecologist in conjunction with the local authority and the NPWS.

Ongoing monitoring will be required before closure, and an artificial sett will be created in consultation with the NPWS. Timing of the closing of a sett is critical, as it must not interfere with breeding activities.

Permission to close a sett must be sought prior to works commencing; this will require detailed knowledge of badger setts on site, status of affected setts, liaison with the NPWS ranger, preparation of a detailed procedure plan to carry out sett closures.

Guidelines on procedures for timelines and measures necessary for sett closure are provided in: (NRA, 2005b): Guidelines For The Treatment Of Badgers Prior To The Construction Of National Road Schemes Prior to works commencing.

Briefly the measures include:

- Survey all areas within 50m of the works sites no more than 12 months prior to works commencing to determine status off setts.
- Exclusion of badgers should only be considered where a development would unavoidably destroy a badger sett (or any part of its underground tunnel and chamber system), or its immediate surroundings, making it unsuitable for continued occupancy.
- Exclusion of badgers from any currently active sett should only be carried out during the period of July to November (inclusive) in order to avoid the badger breeding season.
- In the instance of disused setts or setts verified as inactive, and to prevent their reoccupation, the entrances may be lightly blocked with vegetation and a light application of soil (soft blocking). The purpose of soft-blocking is to confirm that an apparently inactive sett is not occupied by badgers. If all entrances remain undisturbed for approximately five days, the sett should be destroyed immediately using a mechanical digger, under licence from the NPWS
- Inactive entrances may be soft and then hard-blocked, and any active entrances should have one-way gates installed to allow badgers to exit but not to return. The gates should be tied open for three days prior to being set to exclude.
- Gates should be left installed, with regular inspections, over a minimum period of 21 days
- Sett destruction should commence immediately following the 21 day exclusion period, provided that all badgers have been excluded.
- destruction of a successfully evacuated badger sett may only be conducted under the supervision of qualified and experienced personnel under licence from the NPWS
- A report detailing evacuation procedures, sett excavation and destruction, and any other relevant issues should be submitted to the NPWS.

#### 6.3.2.2 Otter

Prior to work commencing, a survey will be carried out along the Camogue River adjacent to the site to check for the presence of otter holts/couches, as the access track is within

70m of the river and the southern extremity of the Proposed Substation Development within 140m.

Where potential holts or mammal holes have been identified during the surveying, detailed investigations (e.g. trail camera) will be conducted prior to work commencing to characterise the nature of the holt.

The following measures shall apply:

- Minimum 20m buffer along the Camogue to maintain riparian habitat
- No lights shall be directed towards the watercourse, including temporary work lights.
- No excavation shall be left uncovered when not being worked on.
- No nighttime working along the Camogue.
- If a couch or resting holt is identified, a 20m buffer will be maintained around it where no works, or machinery will be permitted.
- If a maternity holt is identified, a 150m buffer will be maintained around it. No work is to be carried out within these buffers.

Presence of otter holts/ couches may trigger the need for a derogation licence and advice from the NPWS must be sought at the time. No holt closures are anticipated. Works in areas away from the watercourses and beyond these buffers may go ahead while awaiting guidance from the NPWS.

### 6.3.3 Bats

The removal of the derelict building and of the hedgerow in the land parcel are unlikely to lead to the loss of bat roosting features. The removal of the hedgerow will lead to the loss of linear features used for foraging.

- The default setting for all lights should be that they are switched off at all times, unless they are required due to the presence of on-site personnel. To ensure that lights are not inadvertently left on, outdoor lighting shall be set on timers.
- No work-lighting after sunset during peak bat activity months (May – September).
- Hedge felling will use soft felling techniques with no same day mulching/chipping of trees.
- Trees/ tree like feature shall be to be checked for roosting potential prior to felling; derogation licence may be required if features are recorded.
- Pre-demolition survey of the derelict building to ensure no bats are present.

### 6.3.4 Birds

In order to protect breeding birds, no vegetation clearance shall occur during the statutory breeding season (1 March to 31 August inclusive). Caution still needs to be applied as breeding season is getting earlier, and some birds may still have nesting or unfledged young in September.

Where feasible, vegetation clearance should only occur once fruit have been produced and largely consumed by wildlife. This will help support wintering birds such as Redwing. Vegetation clearance should be carried out as much as feasibly practical between December and mid-February. No vegetation clearance will be carried out during breeding season.

To support breeding raptors such as Kestrel, provision for suitable nest boxes shall be made. At least one box should be placed. Final location should be determined once final layout and location of the different elements are determined. A suitable location would be on the lattice structure of the power line tower, at least 3m of the ground, and facing away from the main substation.

Power lines shall be equipped with bird deflectors to minimise risk to large birds.

#### 6.3.5 Amphibians and Reptiles

Field drains and areas of standing water should be checked for frog spawn or frogs prior to any work being carried out.

Drains that are plugged during the construction period to prevent sediment outfall to the rivers may hold more water for longer and therefore extra care must be taken to prevent damage to frog spawn.

#### 6.3.6 Invertebrates

There should be no use of wildflower seed mixes in any area; species composition of grasslands in the area and available seed bank should allow for natural recolonisation when combined with change in cutting regime and reduced nutrient inputs.

#### 6.3.7 Crayfish

No instream works are anticipated therefore introduction of crayfish plague is not anticipated, however out of precaution, measures must be applied if any tools or equipment come into contact with the watercourses.

#### 6.3.8 Habitats

##### 6.3.8.1 Hedgerows

Hedgerow maintenance will follow best practices to maximise benefits to biodiversity:

- No clearing or cutting of vegetation during the statutory bird nesting season.
- Cutting to be delayed as late as possible to allow for birds and wildlife to forage on berries.
- Implement a 3-4 year cutting rotation to all hedgerows, taking into account their varying stages of development.
- Favour “A” shaped trimming allowing for tall hedges with wide bases.
- Maintain all mature trees.

- Retention of deadwood within the hedgerow.
- Retention and protection of all double hedges and treelines, as these are high value.

During construction:

- No construction equipment, materials, waste etc to be stored within 3m of hedgerows.
- An arborists report shall be drawn up. Individual trees that require felling (i.e. those which require removal to secure safe site access and provision of sight lines, or where gap widening is required) will be assessed by an arborist.
- Removal of side branches of mature trees within a hedgerow will also be assessed by an arborist.
- Root protection zones will be put in place for mature/semi-mature trees within a hedgerow.
- Hedgerow section that that will be cleared will be replaced at minimum in a like - for- like manner in terms of length.
- Species composition of replacement section will be in keeping with typical species found in the area, with plants of native stock used.

#### 6.3.8.2 Treelines

During construction:

- No construction equipment, materials, waste etc. to be stored within 3m of treelines.
- An arborist's report shall be drawn up. Individual trees that require felling (i.e. those which require removal to secure safe site access and provision of sight lines, or where gap widening is required) will be assessed by an arborist.
- Any removal of side branches will also be assessed by an arborist.
- Root protection zones will be put in place for mature/semi-mature trees.
- Treeline sections that that will be cleared will be replaced at minimum in a like - for- like manner in terms of length.
- Species composition of replacement section will be in keeping with typical species found in the area, with plants of native stock used.

#### 6.3.8.3 Drainage Ditches

Drainage ditches will be retained in so far as practical and feasible. Where there is to be a removal of a drainage ditch, this should be undertaken in consultation with the ECoW.

Culverting of ditches will comply with Transport Infrastructure Ireland's Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes dated December 2005 (the "Watercourses Guidelines").

- No pumping of water from drainage ditches;
- No direct discharge to drainage ditches; and
- No washing of equipment in drainage ditches.

The diverted drainage ditch will run in a general north south direction approximately 70m to the west of the existing ditch.

- The diverted ditch shall be dug during a period of dry weather to minimise the risk of sediment runoff.
- Excavation materials can be used to infill the existing drain or spread across the fields as necessary.
- The diverted ditch shall connect to the existing drainage ditch in the west.
- Prior to the new ditch being connected to the existing ditch, a bund barrier shall be installed to prevent runoff from the fresh excavations, with a secondary bund located further downstream.
- The bunds shall be monitored with excess silt removed to ensure that no overtopping of sediment occurs.
- The banks of the ditch shall be reseeded to minimise the amount of exposed soil and to prevent sediment runoff.

#### 6.3.8.4 Depositing Lowland Rivers

No new river crossings are anticipated. Should they be required, they will comply with the Watercourses Guidelines, and location specific surveys will be required to fully assess the works. No instream-works and no riverbank works are anticipated therefore geomorphology of the rivers will not be affected.

- 20m buffer with no work activities permitted;
- Sediment control measures to prevent water pollution and impacts of fish and invertebrates;
- No pumping of water from the rivers;
- No discharge to the rivers; and
- No washing of equipment in the rivers.

## 6.4 Dust

The emission of dust, noise, and vibrations during construction, and possible mitigation measures are discussed in this section.

### 6.4.1 Dust Minimisation

Construction activities have the potential to generate some dust emissions. The extent of dust generation is dependent on the nature of the material (soils, peat, sands, gravels, silts etc.) and the location of the construction activity. In addition, the potential for dust dispersion depends on the local meteorological factors such as rainfall, wind speed and wind direction.

During construction, some dust could be generated by activities such as:

- Site fencing;
- Excavation works;

- Construction works;
- Hauling surplus material off site; and
- Movement of vehicles on site during construction.

A plan for dust minimisation should be included in the Health and Safety plan along with plans for noise and vibration minimisation in order to minimise production of dust, vibration and noise to preserve air quality and also to provide safe and favourable conditions for those working on site and living nearby.

Generally, there is a risk that dust may cause an impact on sensitive receptors within 25m of the source of the dust generated.

Significant dust emissions could arise during dry weather. The use of water suppressants will be used during any dry weather conditions (if required). Where temporary stockpiles are required, the material will be stored in designated areas and will be covered with tarpaulins and/or regularly dampened during dry weather periods.

The temporary stockpile of infill will be covered to avoid dust emissions.

#### 6.4.2 Dust Management

Dust generated on site has the potential to degrade air quality and water quality should it enter nearby waterways. The following sediment control measures shall be put in place:

- Silt fencing shall be installed along watercourses, and field drains outside the buffer zones specified in Section 6.1.2.;
- Temporary settlement ponds will be established on site to allow for retention of sediment from stormwater, in line with a 1-in-10-year event standard (or a 24-hour retention time);
- All trackside drains will have check-dams at regular intervals (approximately 40m). This will allow sediment to be captured within the drain's soil matrix or the dams themselves; and
- Appropriate steps will be taken to prevent soil/dirt generated during the works from being transported on the public road. If necessary, a road sweeper will be used to maintain the public roads in a clean condition during the construction phase.

#### 6.5 Noise and Vibration

A Noise Assessment has been prepared by AWN Consulting for the Proposed Substation Development which has identified the primary noise sources likely to arise during construction and noise-sensitive locations (NSLs). The assessment by AWN found that no specific mitigation measures are required.

#### 6.6 Traffic

A Traffic and Transport Assessment (TTA) and outline Construction Traffic Management Plan (oCTMP) has been prepared for the Proposed Substation Development by MPA, and

submitted with this application. Detailed mitigation measures regarding traffic management are contained in the oCTMP.

#### 6.6.1 Site Access

A detailed Construction Traffic Management Plan (CTMP) for the proposed works will be prepared prior to the commencement of construction by the contractor to ensure the safety of road users and construction personnel. The final CTMP will incorporate the traffic management measures outlined in the oCTMP.

All vehicles entering and exiting the site, including material and equipment deliveries and cars/vans (contractor's personnel, client staff and Visitors) will do so via the agreed route in the TTA and oCTMP. The R513 will serve as the Primary Route to the National Road Network. Within the vicinity of the sites, the Secondary Routes to the Overall Project include the L1507, R516, L1509, and L51309.

The new site entrance from the L1509 public road will be formed at commencement of the project and will be kept clear at all times so that free movement of vehicles and proper viewing of the road from both sides is possible when entering and leaving the site. The new site access/egress will provide a safe exit and entrance route and this area will be maintained throughout the project.

Temporary construction stage traffic measures required will be implemented together with traffic signage in accordance with the Department of Transport's Traffic Signs Manual, updated December 2024 (the "Traffic Signs Manual") and particularly Chapter 8 entitled "Temporary Traffic Measures and Signs for Road works" ("Chapter 8").

#### 6.6.2 Traffic Management Plan

The contractor will prepare the TMPs in accordance with Chapter 8 of the Traffic Signs Manual and subject to load permits. The final CTMP will be agreed between the contractor, local authorities and client's Representative. The contractor will be responsible for the implementation of all arrangements between the applicant, Limerick City and County Council, and the local residents with the objective that the transportation needs for the project will have a minimal impact on the road network and local communities. The following as outlined in the oCTMP will be taken into account in the TMP:

- A dedicated Construction Traffic Manager will be appointed for the duration of the construction phase, and this person will be the main point of contact for all matters relating to traffic management on the project;
- A Designated Community Liaison Officer will be appointed to be a direct contact point for the local communities and Limerick City and County Council and implement a Communications Plan;
- A pre-condition survey will be carried out on all public roads that will be used in connection with the development in advance of construction commencing. A post-construction survey will also be carried out after the works are completed. The timing of the surveys will be agreed with Limerick City and County Council.

Joint surveys shall be completed if requested by Limerick City and County Council;

- All roads will be reinstated on completion of the construction works. Roads will be reinstated at least to the condition they were in before the works were carried out and to the satisfaction of Limerick City and County Council;
- Delivery times during the construction phase are to be limited to the specified working hours, i.e., 07:00-19:00, Monday to Friday and 08:00-14:00 on Saturday;
- Construction vehicles will follow the hierarchy of the existing road network and use suitable routes to and from the site;
- Deliveries to the site should take place outside busy periods, where possible, and will be scheduled during working hours but outside peak traffic periods and school drop-off and collection times;
- A banksperson will be present to guide large vehicles in and out of site;
- A wheel wash facility will be located adjacent to the site entrance and manned full time where HGVs will be inspected and wash down as required, such as during excavation works;
- Fencing, secured to a minimum height of two (2) metres, will be provided along the construction site boundary and will be checked daily and maintained as necessary;
- Appropriate information and signage along construction routes will be provided on approach roads either side of the construction site;
- Where appropriate, vehicle loads are to be securely sheeted and restrained prior to dispatch;
- Traffic signage and temporary construction stage traffic measures are to be implemented in accordance with the Traffic Signs Manual, Chapter 8;
- Adherence to posted speed limits will be emphasised to all staff / suppliers and the contractor / sub-contractors during induction training;
- The contractor will carry out a pavement condition survey of the local roads one month prior to the start of works;
- Where possible, on-site vehicles will be encouraged to turn off their engines when parked, waiting to unload or not in use;
- During the various phases of construction, parking will be provided on site to accommodate the construction generated vehicle movements, thereby ensuring that there is not an overspill of parked vehicles onto the surrounding local road network;
- Car sharing, crew transport (e.g. minibuses) and the coordination of site activities will be implemented, where practicable, to reduce the number of vehicles arriving on site; and
- It is envisaged that 1 no. abnormally large or heavy load will be required during the construction process of the Proposed Substation Development, this will be required for the Transformer delivery to the substation site along the R513 and the L1509. Temporary or partial road closures may be required to facilitate this, and the normal application procedures will be applied, and this will be

coordinated with Limerick City & County Council and the relevant road authorities.

### 6.6.3 Refuelling

Where refuelling of vehicles on site is necessary, the following guidelines will be strictly adhered to:

- All plant, machinery and equipment will be stored on site within the works area or within the temporary construction compounds;
- Mobile plant will be filled in a designated area, on an impermeable surface well away from any drains or watercourses;
- A spill kit will be stored (and clearly marked) near refuelling areas;
- Vehicles will never be left unattended during refuelling and drip trays will be located under all static plant vehicles;
- Hoses and valves will be checked regularly for signs of wear, and will be turned off and securely locked when not in use;
- Vehicles will not be left running unnecessarily and low emission fuels will be used where possible; and
- Diesel pumps and similar equipment will be checked regularly, and any accumulated oil removed for appropriate disposal.

## 6.7 Archaeology

An Archaeological Impact Assessment (AIA) was carried out by John Cronin & Associates identified four archaeological features within the site during the programme of geophysical survey.

The largest feature, an enclosure, will be preserved in situ, with the design of the proposed development accommodating it. Three ring-ditches are in areas where full avoidance is not possible. These features (or portions of features) should be excavated and preserved by record under licence by the National Monuments Service.

An additional programme of archaeological test trenching should be carried out at the within the proposed substation footprint and other areas of ground disturbance in advance of construction. Test trenching will target all anomalies of archaeological potential within the relevant area. Should additional archaeological material be identified, this may require preservation by record (excavation) or avoidance by redesign.

The above mitigation measures are subject to the approval of the National Monuments Service, Limerick City and County Council and An Coimisiún Pleanála.

## 6.8 Clearance and Excavation

Due to the nature of the Proposed Substation Development, site clearance will be limited to a small number of trees or short sections of hedgerow to create access points where needed, and the removal of soil or grass vegetation to facilitate new access tracks, hardstandings, and temporary construction compounds.

A cut and fill exercise has not been carried out to date. A detailed examination will take place at the detailed design stage, including the calculation of excavation volumes and identification fill requirements. It is expected that cut and fill will be largely balanced across the site, with materials to be excavated balanced against areas requiring landscape fill.

A waste classification will be produced in respect of soil at the site (in accordance with Directive 2008/98/EC, as amended) ahead of construction works by the contractor. The contractor will identify any areas requiring further environmental sampling, testing and assessment, and sampling protocols. Should any excavation material be deemed hazardous a suitably qualified environmental scientist will further assess the site to determine the nature and extent of the remediation required. If required, the soils will be pre-treated in agreement with the receiving landfill and EPA guidance.

#### 6.8.1 Soil for Reuse

The following steps will be considered as part of the excavation process to minimise waste and associated costs:

- Balance any cut and fill excavation works on site to minimise the import of material and facilitate the use of excavated materials on site; and
- Where possible, it is intended to retain all excavated material within the site boundary with respect to the substation infrastructure.

The preferred management method for excavated soil is to re-use it where possible.

In the case of topsoil reuse it is important that the topsoil is kept separate from all other construction waste to prevent cross-contamination and ensure its functionality for re-use purposes. Topsoil must be protected from all kinds of vehicle damage and kept away from site-track and vehicle storage areas. It is recommended that topsoil is not stored in piles greater than 2 metres in height to protect the soil matrix and prevent damage to the internal structure of the soil.

#### 6.8.2 Exported Soil for Disposal

The European Union (Waste Directive) Regulations 2011-2025 (S.I. No. 323 of 2020), Article 27 allows for materials to be designated as a by-product rather than a waste where certain criteria can be demonstrated. This instrument is well established for soil and stone and is also open to other materials. The benefit of classifying a material as a by-product as opposed to "waste" means that the handling requirements of waste legislation do not apply, while ensuring that significant economic and environmental benefits in line with circular economy principles.

Excess soil to be removed from the site will first be offered as an Article 27 by-product to other sites and industries operating in the area, in line with the EPA Guidelines. Where this is not possible, the soil will be removed off-site as a waste.

Waste to be removed from site will require Waste Assessment Criteria (WAC) testing and waste classification in order to be received into the appropriate waste receiving facility. Waste soil and material intended for off-site disposal, recycling or recovery shall not be

removed from site prior to appropriate waste classification and receiving written confirmation of acceptance from the selected waste receiving facility.

Any material excavated at the site, which is deemed to be contaminated (non-hazardous or hazardous) will be stored separately to the inert material, sampled and tested, in order to appropriately classify the material as non-hazardous or hazardous in accordance with EC Council Decision 2003/33/EC<sup>10</sup>, which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately authorised facility by permitted contractors.

Any wastes that have to be disposed of off-site will be transported to the nearest appropriate facility in order to comply with the proximity principle. The principle requires that waste be disposed of as close to its source of origin as possible, and helps to reduce emissions associated with transport. The EPA holds details of waste facilities which will be consulted by the appointed contractor.

All waste leaving the site will be recorded and relevant documentation maintained.

### 6.8.3 Construction Waste

The contractor shall establish a procedure to identify and classify all waste arising at the site in accordance with the List of Waste Code. Waste materials generated during construction works on site will be segregated into hazardous and non-hazardous labelled storage containers at designated points within temporary site compounds. All waste generated will be handled by an approved waste contractor holding a current Waste Collection Permit.

For each waste stream identified by the contractor, and for each additional waste stream that may arise during the course of the works, the contractor shall identify the following:

- The appropriate LoW Code.
- A suitable Waste Collection Contractor in possession of a valid Waste Collection Permit for the collection of the particular waste within County Limerick.
- The waste recovery or disposal site, including the transfer station where the waste may be transferred to upon leaving the site in possession of a valid Waste Facility Permit or Waste License, as appropriate.
- The recovery or disposal method for the waste.

Only contractors in possession of a valid Waste Collection Permit shall collect wastes from the site. The contractor responsible for the waste shall ensure that the Waste Collection Contractor:

- Is permitted to collect the particular waste;
- Is permitted to collect waste within County Limerick;
- Uses a waste collection vehicle identified on the Waste Collection Permit; and
- Transfers the waste to a licenced waste facility identified on the Waste Collection Permit.

The contractor shall ensure the following information is provided and available upon request:

- Transfer notes for controlled waste and consignment notes for hazardous waste must include an accurate description of the type, quantity and containment of waste; NACE Classification; the LoW code; and details of the waste carrier, who must be licensed.
- Sufficient information to ensure that the waste disposal operator is aware of the potential hazards of the substance.
- Returns for consignment notes will be collected and retained.
- All documentation will be retained for a minimum of two years for transfer notes and three years for consignment notes and be available for inspection.

The contractor and all sub-contractors removing waste directly from site must provide the following documentation:

- Waste forecast.
- Licence documentation for all waste carriers removing waste and for all waste destinations receiving waste (to be approved before use).
- Recycling rates from facilities being used.
- Waste consignment notes (for a minimum of three years) for all hazardous waste. These must include the following:
  - Consignment note code.
  - Details of the site that the hazardous waste is removed from.
  - Details of waste disposal site.
  - Waste producer details if different to site details.
  - Description of the waste (written description, LoW code and NACE code).
  - Details of process that has generated this waste.
  - Specific details of the waste-quantity, chemical/biological components, physical form and hazardous properties any special handling requirements.
  - Signature of consignor once completed.
- Waste transfer notes (for a minimum of two years) for all non-hazardous waste. These must include the following and should be reported:
  - Accurate description of the waste type (written description, LoW code and NACE code).
  - Quantity and containment of waste.
  - Location, time and date of the waste transfer.
  - Names of both persons involved in the waste transfer.
  - Details of the waste carrier and facility, both must be licensed.
  - Waste carrier's registration number.

The contractor shall advise the consenting authority or its representatives in advance if it proposes to act as the Waste Collection Contractor, subject to agreement. In the event that the contractor acts as the Waste Collection Contractor, it shall ensure that it has the

relevant Waste Collection Permit(s) in place prior to commencement of the Proposed Substation Development.

### Damaged Materials

It is possible that a small percentage of materials will arrive on site in a damaged or otherwise unusable state. The contractor will make efforts to engage with the provider and arrange for their return for repair and reuse, where possible, or disposal following the waste hierarchy where repair is not possible.

### Metal

Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

### Waste Electrical & Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling.

### Other Recyclables

Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated containers and removed off-site. Suppliers will be requested to provide materials with the minimum quantity of packaging needed.

### Non-Recyclable Waste

Construction waste which is not suitable for reuse or recovery, such as contaminated packaging or cardboards, will be placed in a separate skip and taken off site for disposal by an appropriately licensed contractor and taken to an appropriately licensed or permitted waste disposal facility.

## 6.9 Vermin Control

Construction sites pose a potential risk to the health and safety of construction workers, local residents, and the public through the creation of new habitats such as open pipes, drains, hoarded waste, and artificial waterbodies. It is the responsibility of the appointed contractor and site management to provide a safe working environment for all individuals working on site, under the Safety, Health, and Welfare at Work Act 2005, as amended.

A rodent and pest control plan will be put in place to manage and limit any potential risk to populations using the site or within the vicinity of works. The pest control plan will be in accordance with the following guidelines:

- Chartered Institute of Environmental Health (CIEH) “Pest minimisation: Best practice for the construction industry” or a similar appropriate standard;
- Health Services Executive (HSE) Rodent Control for the Construction Industry January 2009; and

- Campaign for Responsible Rodenticide Use (CRRU) Best Practice Requirements for Rodent Control and Safe Use of Rotendicides March 2016.

An Integrated Pest Management Plan (IPP) for the construction phase will be included in the CEMP. The IPP should incorporate general and site-specific mitigation measures including the following:

- The appointed contractor may employ a qualified pest control professional to develop safe, effective and environmentally responsible pest control measures where necessary;
- A site survey will be undertaken to identify any potential vermin or pests on site;
- Removal of harbourage such as debris, rubbish, old machinery and equipment, and stores of vegetation such as hay prior to construction works;
- Old drains and disused pipes on site will be sealed or filled as appropriate;
- Properly designed water retention features such as ponds and artificial lakes will be constructed and kept free of refuse as part of the surface water management plan to avoid algal blooms and mosquito breeding;
- Appropriate waste management procedures to minimise food sources available for vermin and pest birds; and
- The use of baits, traps, and rodenticides should be kept to a minimum and used only where necessary.

## 6.10 Biosecurity

No invasive plant species were recorded at the proposed site. As a precautionary measure, the following best practice general protective measures shall be followed.

The following best practice avoidance measures shall be implemented by the contractor which will help to contain and/or prevent the introduction of invasive species on the site as follows:

- All plant and equipment employed for the Proposed Substation Development (e.g., diggers, tracked machines, footwear etc.) shall be thoroughly cleaned down using a power washer unit, and washed into a dedicated and contained area prior to arrival on site and on leaving site to prevent the spread of invasive aquatic/riparian species such as Japanese knotweed *Fallopia japonica* and Himalayan Balsam *Impatiens glandulifera*. A sign off sheet shall be maintained by the contractor to confirm cleaning;
- Material gathered in the dedicated and contained clean down area shall be appropriately treated as contaminated material on site;
- For any material entering the site, the supplier shall provide an assurance that it is free of invasive species;
- Ensure all site users are aware of invasive species measures and prevention and treatment methodologies;
- Provision of toolbox talks before works begin on the site; and

- Adequate site hygiene signage shall be erected in relation to the management of non-native invasive material.

In relation to aquatic ecology adherence to IFI biosecurity protocols for avoidance of spread of pathogens will be followed by contractors and surveyors.

## 6.11 Monitoring

### 6.11.1 Ecological Clerk of Works

The ECoW will be responsible for monitoring the implementation of mitigation measures outlined in Section 6 above. This will take the form of visual inspection of silt fences and surface water management measures, temporary site compound setup, dust minimisation measures, and ecological mitigation measures. If any mitigation measures are found to be deficient, the ECoW will revise the measure.

### 6.11.2 Archaeological Monitoring

The requirement for archaeological monitoring or an archaeological watching brief will be as per the requirements of the NMS at the Department of Housing, Local Government and Heritage.

It is recommended that a suitably qualified archaeologist, under licence from the NMS, should be on site or on standby for the duration of the project, with additional archaeological assistance available when required.

## 6.12 Compliance

In order to comply with environmental law and regulations it is the responsibility of the appointed contractor to ensure that the CEMP is implemented and adhered to for the duration of the construction phase. These plans have been prepared according to relevant legislation and guidelines, and will be followed to guarantee compliance with environmental law and regulations.

A monitoring program will be implemented for all site activities and a strict record kept that shall be available for audits. Records relating to the following will be kept (note the list is not exhaustive):

- Daily and weekly inspections of construction activities
- Environmental risks on site
- Risk Assessments
- Method Statements
- Personnel training/training needs
- Environmental incidents including spills or breaches
- Waste leaving the site including LoW references and quantity
- Register of environmental complaints
- All monitoring data
- Health and Safety records

- Monthly environmental reports

Regular environmental inspections of the site and storage areas as well as records will be carried out by the Environmental Site Representative. The frequency of these monitoring and inspection activities will be agreed in advance of construction with the local authority and would be in line with planning conditions and any environmental mitigation requirements outlined within the reports associated with the Proposed Substation Development.

Should non-compliance or ineffective mitigations measures be identified during construction, additional or corrective measures will be implemented to maintain compliance.

# 7 Emergency Response

## 7.1 Environmental Emergency Response Plan

### 7.1.1 Objective

If an environmental emergency arises, the contractor will implement Environmental Emergency Procedures. The procedure will be prepared with and agreed by Limerick City and County Council in advance of work proceeding at the site. Environmental emergencies are most likely to arise from the following:

- Rupture of hydraulic hose pipes on the excavator and discharge of potentially polluting materials;
- Rupture of a silt curtain during heavy periods of rain; or
- An uncontained spillage in the contractor's compound.

All contractors and sub-contractors will be made aware of the Emergency Response Plan which will address, as a minimum:

- The requirement for adequate supplies of spill control equipment;
- Traffic accidents on the public road;
- Notification procedures; and
- Measures to protect water in the event of a spillage.

### 7.1.2 Procedure

In the event of a spill the contractor will ensure that the following procedures are in place:

- Emergency response awareness training for all project personnel on-site works.
- Appropriate and sufficient spill control materials will be installed at strategic locations within the site. Spills kits for immediate use will be kept in the cab of mobile equipment.
- Spill kits will be stored in the temporary site compound with easy access for delivery around the site in the case of an emergency. A minimum stock of spill kits will be maintained at all times and site vehicles will carry spill kits at all times. Spill kits will include suitable spill control materials to deal with the various types of spillage that may occur and taking into account different measures required based on where it may occur. Typical contents of an on-site spill kit will include the following as a minimum;
  - Absorbent granules;
  - Absorbent booms;
  - Absorbent mats/cushions; and
  - Gloves to handle contaminated materials and sealable disposal sacks.
- Track mats will be provided to ensure access following heavy rainfall; and
- Any contaminated materials/soil media will be segregated, analysed and disposed of by a licensed waste disposal contractor.

### 7.1.3 Contact Personnel in the Event of an Environmental Emergency

Provided below are some contact details for organisations/statutory bodies that should be contacted if an environmental emergency arises on site. The appointed contractor will add to this as needed.

- Limerick City and County Council, Limerick, (061) 556000 (business hours) / (061) 417833 (out of hours)
- Inland Fisheries Ireland, Citywest, Dublin, +353 (0)1 8842 600
- Local Ranger, National Parks & Wildlife Service, Mid South Division, (01) 539 3152
- Environmental Protection Agency Headquarters, PO Box 3000, Environmental Protection Agency, Johnstown Castle Estate, Co. Wexford, Y35 W821, (053) 916 0600
- Uisce Éireann, 1800 278 278 / international +353 1 707 2828
- ESB faults and emergencies, 1800 372 999 / international +353 21 2382410
- Bord Gáis, Gas Networks Ireland 1800 20 50 50
- National Monuments Service, Dublin, 085 804 9231
- Ambulance Service 112 / 999

## 7.2 Battery Energy Storage System Emergency Planning

An Outline Battery Safety Management Plan has been prepared by Enertis for the Proposed Substation Development. The plan, submitted as part of the planning application, includes measures for emergency response relating to the BESS. A site-specific Emergency Response Plan will be developed at the detailed design stage in consultation with Limerick City and County Fire and Emergency Services and will include emergency contacts, communication procedures, emergency shutdown procedures, evacuation procedures and incident response measures. Battery-related incidents will be managed in accordance with the Battery Safety Management Plan and associated Emergency Response Plan.

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