Fosterstown 110kV/20MW Distribution Substation

Outline Construction Environmental Management Plan

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Table of Contents

1 Introduction 4
2 The Proposed Development 5
2.1 Site and Project Overview 5
2.2 Existing Environment 7
3 Substation Construction Works 11
3.1 Site Access 11
3.2 Site Preparation and Enabling Works 11
3.3 Civil Construction Works 12
3.4 Electrical Installation 12
3.5 Water Protection and Management 12
3.6 Refuelling 13
3.7 Waste and Resource Management 13
3.8 Emergency Response 14
3.9 Environmental Management Principles 14
3.10 Environmental Roles and Responsibilities 14
4 Schedule of Commitments 16
4.1 Mitigation Measures 16
5 Auditing 26
5.1 Environmental Compliance 27
5.2 Corrective Action Procedure 27

1 Introduction

This outline Construction Environmental Management Plan (oCEMP) has been prepared by ESB Engineering and Major Projects to accompany a planning application being made by the Electricity Supply Board (ESB) to An Bord Pleanála (ABP).

This Outline CEMP sets out the environmental requirements for the proposed Fosterstown 110kV/20MW Distribution Substation, Carberstown, Trim, Co Meath.

Implementation and operation of this CEMP is the responsibility of the appointed contractor.

The existing 38kV substation at Trim is overloaded on normal feeding and experiencing numerous security of supply issues. There is no capacity for any demand load growth for new housing schemes in the area that will require connection over the next few years.

The project objective is to add capacity and improve distribution security of supply for the Trim area, Co Meath. This will be achieved by taking power from the existing Corduff-Mullingar 110 kV transmission line that traverses the site and transforming the voltage down to 20 kV so it can be used on the distribution network. This will relieve existing transformer capacity in the Trim substation which is urgently required.

The overall strategy for the Trim area is as follows:

1. Install the new 110kV/20kV GIS station.
2. Transfer all 20kV feeders from Trim 38kV station to the new station.
3. Retain the existing Trim 38kV/10kV station for the medium term to ensure N-1 capability of the 10kV Trim urban networks.
4. All major new loads in the Trim and surrounding areas to be connected at 20kV to the new station.
5. Carry out further 20kV conversion of MV networks from 10kV to 20KV under the 20kV Conversion program.
6. Reduce the demand on Trim 38kV station and the 38kV network but retain the station in order to provide additional security of supply for the area and options for 38kV and 10kV source voltage in the area.

The planning application for this development includes a Planning and Environmental Considerations Report (PECR) which has informed the content of this oCEMP.

All the elements of this outline CEMP will be included in the final oCEMP, which will be produced prior to construction by the contractor with the approval of the employer (ESB). The final CEMP will also contain measures provided in ESB's ' Employer's Minimum Environmental Requirements for Construction and Demolition Projects and Related Works and Activities'.

The final 'live' CEMP itself will be subject to ongoing review (throughout the construction phase of the proposed development), through regular environmental auditing and site inspections. This will confirm the efficacy and implementation of all relevant mitigation measures and commitments identified in the application documentation.

This document also provides details on the environmental mitigation measures that will be implemented during the construction phase of this development (**Section 4**).

2 The Proposed Development

2.1 Site and Project Overview

The proposed development site is located on lands located approximately 3 km southwest of Trim, Co Meath along a stretch of the R160 Trim -Longwood regional road (Figure 2-1). The proposed site is traversed by the Corduff-Mullingar 110 kV overhead transmission line and it is intended to loop the proposed substation into this line.

The planning application boundary encompasses a c. 2.75 ha area of agricultural grassland. The characteristics of the land are typical of other agricultural lands in the area, encompassing improved agricultural grassland, hedgerows, scrub and fence-lines. Access to the site will be via an existing access of the R160 regional road (Figure 2-2). The site is relatively flat with a gentle slope west to east. The level at the centre of the site is approx. 61.81 mAOD. Site levels range from approx. 60.36 mAOD at the north-eastern boundary to 62.45 mAOD (± 0.05 m) at the western side. The main land uses within the surrounding area are agricultural, low density residential.

A row of five residential properties is located fronting onto the eastern side of the R160, directly across the road to the proposed site and there are two golf courses located approximately 300m to the southwest and 300m to the northeast. The main land uses within the surrounding area are agricultural, and low density residential.

Project Overview

The project for which planning permission has been sought is called the “Fosterstown Distribution Substation” on lands approximately 3km km southwest of Trim, Co Meath along a stretch of the R160 Trim -Longwood regional road. The proposed site is traversed by the Corduff-Mullingar 110 kV overhead transmission line and it is intended to loop the proposed substation into this line.

The proposed development will consist of the construction of a 110 kV / 20MV electrical substation and will include the following elements:

1. Demolition of an agricultural hay shed;
2. Construction of:
    i. a substation compound (c. 4,340 sq.m.) with c.2.6 m high palisade perimeter fencing;
    ii. a seven bay 110 kV Gas Insulated Switchgear (GIS) building (c. 707sq.m.; c. 13m in height);
    iii. two 110 kV Double Circuit Overhead Line End Masts (c. 16 m in height) and associated outdoor electrical equipment to facilitate underground cable connections between the existing transmission circuit and the proposed GIS building;
    iv. two 110 kV transformers in transformer bays (c. 4.6 m in height) with associated electrical equipment;
    v. an internal access road (c. 6 m wide); and

3. All other associated and ancillary site development works including the provision of site services; fencing; gates; lighting; temporary construction compound and temporary overhead line tower to facilitate line diversion; upgraded access from the R160; drainage; and hedgerow removal.

Figure 2-1 Site Location Map

Figure 2-2 Planning Application Boundary

2.2 Existing Environment

This section of the oCEMP summarises the existing conditions of the site as set out in the accompanying Environmental Reports submitted as part of the planning application. Measures for management of these features and existing conditions are further detailed throughout the CEMP.

2.2.1 Land Cover

The proposed development site is a greenfield site located north-east of the Meath Golf Club and south-west of South Meath Gold Club, west of the regional road (R160) and south-west of Trim, Co. Meath.

According to NPWS Flora (Protection) Order 2022 map viewers and NBDC map viewer, there are no recent records (i.e. last 25 years) of protected and/ or rare plant species within the proposed development site. No protected and/ or rare plant species were recorded during the field survey.

The site comprises the following habitat types:

- Improved agricultural grassland (GA1) - the dominant habitat onsite, largely Perennial ryegrass (Lolium perenne) with other typical grasses (such as Poa annua) and a low diversity of herbaceous species i.e. Dock (Rumex obtusifolius), Clovers (Trifolium spp.), Meadow buttercup (Ranunculus acris). A high level of grazing was evident during the site visit; considered to be of negligible ecological importance.
- Improved wet grassland (iGS4) - corners of the grassland fields that are more water-logged. Soft rushes (Juncus effusus) is prevalent here; considered to be of local ecological importance (lower value).
- Scrub (WS1) - small areas of Bramble (Rubus fruticosus agg.); considered to be of local ecological importance (lower value).
- Buildings and artificial surfaces (BL3) - hardstand area around a derelict cottage and open hayshed; considered to be of negligible ecological importance.
- Hedgerows (WL1) - largely Hawthorn (Crataegus monogyna) hedgerows and strips of dense Bramble; considered to be of local ecological importance (higher value).
- Treelines (WL2) - Hawthorn hedge layer with Ivy-clad (Hedera helix) mature and semi-mature Ash (Fraxinus excelsior) trees; considered to be of local ecological importance (higher value).
- Drainage ditch (FW4) - straight field boundary ditches, associated with hedgerows/ treelines. Low flow and heavily vegetated with Watercress (Nasturtium officinale) in sections; considered to be of local ecological importance (lower value).

Figure 2-3 Habitats present within the proposed development site

2.2.2 Designated Sites

Designated Sites for nature conservation

The proposed development site is not located within or immediately adjacent to any European (Figure 2-4) or nationally designated site(s) (Figure 2-5). The nearest site is the River Boyne and River Blackwater SAC [002299], which is located approximately 1.25 km west of the proposed development site. This is followed by the River Boyne and River Blackwater SPA [004232], which is located 1.3 km west of the proposed development site. The nearest Nationally designated site is Rathmoylan Esker pNHA [000557], which is located 4.1 km southeast of the proposed development site. The proposed development is hydrologically connected to the Trim pNHA [001357], which is designated for the same reasons and overlaps with the River Boyne and River Blackwater SAC.

The only potential impact pathway that exists between the proposed development and designated sites is via a tenuous hydrological connection – i.e. instream distance of 1 km of field drainage ditches, 0.8 km of Moynasboy stream, and 4.5 km the Knightsbrook River, before reaching the River Boyne (River Boyne and River Blackwater SAC and SPA and Trim pNHA). All other designated sites are considered to be beyond the ZoI of the proposed development. European sites are valued as being of international ecological importance, while pNHAs are valued as being of national ecological importance.

The assessment of potential impact on European sites arising from the proposed development is fully assessed and presented in the AA Screening report submitted as part of this planning application.

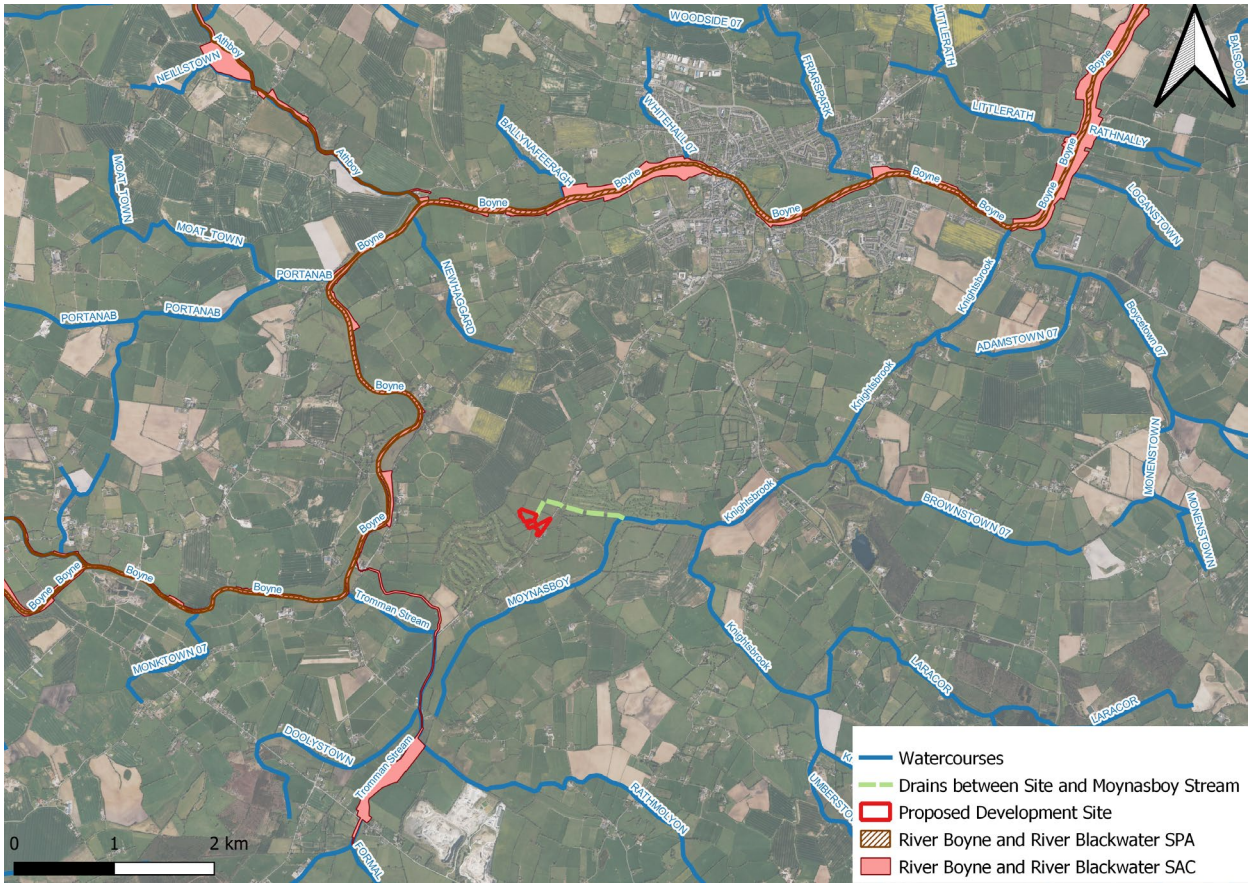


Figure 2-4 European sites located within the vicinity of the proposed development site

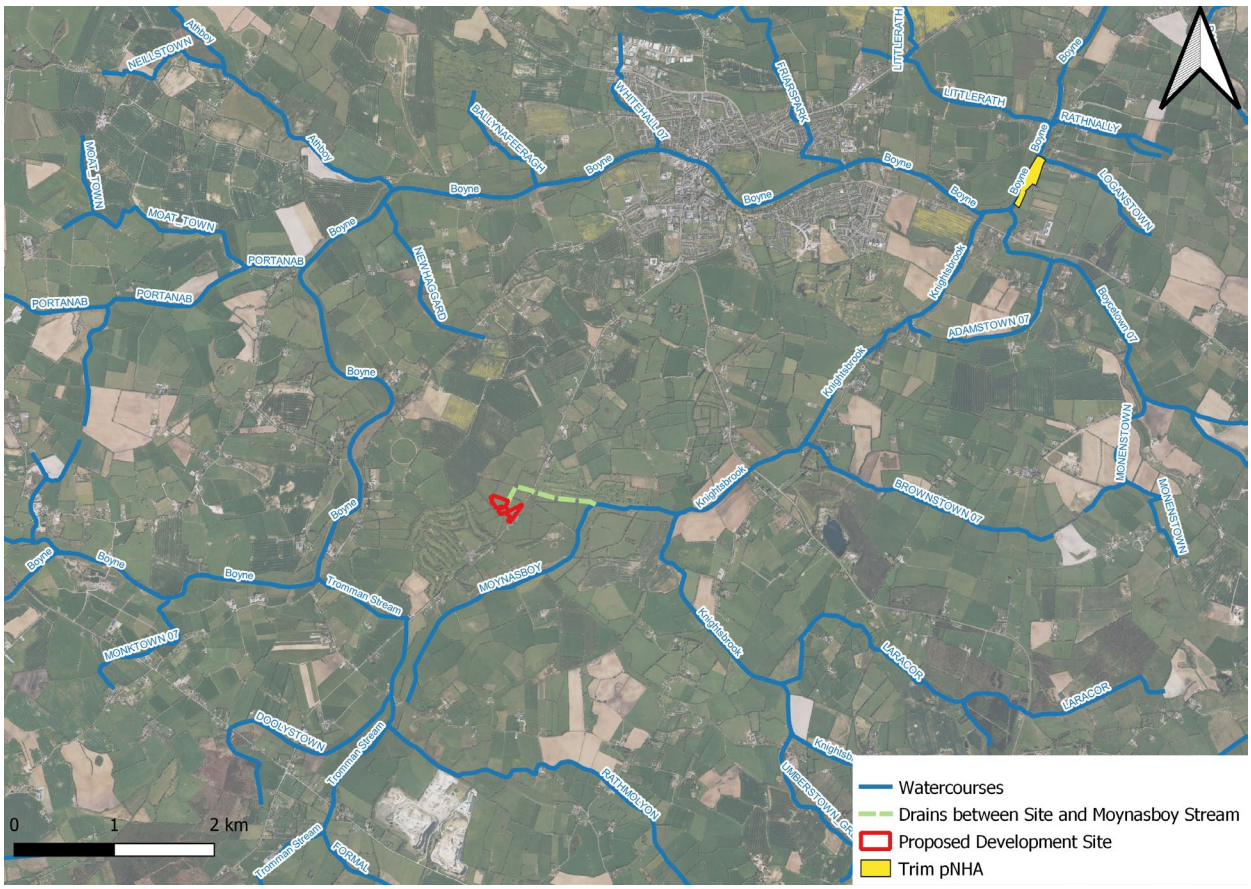


Figure 2-5 pNHA sites located within the vicinity of the proposed development site

3 Substation Construction Works

This section of the CEMP summarises various elements of main works to be undertaken as part of the proposed development. Key elements of the civil works and activities associated with the construction phase of the development are detailed in Section 3 herein.

3.1 Site Access

The proposed access to the substation shall be via the existing entrance gate of the R160.

If required, a wheel-wash will be installed within the site compound to wash dirt from the wheels of road trucks exiting the site. The access route shall be monitored to ensure no dirt accumulates on the public road due to the construction traffic and will be cleaned if required.

3.2 Site Preparation and Enabling Works

A programme of ground clearance and levelling will be undertaken across the proposed development site. Minor vegetation, topsoil removal and scrub clearance will be undertaken where required.

Prior to the preparation of the programme of clearance, a site investigation will be carried out. During the detailed design and engineering studies, further surveys of the proposed site may be undertaken to confirm the underlying ground conditions. The results of these surveys will be used to inform the final design and layout of the main plant / equipment items.

Topsoil will be stripped using excavators and stockpiled within the construction compound. The subsoil will be graded to align with the final ground levels as provided in the design. Stone for compound surfacing and access road will be delivered in a tipper truck and graded into place using an excavator. Once the stone base is in place, temporary perimeter fencing and gates will be erected, all within the boundary of the application site. Appropriate hoarding will be erected as required in order to shield neighbours from potential noise during construction works. Once fencing and gates are in place, installation of the site offices and construction compound, will commence.

3.2.1 Temporary Construction Area

An area has been identified for use as a construction compound. The area is currently agricultural land. The construction compound will facilitate temporary accommodation for the construction phase, and as a contractor laydown area for material storage for deliveries. This area will also be used to accommodate temporary welfare facilities. Any discharges from the welfare facilities will be connected to a sealed holding tank to be emptied and disposed of off-site by a licenced contractor to an approved licensed facility. A temporary surface will be provided comprising granular stone material with passing bays provided. Storage of fuels and refuelling will be undertaken within a bunded hardstand area. Water will be tankered on to site as required. Foul waste will be disposed off-site using appropriate facilities. A suitably bunded generator may also be used for power.

3.3 Civil Construction Works

The following is a non-exhaustive list of the works to be carried out:

- Site entrance modifications and creation of access road.
- Demarcation of construction works area, including site levelling to prepare the works area.
- Site establishment including welfare facilities, site office, etc.
- Construction of site drainage works.
- Enabling works and the formation of a construction route.
- Construction of underground 110 kV cable ducts.
- Installation of substation earth-grid.
- Construction of GIS building, including foundations works, structural steelwork erection, cladding and building finishing works.
- Construction of civils bases for transformer bunds, lightning monopoles, compound lighting columns, LV control cable surface block ducts etc.
- Permanent foul and surface water drainage works.
- Electrical and Mechanical fit out of building
- Compound stoning and paving,
- Finishing and Completion works.

All works will be carried out in accordance with the building regulations and up-to-date design codes at the time of mobilisation.

3.4 Electrical Installation

Electrical installation includes the following:

- Electrical and Mechanical fit out of buildings.
- Delivery and installation of two 110 kV/MV transformers and associated equipment. These are large pieces of electrical plant and the deliveries will be managed in accordance with regulations governing the movement of large loads.
- Delivery and installation of all other outdoor HV equipment.
- Delivery and installation of all 110 kV GIS switchgear
- Pulling and termination of cables.
- LV cabling and wiring of 110 kV equipment and protection and control equipment.
- Installation of compound lighting and security systems.
- Commissioning of all newly installed equipment.

For the duration of the construction phase of the substation there will be temporary welfare facilities installed. A traffic management plan will be implemented to mitigate against undue impacts.

3.5 Water Protection and Management

Surface water management measures to be installed prior to, or at the same time as the works they are intended to drain.

The effectiveness of these measures designed to minimise runoff entering works areas and capture and treat silt-laden water from the works areas. These measures will be monitored by the site manager.

The effectiveness of on-site drainage will be monitored by the site manager and identify any measures that may be required due to varying weather and on site conditions. In the event of any issues identified, the Site Manager to stop related works in the area to allow the root cause to be identified and addressed before works can proceed.

Specific surface water management measures will be detailed in the Contractors CEMP.

See relevant construction phase mitigation measures detailed in **Table 4.1**

3.6 Refuelling

The construction phase of the proposed development will require the use of plant and equipment which will utilise hydrocarbons. To minimise the potential risk of contamination from refuelling or general fuel management the following general controls are to be in place:

- Minimal fuel and oil quantities will be stored on site;
- To reduce the likelihood of leaks, all plant will be inspected prior to entry on site;
- Refuelling will only be carried out using double bunded mobile bowsers. The refuelling bowser will be operated only by designated, trained personnel. Spill kit equipment will accompany the bowser, a drip tray will be used when refuelling;
- Plant observed to have oil leaks will be immediately removed from site; &
- Site induction will contain actions to be taken in the event of an oil leak and details of who to contact in the event of a spillage will be circulated.

3.7 Waste and Resource Management

Waste management on site will be carried out in accordance with "*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects*" produced by the Department of Environment, Community and Local Government. Regulations in relation to waste management will be adhered to.

A Resource & Waste Management Plan (R&WMP) will be implemented by the contractor to minimise waste generation. The key principles underlying the plan will be to minimise waste generation and to segregate waste at source

The following general measures will be applied on site:

- Disposal of construction waste will be to licensed disposal facilities;
- On-site segregation of waste will be provided by the contractor using skips for timber, metal, general waste, and recyclables; &
- All waste will be removed from site by one or more waste haulage contractor(s) who hold a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO).

3.8 Emergency Response

The appointed Contractor will prepare a documented Emergency Response Plan for the works, which is appropriate to the risk posed by the works.

The Emergency Response Plan will identity all potential emergency situations that could arise in relation to the works (e.g., major pollution incident, fish kill, peat slip, fire, gas leak, flood, traffic accidents etc) including any consequential effects or impacts.

As appropriate, the Emergency Response Plan can link into other documents relevant to emergency response. Site staff must be trained in actions to take in the event of an incident and emergency.

The Contractor will have pollution control equipment that is appropriate to the site and works covered by the contract and the risks that they pose.

The Emergency Response Plan will include (but not limited to):

- Emergency Response Plan responsible persons;
- Contact details for external bodies that may be needed to support emergency response (including emergency services the Fire Service, EPA, Local Authority) ;
- Location of appropriate emergency equipment (e.g., oil and chemical kits and containment booms and anchors);
- Contact details for identified trained personnel in deployment of emergency equipment;
- Contact details for specialist pollution control contractor (if applicable);
- Site plan including drainage, waste storage areas, chemical and material storage areas, and storage/refuelling areas;
- Up-to-date inventory of chemical, product and waste on site and associated Material Safety Data Sheets;
- A procedure for disposal of fire water/contaminated water that may arise during an emergency
- Details of local environmental sensitivities and constraints
- Procedures for spill containment and remediation

3.9 Environmental Management Principles

Contractors will be required at all times to ensure the proper management of all relevant environmental aspects and associated risks while executing the works. The contractor will also be required to use an Environmental Management System (EMS) in keeping with the nature and scale of its business operations, a recognised and appropriate EMS, such as ISO 14001, EMAS, BS 8555 (Acorn Scheme) would be appropriate for large business operations.

3.10 Environmental Roles and Responsibilities

The general key personnel on site implementing the CEMP are listed below with roles and responsibilities detailed in the following sections:

- Project Manager

- Site Manager

3.10.1 Project Manager

The Project Manager is appointed by the contractor to manage and oversee the entire project. The Project Manager is responsible for:

- Implementing the Construction and Environmental Management Plan (CEMP);
- Implementing the Construction and Environmental Management Plan (RWMP);
- Management of the construction project;
- 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

3.10.2 Site Manager

The Site Manager manages all the works to construct the project, on behalf of the contractor. The Site Manager reports to the Project Manager. In relation to the environmental management, the Site Manager is responsible for:

- Ensuring all operatives/personnel are inducted prior to commencing works on site. The induction process will include requirements of CEMP;
- Ensure all works are carried out by operatives with relevant competency;
- Ensure all risk assessment / method statements cover requirements of CEMP where applicable;
- Supervise and monitor works to ensure compliance with CEMP; and
- Involved in preparing site-specific method statements for all works activities where there is a risk of environmental impact, by incorporating relevant mitigation measures.

3.10.3 Site Contacts

Table 1: Project Contacts

Position Title:	Name:	Phone:	Email:
Main Contractor	TBC	TBC	TBC
Project Manager	TBC	TBC	TBC
Site Manager	TBC	TBC	TBC
Position:	Name:	Phone:	Email:
ESB Project Manager	TBC	TBC	TBC

4 Schedule of Commitments

Project environmental mitigation has been set out in the application documentation as listed in Section 1.

The final CEMP will provide a framework for compliance auditing and inspection to ensure that these construction practices and mitigation measures as well as the conditions in the planning approval are adhered to.

4.1 Mitigation Measures

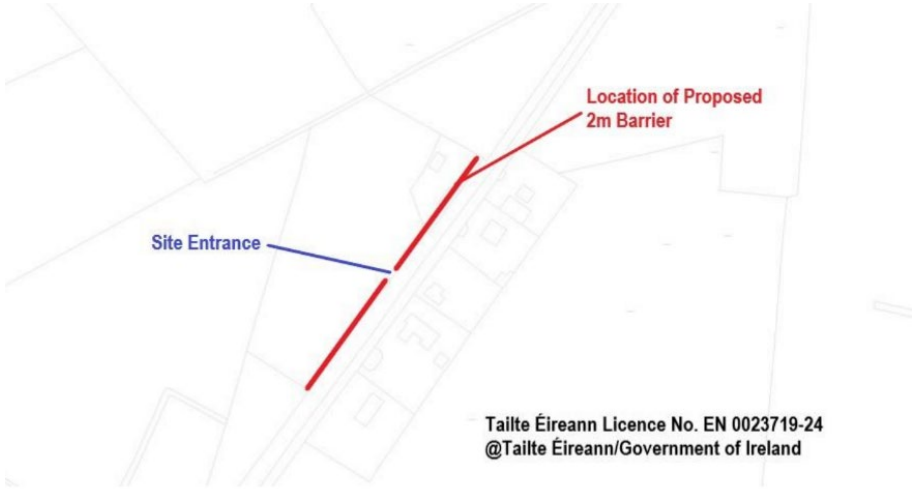
Table 4.1 below details all the construction phase mitigation measures from the PECR.

Table 4-1: Mitigation Measures as outlined in the PECR and Natura Impact Assessment

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
Construction Phase					
G1	General Mitigation during construction	PECR Section 4.3	Sediment control in the construction stage is important to ensure that only high quality, treated runoff leaves the site. Silt fences (to Hy-Tex Premium specification or similar) and silt traps will be installed prior to commencement of works and will be inspected daily to inform adaptive management as required. Other erosion control measures include: Minimising the area of exposed ground and ensuring excavation will not proceed faster than the rate of construction. Monitoring of the weather forecast prior to planning excavation works. Providing impermeable mats (plastic sheeting) as covers to mounded excavated material and open excavations during periods of heavy rainfall.		
G2	General Mitigation during construction	PECR Section 4.3	Concrete wash water will be retained on site and prevented from entering drains and refuelling will be undertaken using purpose designed equipment bunded to prevent leaks. Should any fuels or other liquids spill or leak from any vehicles these will be cleaned immediately, and any affected soils excavated and removed. Excavations for service runs will be managed using control measures such as bunding areas to prevent surface run-off and protecting drains. In order to reduce the risk of contamination arising as a result of spills or leakages, measures including, but not limited to, the following will be employed.		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
			• All collected waste will be managed in accordance with the Waste Management Act 1996, and associated Regulations. • Fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces. • Refuelling of plant, equipment and vehicles will be carried out on impermeable surfaces or using mobile drip trays where it's not possible to provide an impermeable surface. • All tanks and drums will be bunded in accordance with established best practice guidelines. • Spill kits will be provided at all compound locations and carried by all crews during underground cable installation works.		
B1	Habitats and protected / rare plant species	Biodiversity PECR Section 4.2.1	It is proposed to plant a new hedgerow, total length of approximately 189 m, and bolster 359 m of existing hedgerows with native whips. The hedgerows will be planted up with native species: Hawthorn, Blackthorn, Holly, Willow, Gulder Rose, Dog-Rose and Honeysuckle, see Appendix H for locations of these features. It is also proposed to plant 0.09 ha of native woodland around the site. Native species such as Oak and Scots Pine will be used. See Appendix H for full species list. It is proposed to allow a total of approximately 0.8 ha to establish as areas of wildflower meadows. These areas will not be reseeded with intensive agricultural grasses, with local native wildflowers being encourages to established through the maintenance measures of these areas. Locally sourced Yellow Rattle is to be added to areas of grassland/ disturbed soil.		
B2	Species (Birds)	Biodiversity PECR Section 4.2.1	The removal and trimming of scrub, hedgerows and treelines will be undertaken outside of the breeding bird season (March 01st to August 31st inclusive). Where this period cannot be avoided, nesting bird surveys will be carried out by an experienced ecologist within 48 hours of any vegetation clearance. Where nests are recorded, a no works exclusion buffer will be implemented until after birds have fledged the nest.		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
B3	Species (Bats)	Biodiversity PECR Section 4.2.1	Any construction lighting will be reviewed and agreed with an ecologist and will be positioned as to avoid light spill on to potential bat roosting, commuting or foraging sites – i.e. no light spill on to the derelict cottage or hedgerows and treelines. Luminaries should lack UV elements when manufactured, with LED luminaires used where possible. A warm white light source (2700 Kelvin or lower) will be used, with peak wavelengths higher than 550 nm. Column heights will be considered to minimise light spill. Only luminaires with negligible or zero Upward Light Ratio, and within good optical control will be considered.		
B4	Species (Mammals)	Biodiversity PECR Section 4.2.1	There is no potential for impacts on badger during the construction of the proposed development and as such no mitigation measures are required.		
B5	Species (Other Taxa)	Biodiversity PECR Section 4.2.1	There is no potential for impacts on frogs or any other taxa during the construction of the proposed development and as such no mitigation measures are required.		
FRA1	Surface Water Drainage	Flood Risk Assessment PECR Section 4.2.2	The Surface water drainage proposal for the site has been developed to mimic the natural drainage patterns of the site in accordance with the Best Management Practices of SuDS. The surface water proposals will replicate the greenfield drainage conditions of the site where possible.		
N1	Noise	Noise Impact Assessment PECR App. D (Section 7.1)	Where construction activity takes place for a development in the vicinity of residential properties, it is standard practice that the activities would operate between the hours of 07:00 and 18:00 on Monday to Fridays, between 08:00 and 13:00 on Saturdays and there will be no activity on Sundays or Bank Holidays.		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
N2	Noise	Noise Impact Assessment PECR App. D (Section 7.1)	It is proposed that a noise barrier in the form of site hoarding is erected at the site boundary with the R160 and directly across the road from the nearest noise sensitive properties. The location of this barrier is illustrated in Figure 7.1 of Appendix D. It is proposed that this is a minimum of 2m height with no gaps in it, which will provide noise attenuation of approximately 10dB(A) in the direction of the nearest noise sensitive properties. 		
N3	Noise	Noise Impact Assessment PECR App. D (Section 7.1)	A detailed Construction Environmental Management Plan (CEMP) will be prepared and will include a range of measures aimed at reducing the potential construction noise impacts on the nearest receptors to the proposed development site. This plan will address the mode and timing of construction activity in close proximity to the site boundary with the nearest receptors, aiming to reduce the noisiest activities in the vicinity of the boundary of the proposed site. This should also include measures to communicate and coordinate construction phase activities at the nearest boundary to the most affected receptors so as to reduce these noise impacts to the lowest possible levels. The		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
			detailed CEMP will include the noise threshold limits included BS5228:2009+A1:2014, which must be adhered to throughout the construction phase. On the basis of the noise monitoring survey completed, the lowest noise threshold limits included in this table (i.e. Category A) must be applied for all construction activities. British Standard BS5228:2009+A1:2014 – Noise and vibration control on construction and open sites outlines a range of measures that can be used to reduce the impact of construction phase noise on the nearest noise sensitive receptors. These measures should be applied by the contractor where appropriate during the construction phase of the proposed development. Examples of some of the best practice measures included in BS5228 are listed below: • ensuring that mechanical plant and equipment used for the purpose of the works are fitted with effective exhaust silencers and are maintained in good working order; • careful selection of quiet plant and machinery to undertake the required work where available; • all major compressors should be 'sound reduced' models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use; • any ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers; • machines in intermittent use should be shut down in the intervening periods between work;		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
			• ancillary plant such as generators, compressors and pumps should be placed behind existing physical barriers, and the direction of noise emissions from plant including exhausts or engines should be placed away from sensitive locations, in order to cause minimum noise disturbance. Where possible, in potentially sensitive areas, acoustic barriers of enclosures should be utilised around noisy plant and equipment. • Handling of all materials should take place in a manner which minimises noise emissions; • Audible warning systems should be switched to the minimum setting required by the Health & Safety Executive; A complaints procedure should be operated by the Contractor throughout the construction phase.		
T1	Traffic	Traffic and Transportation PECR App. E	It is considered that there are no predicted impacts with respect to Traffic and Transportation regarding the proposed construction and post-construction/operational phases of the proposed development. Consequently, it is considered that no mitigation measures are required.		
CH1	Cultural Heritage	Cultural Heritage Appraisal PECR App. F (Section 9)	The following mitigation measures, based on *OPR Practice Note PN03: Planning Conditions (October 2022),* are suggested: 1. The developer will engage a suitably qualified archaeologist (licenced under the National Monuments Acts) to monitor all site clearance and excavations required of the development. The use of appropriate machinery to ensure the preservation and recording of any surviving subsurface archaeological remains will be necessary. No subsurface work will take place in the absence of the archaeologist without his/her express consent. 2. Should archaeological remains be identified during archaeological monitoring, all works in the area of archaeological interest will be		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
			suspended, pending a decision of the Planning Authority, in consultation with the National Monuments Service, Department of Housing, Local Government and Heritage. 3. The developer will facilitate the archaeologist in recording any remains identified. Any further archaeological mitigation measures specified by the Planning Authority, following consultation with the National Monuments Service, will be complied with by the developer. 4. Following the completion of all on-site archaeological interventions and any necessary post-excavation specialist analysis, the Planning Authority and the National Monuments Service will be furnished with a final archaeological report describing the results of the monitoring and any other archaeological investigations/interventions that might subsequently have been required. All resulting and associated costs will be borne by the developer. 5. The Construction Environmental Management Plan (CEMP) shall include the location of all archaeological and architectural heritage constraints relevant to the proposed development. The CEMP shall clearly describe all identified likely archaeological and architectural impacts, both direct and indirect (visual), and all mitigation measures to be employed to protect the archaeological/architectural heritage environment during all phases of site preparation and construction activities.		
LV1	Landscape and Visual	Landscape and Visual Impact Assessment PECR App. G (Section 3)	The main mitigation measure employed is 'mitigation by avoidance'. The siting of the proposed Fosterstown Distribution Station is in a robust and well-contained rural area that also avails of both terrain and hedgerow screening such that the scheme will not be prominent within the surrounding landscape. Retention of existing hedgerow boundaries within and around the site also prevents a sense of ambivalence, aids visual screening, and maintains the existing field pattern. In this respect, the proposed Fosterstown Distribution Station is not perceived to impose itself on the existing landscape pattern.		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
LV2	Landscape and Visual	Landscape and Visual Impact Assessment PECR App. G (Section 3)	In addition to retaining the existing hedgerows around the site, it is also proposed to bolster existing perimeter hedgerows with under-planting and inter-planting of whip transplants to ensure dense and consistent site screening in perpetuity. Whip species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. A new hedgerow is proposed outside the palisade security fence that encloses the main substation. This planting will be allowed to mature up to a maintained height of 3-4m to further enhance and aid in screening the proposed development when viewed from nearby dwellings and roads. Some native trees are proposed across the site and a grassland/meadow management protocol is proposed in the undeveloped portions of the site. The mitigation measures are indicated on the Landscape Mitigation Plan (PECR Appendix H).		
WR1	Construction Waste and Resource Management	PECR Section 4.2.7	Waste management on site will be carried out in accordance with "*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects*" produced by the Department of Environment, Community and Local Government. Regulations in relation to waste management will be adhered to. A Resource & Waste Management Plan (R&WMP) will be produced and implemented by the contractor to minimise waste generation. The key principles underlying the plan will be to minimise waste generation and to segregate waste at source. The following general measures will be applied on site: Disposal of Construction waste will be to licensed disposal facilities; On-site segregation of waste will be provided by the contractor using skips for timber, metal, general waste, and recyclables; &		

Ref No.	Reference Heading	Sub-Chapter	Construction Phase Mitigation Measures	Audit Results	Action Required
			All waste will be removed from site by one or more waste haulage contractor(s) who hold a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO).		

5 Auditing

The following is to be considered by the contractor when developing an environmental audit/inspection/;

- Environmental control measures are reviewed and monitored on site via audits, inspections & monitoring;
- Environmental audits will be carried out during the construction phase of the project;
- Environmental audits will be carried out by the Site Manager or a member of the Contractor's Management Team;
- Environmental audits will be conducted at planned intervals to determine whether the CEMP is being properly implemented and maintained. The results of environmental audits will be provided to the Site Manager;
- A checklist will be prepared and form the basis for reporting;
- In the event that the measures set out in the CEMP are not being met, corrective action must be taken such as alteration of work practices; additional pollution control measures, additional training etc; and
- The frequency and scope of inspections and monitoring will be agreed in advance with ESB and will be dependent on the nature of the work being carried out at the site through the development phases.

5.1 Environmental Compliance

The following definitions will apply in relation to the classification of Environmental Occurrences during construction:

- Environmental Near Miss: An occurrence which if not controlled or due to its nature could lead to an Environmental Incident.
- Environmental Incident: Any occurrence which has potential, due to its scale and nature, to migrate from source and have an environmental impact beyond the site boundary.
- Environmental Exceedance Event: An environmental exceedance event occurs when monitoring results indicate that limits for a particular environmental parameter (as indicated in the Environmental Monitoring Programme) has been exceeded.
- Environmental Non-Compliance: Non-fulfilment of a requirement and includes any deviations from established procedures, programs and other arrangements.

An exceedance will immediately trigger an investigation into the reason for the exceedance occurring and the application of suitable mitigation where necessary.

Exceedance events can be closed out on achieving a monitoring result below the assigned limit for a particular environmental parameter.

5.2 Corrective Action Procedure

A corrective action is implemented to rectify an environmental problem on-site. Corrective actions will be implemented by the Site Manager. Corrective actions may be required as a result of the following;

- Environmental Audits
- Environmental Inspections and Reviews
- Environmental Incidents
- Environmental Complaints

A Corrective Action Notice will be used to communicate the details of the action required to the main contractor. A Corrective Action Notice is a form that describes the cause and effect of an environmental problem on site and the recommended corrective action that is required. The Corrective Action Notice, when completed, will include details of close out and follow up actions.