



**BALDONNELL 110KV SUBSTATION  
ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)  
VOLUME III – APPENDIX 3-2  
Construction Environmental Management Plan (CEMP)**



# Baldonnell 110KV Substation

## CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)

| Document Control Sheet |   |
|------------------------|---|
| Document Reference     | Baldonnell 110KV Substation CEMP_D01                                    |
| Report Status          | Planning Issue  |
| Report Date            | June 2023   |
| Current Revision       | D02   |
| Client:                | Greener Ideas Limited   |
| Client Address:        | C/O Bord Gáis Energy Ltd<br>No 1 Warrington Place<br>Dublin<br>D02 HH27 |
| Project Number         | 11069   |

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| Revision | Description    | Author: | Date     | Reviewed By: | Date       | Authorised by: | Date       |
|----------|----------------|---------|----------|--------------|------------|----------------|------------|
| D02      | Planning Issue | CN      | 25/05/23 | TL/CD        | 26/05/2023 | LB             | 05/06/2023 |
|          |                |         |          |              |            |                |            |
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## 1.0 INTRODUCTION

Greener Ideas Limited (GIL) are seeking planning permission to develop a 110kV Substation (hereafter the Baldonnell Substation) at a site located in Profile Park, Dublin 22. The proposed development site is located approximately 12km south-west of Dublin City Centre and is immediately adjacent to the existing Digital Realty Data Centre.

The proposed Baldonnell Substation and associated grid connection are being developed to provide a connection from the adjacent peaking power plant to the existing electricity transmission system. Electrical power will be exported from the power plant's main transformers through the proposed Baldonnell Substation to the existing Barnakyle 110kV substation, which is operated by EirGrid and owned by ESB. The associated grid connection works will consist of underground cabling.

An Environmental Impact Assessment Report (EIAR) has been prepared to accompany the planning application and incorporate all elements of the proposed development works including the 110kV Substation, the electrical grid connection, and the temporary construction compound. Collectively this is referred to as the Baldonnell Substation.

The purpose of this Construction and Environmental Management Plan (CEMP) is to communicate the key environmental obligations that apply to all Contractors, their sub-Contractors and employees while carrying out any form of construction activity for the development of the proposed Baldonnell Substation.

This CEMP has been prepared to outline the proposed management and administration of site activities for the Construction Phase of the proposed development, to ensure that all construction activities are undertaken in an environmentally responsible manner. This CEMP summarises the environmental commitments for the construction of the proposed development, and the measures to ensure compliance with legislation and the requirements of statutory bodies, all as detailed in the EIAR.

This CEMP will be a live document and will be reviewed and updated, as necessary. Upon appointment, the Main Contractor for construction of the proposed development shall update this document to produce a Final CEMP which will account for any additional requirements set out in Planning Conditions. The following relevant guidance has been referenced in the preparation of this CEMP:

- Environmental Protection Agency (EPA), Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022).

### 1.1 Proposed Development

The proposed development will comprise the construction and installation of the following:

- Baldonnell Substation: This will measure approximately 87.75m long, 22.25m wide and will be bounded by a 2.6m high palisade fence. The compound will house a 126m<sup>2</sup> EirGrid 110kV substation control building;
- Grid Connection - The proposed grid connection will consist of underground cabling (UGC) from the proposed Baldonnell Substation to Barnakyle 110kV Substation;
- Temporary Construction Compound - A temporary construction compound will be provided approximately 185m southeast of the proposed development site;
- The proposed development will also include landscaping, site services and all associated infrastructure works necessary to facilitate the development.

Section 3.6 Summary of the Proposed Development of this CEMP outlines the elements of the proposed development listed above in further detail.

## 1.2 Scope of the CEMP

This CEMP provides a mechanism for ensuring compliance with environmental legislation and statutory consents to ensure the minimal impact of the construction activities on the surrounding community and general public. It defines the approach to environmental management at the site during the construction phase and addresses all relevant environmental aspects of the management of site preparation and construction work within the proposed development works area, as set out in Figure 2-1.

The scope of this CEMP includes:

- All construction elements of the proposed Baldonnell Substation development;
- The implementation and management of environmental controls and mitigation measures;
- A documented process to ensure measures identified through the planning phase of the proposed Baldonnell Substation development will be applied in practice.

At a minimum, the Contractor's CEMP at construction stage will contain:

- A statement of the environmental aims and policy objectives of the proposed Baldonnell Substation development;
- Roles and responsibilities of key individuals;
- Environmental management and reporting structure;
- Site management and construction activity details;
- Environmental mitigation measures;
- Environmental awareness training programmes;
- Environmental monitoring programmes and requirements;
- Inspection and auditing programmes; and
- Emergency response plans and procedures for environmental incidents.

This CEMP should be read in conjunction with the EIAR and supporting documentation. In the unlikely event of any contradiction between this CEMP and the EIAR, the EIAR shall take precedence.

## 1.3 Implementation of the CEMP

Key to the implementation of this CEMP is the delegation of responsibility for the CEMP to the Construction Environmental Manager/Safety, Health, Environmental and Quality (SHEQ) Officer, or other suitably qualified appointed person on behalf of the Contractor, who will regularly liaise with and update the Developer on all environmental issues relating to the proposed development during the construction phase. As part of the appointment of a Contractor and agreement of Contracts, the Developer will determine the lines of communication for environmental compliance with the local authorities and relevant stakeholders.

In terms of overall environmental responsibility, everyone on site is responsible for ensuring that their actions constitute good environmental practice. All site personnel are charged with following good practice and encouraged to provide feedback and suggestions for improvements. All site personnel are also required to ensure compliance with the requirements of the CEMP. Compliance with the CEMP, the procedures, work practices and controls will be

mandatory and must be adhered to by all site personnel and Contractors employed during the construction phase.

The CEMP seeks to:

- Provide a basis for achieving and implementing the construction related mitigation measures identified in the EIAR; and
- Promote best environmental on-site practices for the duration of the construction phase.

## 1.4 Aims and Objectives

The key aims of the proposed Baldonnell substation development are:

- To ensure the proposed development is undertaken in accordance with best practice guidance for the management of the environment during the construction works;
- To ensure that mitigation measures outlined within the EIAR are put in place;
- To ensure that construction activities are carried out in accordance with all planning conditions for the development; and
- To carry out the works with minimal impact on the environment.

The primary objectives for ensuring the above aims are achieved during the construction phase of the proposed Baldonnell Substation are:

- Appointment and delegation of responsibility to an individual for monitoring environmental compliance and adherence to the Contractor's CEMP;
- Updating the Contractor's CEMP on a continuous basis in accordance with regular environmental auditing and site inspections. This will confirm the efficacy and implementation of all relevant mitigation measures and commitments identified in the planning application documentation;
- Providing adequate environmental training and awareness to all personnel;
- Establishing documented schedules and records for monitoring and inspections;
- Establishing reporting procedures for any incidents on site with potential to impact on the environment;
- Providing opportunities for community feedback and submission of complaints; and
- Adopting a sustainable and socially responsible approach to construction.

## 1.5 Revisions to the CEMP

This CEMP is considered a 'live' document and as such will be reviewed on a regular basis to allow any changes to construction programme, operations or unforeseen issues be incorporated at any stage throughout the proposed development as deemed necessary by the Employer, their agents or relevant authorities. The CEMP will be subject to continual review to address, for example:

- Any conditions stipulated in the planning approval;
- Any requirements/issues highlighted through consultations prior to works;
- To ensure it reflects best practice at the time of construction; and
- To ensure it incorporates the findings of any pre-construction site investigations.

This CEMP will be provided to the appointed Contractor who will have responsibility for updating the document as necessary through the construction phase.

The Contractor's CEMP will incorporate the conditions associated with any grant of planning for the proposed development. This Contractor's CEMP will be subject to ongoing review throughout the construction phase of the proposed Baldonnell Substation, 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.

The appointed Contractor is required to include further details and/or confirmation in the final CEMP which will include:

- Details of emergency plan including personnel and contact numbers;
- Details of fuel storage areas (including location and bunding);
- Construction lighting details;
- Site and traffic signage; and
- Method statements.

The appointed Contractor shall also agree and implement monitoring measures to monitor the effectiveness of the CEMP.

## 1.6 Environmental Awareness & Training

In order to ensure that environmental awareness and compliance is communicated effectively at the start and throughout the construction works, this CEMP and its contents will be communicated to all site personnel, including management staff, operatives and sub-Contractors.

The key elements of this CEMP will form part of the site induction which will be mandatory for all employees, Contractors and visitors attending the site. Environmental toolbox talks will be provided to all site personnel and sub-consultants on a regular basis. These will be targeted at particularly sensitive environmental issues such as:

- Protection of sensitive ecological habitats and key ecological receptors;
- Works close to water bodies;
- Water pollution and silt control;
- Water pollution in relation to cement and concrete handling;
- Spill prevention and control;
- Dust management; and
- Sensitive archaeological sites and Waste management.

## 2.0 OVERVIEW OF THE EXISTING SITE

### 2.1 Site Location

The site of the proposed Baldonnell Substation is located in Profile Park, Dublin 22 which is situated c.1 km west of Clondalkin. Profile Park is a 100 acre (40.5 hectare (Ha)) fully enclosed, private business park. The immediate area is predominantly commercial / industrial in nature. No existing environmental (waste or industrial emissions) licence has been or is currently held for this site. The location of the proposed Baldonnell Substation site is indicated on Figure 2-1 below.



*Figure 2-1: Site Location and Layout*

During recent ecological field surveys undertaken on the 5<sup>th</sup> January 2023, habitats within the proposed development site were classified according to Fossitt (2000). The proposed development site has recently been disturbed by nearby construction works, which has resulted in the clearing of habitat and the stock piling of sediment and spoil. This has resulted in the site currently comprising of a mosaic of spoil and bare ground (ED2), in areas that have been cleared, and wet grassland (GS4) in areas which have not been disturbed. The proposed electric grid connection will be located within the small road located immediately north of the proposed development site. The road comprises tarmac and concrete verges (BL3). The proposed construction compound and laydown area currently comprises dry meadow grassland (GS2).

## 2.2 Existing Land, Soils and Geological Environment

The site of the proposed Baldonnell Substation is predominantly covered by rough grassland, surrounded by industrial, commercial and transport units. Access is via the existing road network within Profile Park, located off the R134.

The proposed development site is located within an industrial landscape which has recently been developed. An existing datacentre is adjacent to the proposed development's boundary. The Grange Castle Golf Club is located approximately 0.2km to the east and northeast of the proposed development.

The topography of the proposed grid connection can be described as mostly flat with elevations from c.73 mAOD to 76 mAOD. The GSI data does not indicate there are any geomorphology features within the site boundary.

The infrastructure delivery route is along the R134 through artificial surfaces associated with industrial, commercial and transport units.

The bedrock geology on the GSI 1:100 000 map indicate that this site is underlain by Lucan Formation limestone. The regional bedrock geology covering the proposed site and grid/ gas connection is shown in Chapter 8 (Land, Soils and Geology) of the EIAR.

The GSI database contain records of verified borehole logs, groundwater wells and springs within and close to the site of the proposed development and granted power plant. Bedrock exposures in the local area indicate strong to moderately strong, dark grey, fine grained, argillaceous limestones with minor calcareous shales.

A historical (currently inactive) quarry lies approximately 0.6km to the south of the southern site boundary. No active mineral or aggregate sources have been identified by GSI data within 2km of the site boundary.

The GSI online Aggregate Potential Mapping Database shows that the site is located within an area mapped as being typically moderate in terms of crushed rock aggregate potential, with some areas of low to high potential. There are no significant mapped areas of granular aggregate potential (i.e. potential for gravel reserves).

According to the Geological Survey of Ireland Spatial Resources, there are no Irish Geological Heritage sites inside the site boundary. No geological heritage sites have been identified within 2km of the site boundary. Belgard Quarry, a large active quarry, is located 2.2 km southeast of the proposed development. Belgard is the largest limestone quarry in the country and is excavating the Lucan Formation limestones. It is a designated County Geological Site (Site Code: SD002) of vital economic importance and of geological heritage significance.

Based on mapping by the EPA this indicates that this site consists of 2 no. types of soil, namely:

- BminPD – Basic deep poorly drained mineral;
- BminDW – Basic deep well drained mineral.

The development area within the red line boundary is underlain mostly by basic deep poorly drained material.

The dominant subsoil occurring in the region is classified as till. The site is underlain by till derived from limestone (TLS). Chapter 8 (Land, Soils and Geology), of the EIAR presents the regional subsoils in this area, including the area within the red line boundary and grid/gas connection.

The till, which is Quaternary in age, formed as an extensive envelope of the landscape in the area since deglaciation approximately 7,000 – 10,000 years ago. Based on the site walkover date the site is underlain by firm, brown and grey slightly gravelly silty CLAY with occasional cobbles and pieces of broken rock. Gravel is subangular to subrounded, fine to medium. Cobbles are subangular to subrounded.

A review of the EPA website for both existing and historic licensed and illegal waste activities was carried out to identify any potential contamination sources present in the area and to identify any potential contaminating activities near the proposed development. The desk study indicated that no waste facilities, illegal waste activities within a 2km radius of the proposed site. The has is a greenfield site with no previous development. No visual or olfactory evidence of contamination was noted during the site walkover, undertaken on the 13th of February 2023.

A review of the landslide information on the GSI Irish Landslides Database indicate that there are no recorded landslide events within 2km, or within a wider context of 6km of the site. The site walkover conducted in 2023 confirmed the site is generally very flat comprising topsoil underlain by firm glacial till.

## 2.3 Existing Hydrological and Hydrogeological Environment

The proposed Baldonnell Substation site is located within the River Liffey and Dublin Bay catchment, located within the National River Basin District and on a regional scale, the proposed development site is located within the Liffey sub catchments.

The River Liffey and Dublin Bay catchment includes the area drained by the River Liffey and by all streams entering tidal water between Sea Mount and Sorrento Point, Co. Dublin, draining a total area of 1,616km<sup>2</sup>. The largest urban centre in the catchment is Dublin City. The other main urban centres are Dun Laoghaire, Lucan, Clonee, Dunboyne, Leixlip, Maynooth, Kilcock, Celbridge, Newcastle, Rathcoole, Clane, Kill, Sallins, Johnstown, Naas, Newbridge, Athgarvan, Kilcullen and Blessington. The total population of the catchment is approximately 1,255,000.

The River Liffey rises on the western slopes of Tonduff in the Wicklow Mountains, from where it flows west, before being joined by the Brittas River from the north and then flowing into the northern end of Pollaphuca Reservoir (created by the ESB in the 1930s). The Liffey flows out of the reservoir through the Pollaphuca generating station and into the lower reservoir and generating station at Golden Falls. The Liffey then flows west through Kilcullen before flowing through Newbridge, then past Sallins and Clane, after which it is joined by the Morell from the south.

The Liffey continues through Celbridge to Leixlip before which it flows into Leixlip reservoir and generating station. The Liffey then enters a steep-sided valley, through which it flows past Islandbridge, where the river becomes tidal, and through the centre of Dublin City.

The main regional surface water features include the Griffeen River (located approximately 1km northwest of the development) and the Liffey River (located approximately 4.5km north of the development).

The Baldonnell Stream (IE\_EA\_09L012100) is located within the site boundary. The EPA maps show the stream to run through the central portion of the proposed development in a north-south orientation. The Baldonnell Stream joins the Griffeen River (IE\_EA\_09L012100) approximately 1.3km downstream from the proposed development. The Griffeen River then joins the Liffey River (IE\_EA\_09L012350) at Lucan, located 4.8km north of and downstream from the proposed development.

The neighbouring data centre site has diverted the upstream section of Baldonnell Stream where it has been culverted under their site before it enters a 'V-Shaped' channel within the proposed development. The diverted stream enters the proposed development at the south-eastern corner, where it continues to flow northwards along the 'V-shaped' channel which has steep grassy banks up to 3m in height. The Baldonnell Stream follows the development site's eastern boundary before it is culverted beneath the existing road through a concrete circular culvert measuring approximately 1m in diameter. The Baldonnell Stream is 0.3 to 0.6m in width, with water depths averaging at 0.2m in the winter period, the stream flow was mostly gentle, and the substrate varied from clayey cobbles to silt.

Minor surface water ponding occurs on the site. The surface water ponding is considered to be seasonal and mainly associated with periods of heavy, prolonged and intense rainfall. The

ponding forms as a result of acceptance of drainage from the adjacent site and of natural attenuation of rain. The ponding has minor connectivity with the Baldonnell Stream (Liffey\_170, IE\_EA\_09L012100) through the small drainage pipe located at the south-eastern corner of the proposed site.

## 2.4 Existing Ecological Environment

### 2.4.1 Designated Conservation Sites

#### 2.4.1.1 Sites of International Importance

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network. The Natura 2000 network comprises sites of the highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises SACs and SPAs, where SACs are selected for the conservation of Annex I habitats (including priority types, which are considered threatened) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats.

Nine European sites (six SACs and three SPAs) occur within a 15km<sup>1</sup> radius of the proposed development site. The European sites; North Dublin Bay SAC (000206), South Dublin Bay SAC (000210), South Dublin Bay and River Tolka Estuary SPA (004024) and North Bull Island SPA (004006) are all hydrologically connected to the proposed development site via the Baldonnell Stream and the River Liffey (hydrological route ca. 30km downstream).

#### 2.4.1.2 Sites of National Importance

Natural Heritage Areas (NHA) are the basic wildlife designation in Ireland. These areas are considered nationally important for the habitats present, or which holds species of plants and animals whose habitats need protection. Under the Wildlife Acts, NHAs are legally protected from damage from the date they are formally proposed for designation (source: www.npws.ie). Proposed Natural Heritage Areas (pNHA) were published on a non-statutory basis in 1995 and have not since been statutorily proposed or designated.

There are no NHAs located within 15km, or with a hydrological link, to the proposed development site. Fifteen pNHAs occur within 15km of the proposed development site. Four pNHAs; Liffey Valley pNHA (000128), North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210) and Dolphin Docks pNHA (000201) are all hydrologically connected to the proposed development site via the Baldonnell Stream and the River Liffey (hydrological route ca. 30km downstream).

#### 2.4.1.3 Other Sites of Conservation Interest

Other sites of conservation interest within the Zone of Influence (Zoi) or within 15km of the proposed development site are discussed hereunder:

- There are no National Parks located within 15km of the study area;
- There are no Nature Reserves located within 15km of the study area;

<sup>1</sup> Guidance in Appropriate Assessment of plans and projects in Ireland notes that a distance of 15km is recommended for the identification of relevant European sites in the first instance (EHLG, 2010).

- Two RAMSAR sites; Sandymount Strand/Tolka Estuary (RAMSAR\_Code: 832) and North Bull Island (RAMSAR\_Code: 406) are located within Dublin Bay and therefore are hydrologically connected the proposed development site.

## 2.4.2 *Habitats and Flora*

All habitats were classified according to Fossitt (2000) during the ecological walkover of the proposed development site. The assessment of the habitats was undertaken in accordance with the NRA (2009) guidelines. Habitats within the proposed development footprint are listed below:

- Mosaic of Wet Grassland (GS4) and Spoil and Bare Ground (ED2);
- Building and Artificial Surfaces (BL3);
- Dry Meadows and Grassy Verges (GS2);
- Hedgerow (WL1) and Treeline (WL2);
- Depositing Lowland River (FW2);
- Drainage Ditch (FW4).

## 2.4.3 *Fauna*

### 2.4.3.1 *Badger*

Badgers and their setts are protected under the Wildlife Acts. No evidence of badger, including their setts, were recorded within the proposed development site boundary, or within a 150m buffer of the development site.

### 2.4.3.2 *Otter*

Otters and their breeding and resting places are protected under the Wildlife Acts and under the EU Habitat Directive. An otter survey was undertaken along the Baldonnell Stream, within the proposed development site and 150m upstream and downstream. No evidence of otter or their resting or breeding sites were recorded during the survey. Otter are unlikely to commute and forage along the section of the Baldonnell Stream located in proximity to the proposed development site due to the highly modified nature of the watercourse and the large sections of culverts present both upstream and downstream. There is potential however that otter may occur further downstream.

### 2.4.3.3 *Bats*

All bat species and their roost sites are protected under the Wildlife Acts. There is additional protection for lesser horseshoe bat (*Rhinolophus ferrumequinum*) which is listed as an Annex II species under the EU Habitats Directive.

No bat roost features were recorded within the proposed development site. A well-established hedgerow and treeline occurs along the eastern boundary of the proposed construction compound. None of the trees within the hedgerow and treeline were identified as having bat roost potential, however there is potential that bats may forage or commute along this hedgerow and treeline.

### 2.4.3.4 *Other Small Mammals*

There is potential that the proposed development site may support other smaller protected mammal species such as hedgehog, pygmy shrew, Irish stoat and Irish hare. No evidence of the above listed species, or any other protected mammal species were recorded during the field



surveys, however, the grassland habitats within the proposed development site may be utilised by these species, at least on occasion. The local small mammal population was assessed as being of Local Importance (higher value).

Evidence of fox, which included tracks and scat, was recorded to the west of the proposed development site. Fox are not currently protected under National law, however there is an obligation to protect biodiversity within Ireland under the Convention on Biological Diversity.

#### **2.4.3.5 Birds**

All wild birds and their nests are protected under the Wildlife Acts. Additionally, a number of bird species are also protected under the EU Birds Directive (79/409/EEC). During the walkover survey a single buzzard (*Buteo buteo*) was recorded soaring over the proposed development site. Other evidence of bird activity included tracks, likely belonging to snipe, recorded immediately east of the proposed development site. As noted, in Chapter 12 Biodiversity of the EIAR, Snipe have previously been recorded using the site and surrounding area.

As noted, in Chapter 12 Biodiversity of the EIAR, a lapwing nest with eggs was identified in close proximity to the proposed development during a survey undertaken in 2021. As the ecology survey for the proposed development was undertaken in winter, breeding activity by lapwing could not be established. However, the previous record of a nest within the area, suggests the proposed development site is likely to provide suitable nesting habitat for lapwing.

#### **2.4.3.6 Herpetofauna and Reptile Species**

The Wildlife Acts provides protection to Ireland's only reptile; common lizard (*Zootoca vivipara*) and two amphibian species, common frog and smooth newt (*Lissotriton vulgaris*). No suitable habitat to support common lizard, or smooth newt was recorded within the proposed development site. Baldonnell Stream and the drainage ditch, however, are likely to provide some suitable habitat for common frog.

#### **2.4.3.7 Aquatic Species**

The Baldonnell Stream was assessed as having no suitable habitat to support protected fish species, white-clawed crayfish or lamprey species. The stream at this location was assessed as having low fisheries value due to the heavily modified nature of the watercourse, the presence of culverts and the high levels of sedimentation present.

## **3.0 DESCRIPTION OF THE CONSTRUCTION WORKS**

### **3.1 Overview**

It is expected that construction will commence in 2023 with design, construction, and commissioning activities lasting for approximately 12 months. The proposed Baldonnell 100kV substation is expected to become fully operational, along with the gas fired power plant, which is currently expected to be operational in 2024, subject to timely receipt of the necessary statutory consents.

### **3.2 Pre-construction**

The pre-construction phase of development includes preparatory works (i.e., post planning surveys and reporting) and consultation with statutory bodies and the public.

It will be required to carry out site investigations along the cable route, prior to construction, to confirm design assumptions. The following investigation methods may be carried along the grid connection cable route:

- Slit trenches at locations of service crossings (Full road width).
- Trial holes along the route to ascertain ground conditions and thermal resistivity of the soil.

Following this process, site clearance activities will commence. Typical activities will include preparation of the construction working area and topsoil stripping. Prior to the commencement of construction activities, the area for development will be fenced off, and the site will be levelled to 74.6 AOD. Soil management proposals will be developed and will indicate:

- The intended soil stripping depth;
- Options for separating and keeping different soils apart;
- Methods for handling soil;
- The location and height of soil storage mounds and how long they will be present; and
- Proposals for reinstating or disposing of soils.

Site mobilisation will see the establishment of temporary facilities to accommodate competent construction staff, their plant, equipment, and materials. During mobilisation the site staff will establish safe systems of work, to ensure construction can proceed without endangering the environment, the public or themselves.

Training in health and safety will be provided for all staff during the mobilisation period, and all staff will be required to hold SAFEPASS or equivalent certification.

### 3.3 Civil and Plant Construction Works

Concrete pouring and filling will be fully controlled to ensure that cement bound materials do not present any pollution risk. All concrete pouring and filling will be supervised and monitored.

Trucks, mixers, and concrete pumps that have contained concrete will be washed out in a designated impermeable area to prevent pollution. Where possible, washout water will be stored and re-used.

A Construction Traffic Management Plan (CTMP) will be prepared in advance of the construction phase of development in order to ensure safe movements and interactions between vehicles and pedestrians, both on and adjacent to the site. The CTMP will cover all expected work activities, delivery and storage areas, and shall be expanded and / or amended to cover new or altered activities as they arise. The main components of the CTMP will be:

- Description and scope;
- Staging of the works;
- Traffic control during construction;
- Trucks movements to the site;
- Road signs for full and partial road closure;
- Parking for workers and subcontractors;
- Pedestrian safety;
- Site traffic management supervisor; and



- Abnormal load (i.e., for substation transformer) and associated permit applications applied for and secured from/by South Dublin County Council in advance of abnormal load delivery to site.

The CTMP will also provide for the requirement that entrances and roads are kept clean and clear of obstructions to prevent the spillage or deposit of clay, rubble, or other debris on the entrance and other roads throughout the contract period.

### 3.4 Construction Hours

The site development works will be carried out between the hours of 07:00 to 19:00 Monday to Friday and 09:00 to 13:00 on Saturdays (if required). There will be no construction works carried out on Sundays or public holidays, except in exceptional circumstances or in the event of an emergency.

In the unlikely event that works are required to be carried out outside of these regular hours, permission will be sought from South Dublin County Council prior to the works being carried out.

### 3.5 Employment

The total number of construction staff on-site will vary during the construction phase of the works but are expected to peak at approximately 20 persons per day.

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

### 3.6 Summary of the Proposed Development

#### 3.6.1 Substation

The proposed Baldonnell substation site measures approximately 87.75m long, 22.25m wide and will be bounded by a 2.6m high palisade fence.

The compound will house a 126m<sup>2</sup> EirGrid 110kV substation control building which will measure 14m long x 9m wide x 6.7m high and will be finished externally with scud render & float in sand, white cement plaster, nap finish. The roof of the building will consist of standard Selected Blue/Black slate finish.

Associated outdoor electrical equipment will include:

- 1 no. 110kV transformer.
- 110kV Switchgear.
- an associated internal 15kV underground cable.
- an internal access track.
- a diesel generator.
- Lightning masts\* measuring 18m in height.
- Approximately 15 Light Poles\*\* measuring 3.5m in height.
- 2 no. security cameras and poles will be installed.

The site has been designed to meet EirGrid's specifications.

Access to the substation compound will be provided via the adjacent gas fired power plant site, with 2 no. 4.9m wide access gates proposed along the eastern boundary of the proposed substation site.

\*Lightning Mast Design will be subject to a lightning survey and confirmed during the detailed design stage of the proposed development.

\*\* Lamp Poles will be the subject of a light survey and the exact number to be provided will be confirmed during the detailed design stage of the proposed development.

### **3.6.2 Grid Connection**

The proposed grid connection will consist of underground cabling (UGC).

The underground cable route exits the proposed Baldonnell Substation from the northside fence and heads in a westerly direction. The route follows the private road (Falcon Avenue) west for approximately 250m until it reaches the entrance to Barnakyle 110kV Substation. The cable then turns south to enter the Barnakyle substation through existing ducts. This section of the route is almost entirely within the road except for the crossover into the substation.

A site layout of the proposed Baldonnell Substation and associated grid connection is provided under Figure 3-1 of the EIAR.

The UGC works will consist of the installation of 6 No. ducts in an excavated trench to accommodate 3 No. power cables, 2 No. fibre communications cable to allow communications between the Baldonnell and ESB Barnakyle 110kV Substation and one earth continuity conductor (ECC).

### **3.6.3 Temporary Construction Compound**

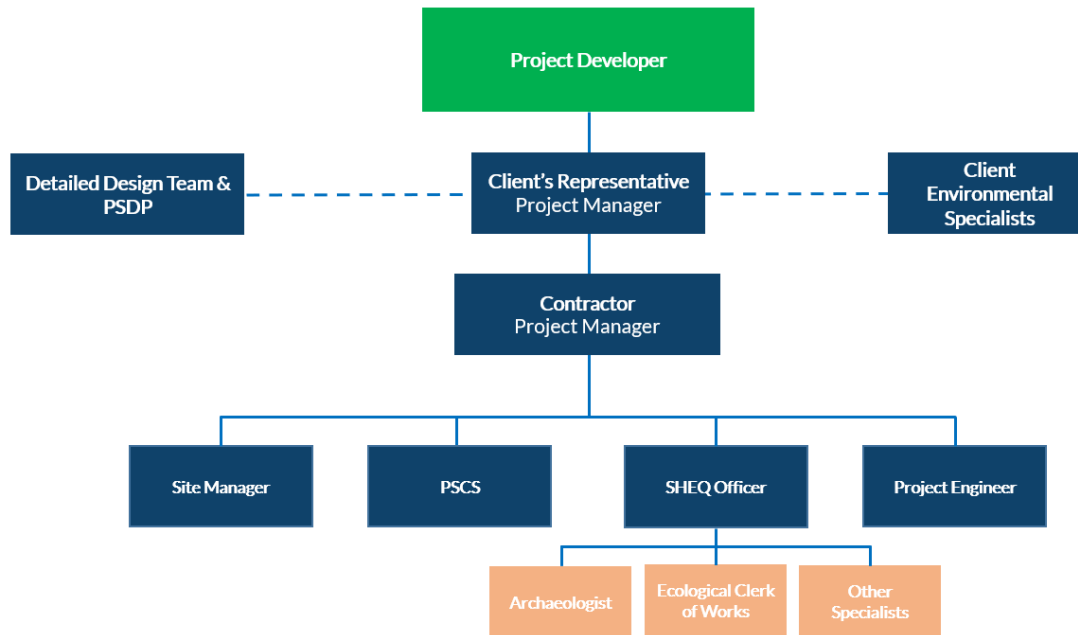
A temporary construction compound will be provided approximately 185m southeast of the proposed development site, the location of which is indicated in Figure 3-2 of the EIAR.

The compound will comprise of areas for temporary site offices (portacabins), staff welfare facilities, car parking, material and equipment storage and material laydown areas. Potable water, foul water and electrical connections will be provided to accommodate the above. The site will be reinstated upon completion of works.

## **3.7 Roles and Responsibilities**

An indicative organisational chart is provided below which identifies the typical roles and associated responsibilities for the construction of the proposed development. This will be subject to specific contractual agreements upon appointment of a Main Contractor and any additional/further appointments required in compliance with a grant of permission.

The Project Manager will have overall responsibility for environmental management and compliance during the construction works. He/she will be supported in this role by an SHEQ Officer, or Environmental Officer as appropriate, who will liaise directly with the relevant regulatory bodies and stakeholders throughout the construction phase. Additional specialist input will be included from an ecological clerk of works, archaeologist or other disciplines as required.



*Figure 3.1: Example Project Development Organisational Chart*

### 3.8 Consents, Licences, Notifications and Permissions

The key consents, licences, notifications and permissions which may be required for the proposed development are summarised as:

- Planning permission and associated planning compliance;
- A Commencement Notice for Development will be lodged with the Building Control Authority (BCA) via the online Building Control Management System (BCMS) not less than 14 days and not more than 28 days before development works commence on site;
- As it is a private road, it is not expected that a road opening licence will be required;
- 30-day prior notification to the Irish Aviation Authority (IAA) and Department of Defence ahead of crane erection works if required.

The above list is exhaustive but identifies the key consents, licenses, notifications and permissions required for the proposed development. This list will be further populated as required through planning compliance and stakeholder engagement to ensure that any further consents are identified as early as possible and do not impact on the construction programme. Additional method statement and monitoring programme submissions may be required by the Local Authority as part of the grant of planning.

## 4.0 CONTRACTOR FACILITIES, SAFETY AND SECURITY

### 4.1 Construction Compound and Facilities

At the commencement of the construction phase, a temporary construction compound will be constructed to provide office space, welfare facilities, car parking and hardstands for storing materials. The location of the temporary compound is shown on Figure 3-3 of Chapter 3 of the EIAR. At the end of the construction phase, the compound will be removed. After removal of the compound, the area will be tidied and landscaped.

Site accommodation will consist of temporary porta-cabins constructed on a granular platform. The topsoil will be stripped where development of the temporary compounds are proposed. The

compounds shall be constructed to heights of up to approximately 0.5m above existing ground level.

The construction compound will be secured by means of a chain-link fence on timber posts which will be approximately 3m in height. There will be one access gate which will be secured and controlled by the Contractor. A combination of bottled water, tankered water supply and rainwater harvesting will be used to supply water for the welfare facilities in the compound during the construction works. Rainwater harvesting will be utilised to supplement the water supply for non-potable uses. Wastewater generated at the welfare facilities in the construction compound will be managed by means of a temporary sealed storage tank, with all wastewater being tankered off-site by a permitted waste collector to a wastewater treatment plant. The proposed temporary wastewater storage tanks will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying.

All plant, machinery and equipment will be stored on site within the UGC works area or within the temporary construction compounds to be located in an area to the south east of the permitted gas peaking plant and substation area.

Fuels, oils, lubricants and other hazardous liquids required for maintenance of equipment during the construction phase will be stored on a dedicated impermeable storage platform in the compound. This area will be away from drains and open water and will be easily accessible for machinery to refuel and to accommodate fuel deliveries to site. Fuel containers will be stored within additional secondary containment e.g., bund for static tanks or drip trays for smaller mobile containers. A fuel bowser, used for refuelling equipment on-site where off-site refuelling is not possible, will be stored in the compound area on a dedicated storage platform. Whenever possible, this bowser will be refilled off-site and brought to site for on-site refuelling. For certain vehicles which are less mobile, refuelling may need to occur elsewhere on site. A spill kit will be stored with the bowser and the person operating the bowser will be trained in their use. When not in use this will be stored in the designated area of the construction compounds.

A temporary self-contained wheel wash will be installed on the site access road to minimise the transfer of dirt and dust from the site onto the public road and to minimise the potential for transfer of alien invasive species onto the site. A system which utilises recirculated wash water will be used to minimise raw water consumption for washing activities. The wheel wash will be emptied on a regular basis in accordance with supplier recommendations and the nature of soiling on vehicles, with the collected material being removed off-site as waste material.

A road sweeper will be available if any section of the surrounding roads become soiled by vehicles associated with the proposed development.

## 4.2 Safety and Security

The proposed Baldonnell Substation will be constructed, in accordance with all relevant Health and Safety Legislation. Aspects of the development that will present health and safety issues include:

- Health and safety aspects of construction activities;
- General construction site safety (e.g. slip/trip, moving vehicles etc);
- On site traffic safety during construction;
- Traffic safety associated with construction traffic or during the deliveries to the site;
- Lifting of heavy loads overhead using cranes;
- Working at heights; and

- Working with electricity during commissioning.

Signs will be erected at suitable locations across the site as required. Further details regarding signage is provided in Section 4.3 of this CEMP.

All Contractors shall be requested to provide a best practice working environment for all employees involved in the design, construction and operation of the proposed Baldonnell Substation. This will include a responsibility to consider all relevant statutory laws and guidelines. All construction Contractors / workers will be required to hold the appropriate training certification for their role (e.g. SafePass, CSCS).

In the case of an emergency, the following procedures shall be followed:

- Emergency Services will be contacted immediately by dialling 112;
- Exact details of the emergency/ incident will be given by the caller to the emergency line operator to allow them to assess the situation and respond in an adequate manner;
- The emergency will then be reported to the Site Team Supervisors and the Safety Officer;
- Where required, appointed site first aiders will attend the emergency immediately; and
- The Safety Officer will ensure that the emergency services are en route.

All activities carried out by the appointed Contractor on the proposed development will be in accordance with the requirements of the *Safety, Health and Welfare at Work Act 2005* as amended and Regulations made under this Act.

The scale and scope of the proposed Baldonnell Substation will require the appointment of a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) in accordance with the provisions of the *Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2103)*, as amended. These persons will be appointed by the Applicant and notified to the Health and Safety Authority (HSA) prior to commencement of detailed design works (in the case of the PSDP) and prior to commencement of construction (in the case of the PSCS). As mentioned, the PSDP will prepare a Preliminary H&S Plan which will identify any particular risks, residual risks and particular sequences of work that are envisaged during the design of the works.

Prior to commencement of construction, this Preliminary H&S Plan will be provided to the Contractor and the PSCS will further develop the document to prepare a Construction Stage H&S Plan addressing all aspects of the construction process and providing relevant contact details and emergency response procedures for the proposed development. This H&S Plan will be developed at the procurement stage and developed further at construction stage to the satisfaction of the Applicant. The H&S Plan will identify the potential safety hazards associated with the site and the works and assess the associated risks. Mitigation and control measures will be implemented to minimise the identified risks.

Evidence of completion of construction safety training, typically in the form of a Safepass Card, will be required for all construction personnel prior to commencing on site. A record of Safepass Cards and personnel approved for entrance to site will be completed as part of a site induction process. The Contractor's H&S Plan will detail the site induction and access requirements. Where relevant, equipment operators or specialist works will require personnel to hold a valid Construction Skills Scheme Card. All equipment and machinery used on site will be appropriately certified for its intended purposes. The Applicant will ensure that only competent contractors are appointed to carry out the construction works on the site.

Public safety will be addressed by restricting site access during construction works and the erection of security fencing as appropriate at construction works areas. Each of the proposed sites within the park has a pre-constructed access with a bellmouth width of approx. 20m to cater for all vehicle types. The entrance to the proposed development site will be controlled by the Contractor. All traffic to Profile Park originates from the R134 New Nangor Road to the North and construction vehicle access to the site will be via this route. Site entrance gates will be securely locked outside of construction hours to prevent unauthorised entry and will be monitored during construction hours to regulate access to the site for authorised personnel.

### 4.3 Signage

Warning signs will be erected at the construction works areas clearly stating that construction works are underway. A notice board will be erected at the site entrance and at the construction compound gates with information on the contact details for site management, PPE requirements for the site and any other information deemed necessary in accordance with the H&S Plan.

Signage will be required within Profile Park to provide advanced warning to approaching vehicles of the construction site entrance location and the potential presence of slow-moving vehicles. Prior to exit from the site, signage will be erected directing construction traffic to that they are leaving the site and directing them to use the approved construction traffic correct route.

Road signage on the public road will be in accordance with the current *Traffic Signs Manual*<sup>2</sup> (Chapter 8) and associated best practice guidelines. Signage in respect of traffic management will be outlined within the CTMP and will be in accordance with the Local Authority recommendations and relevant planning conditions. Within the site, maximum speed signage will be erected along the access roads for construction vehicles and health and safety signage will be erected at borrow pits and where deep excavations, or other areas of increased risk, are occurring. Signage will also be erected as a reminder to concrete delivery drivers that concrete truck wash-out is not permitted on-site and identifying the area(s) where concrete chute wash-out is permitted.



Figure 4.1 Indicative Safety Signage (Source: safetysigns.ie)

<sup>2</sup> Department of Transport, Tourism and Sport, *Traffic Signs Manual – Chapter 8: Temporary Traffic Measures and Signs for Roadworks* (August 2019)

## 4.4 Emergency Response Plan

The Contractor will be responsible for developing a detailed Emergency Response Plan (ERP) for the proposed works, to cover health and safety emergencies as well as environmental emergencies, as part of the H&S Plan. This ERP shall be activated in the event of an emergency such as an accident, fire, spillage, collapse etc. and will provide details on who is required to be notified, first aid facilities and closest hospitals. The ERP will also include details of all personnel inducted and authorised to work on the site as well as next of kin contact details and relevant medical information.

In the event of an emergency, the SHEQ Officer and Project Manager will be notified immediately and will determine the scale of the emergency and the requirement for the assistance of emergency services. Works will cease in the area of the incident and contact will be maintained with the emergency services to direct them to the scene of the incident as required.

As part of the ERP, an evacuation drill will be carried out on a regular basis to make all personnel aware of the procedure to be followed in the event of an emergency where a full site evacuation is required. Emergency muster point(s) will be identified at suitable locations in the construction compounds and the ERP will outline the persons responsible for checking names at the safety muster points. Records will be maintained of such drills.

The ERP must include contact names and telephone numbers for the relevant local authorities (all sections/departments) including ambulance, fire brigade, An Garda Síochána and the HSA. Reporting of environmental emergencies to the local authority will be required as well as other relevant stakeholders such as IFI, NPWS or the EPA.

## 4.5 Fuels, Oils and Chemicals Management

Construction vehicles will be refuelled off-site, wherever possible. This will primarily be the case for road vehicles such as vans and trucks. However, for construction machinery that will be based on-site continuously, a limited amount of fuel will have to be stored on site. On-site refuelling of machinery will mainly be carried out using a mobile double skinned fuel bowser typical of that shown in Figure 4-2. Refuelling will be carried out at least 50m from any watercourse. The fuel bowser, typically a double axel custom-built refuelling trailer, will be refilled off-site, where possible, or at either of the two construction compounds. For certain vehicles which are less mobile, refuelling may need to occur elsewhere on site. A spill kit will be stored with the bowser and the person operating the bowser will be trained in their use. When not in use this will be stored in the designated area of the construction compounds. The fuel bowser will be parked on a level impermeable area in either of the construction compounds when not in use.





*Figure 4.2 Typical mobile fuel bowser (Source: Clarke Machinery Group)*

Oils, lubricants and other hazardous liquids required for maintenance of equipment during the construction phase will be stored on the dedicated impermeable storage platform in the construction compounds as described in Section 4.1. Any additional fuel containers, other than the fuel bowser, used for smaller equipment (such as generators, lights etc.) will be stored within additional secondary containment e.g., bund for static tanks or drip trays for smaller mobile containers. Taps/nozzles for fuels and storage containers for oils will be fitted with locks to ensure their use is controlled. Only designated trained and competent operatives will be authorised to refuel plant on site.

New clean ancillary machinery equipment such as hoses, pipes and fittings required on-site will be contained within a bunded area, however any used or damaged parts will not be stored on site and will be removed immediately. Any repair works required on machinery involving fuel and oil control will be carried out off-site where practical, or in the construction compounds over an impermeable surface. Unless unavoidable, repair works carried out in the field where machinery is operational will use spill trays and absorbent materials to prevent release of contaminants to the ground. Maintenance and repair works will be carried out at least 50m from any watercourse.

At least daily checks prior to start-up of plant and machinery will minimise the risk of breakdown and associated contamination risks for on-site repairs. Records of daily pre-start checks will be maintained and kept in the site office. A clean site policy and diligent housekeeping will also reduce the potential of hydrocarbon release on-site.

In summary, mitigation measure with regard to the on-site storage and handling of potentially pollutant materials will include the following:

- Minimal refuelling or maintenance of construction vehicles or plant will take place on site. Off-site refuelling will occur at a controlled fuelling station;
- All on-site refuelling will be carried out by a trained competent operative. Only designated trained operatives will be authorised to refuel plant on site;



- Mobile bowzers, tanks and drums will be stored in secure, bunded, impermeable storage area, away from drains and open water;
- Mobile measures such as drip trays and fuel absorbent mats kept with all plant and bowzers and will be used as required during all refuelling operations;
- A spill kit will also be stored with the bowser and the person operating the bowser will be trained in their use;
- Additional drip trays and spill kits will be kept available on site, to ensure that any spills from vehicles are contained and removed off site.
- Fuels and chemical containers will be stored within a secondary containment system, i.e., bunded areas for static tanks or a drip tray for mobile stores as appropriate to guard against potential accidental spills or leakages. The bund area will have a volume of at least 110 % of the volume of such materials stored;
- Ancillary equipment such as hoses, pipes will be contained within the bund;
- Taps, nozzles or valves will be fitted with a lock system;
- Fuel and oil stores including tanks and drums will be regularly inspected for leaks and signs of damage;
- All equipment and machinery will have regular checking for leakages and quality of performance, and will carry spill kits;
- An emergency plan for the construction phase to deal with emergency accidents or spills;
- An emergency spill kit with oil boom and absorbers will be kept on site in the event of an accidental spill. All site operatives will be trained in its use.
- Any servicing of vehicles will be confined to designated and suitably protected areas such as construction compounds.

#### 4.6 Spill Control and Response

Emergency spill kits with oil boom and absorbent materials will be kept on-site in the event of an accidental spill. Spill kits will be kept in both construction compounds, the 4x4 vehicle transporting the fuel bowser and smaller spill control kits will be kept in all construction machinery. All construction personnel will be notified of where the spill kits are located as part of the site induction and will be trained on the site procedures for dealing with spills. In the event of a leak or a spill in the field, the spill kits will be used to contain and absorb the pollutant and prevent any further potential contamination. The absorbed pollutants and contaminated materials will be placed into leak proof containers and transferred to a suitable waste container for hazardous materials in the construction compounds. Where a leak has occurred from machinery, the equipment will not be permitted to be used further until the issue has been resolved.

The SHEQ Officer (or equivalent appointed person) will be notified of any spills on-site and will determine the requirement to notify the authorities as set out in Section 4.7.

A detailed spill response and control procedure will be developed and finalised in the Contractor's CEMP at construction stage, outlining the steps that will be followed in the event of an oil / fuel spill occurring, including:

- Identification and blocking of the source of the spill;
- Alerting personnel in the vicinity of the spill and any possible dangers;
- Elimination of any potential ignition sources in the vicinity of the spill;
- Spill containment approach and spill control materials;
- Covering or bunding off of any vulnerable areas where appropriate (i.e. drains, streams, sensitive habitats);
- Clean up using the spill control materials;

- Containment and disposal of used spill control materials;
- Communication with the ECoW – providing relevant information on the location, type and extent of the spill so that they can take appropriate action;
- ECoW actions including inspection of the site, making certain necessary measures are in place to manage the spill and prevent further spillage;
- ECoW notification to the appropriate regulatory body if necessary.

## 4.7 Incidents

All safety or environmental incidents associated with the proposed development will be reported and investigated in line with the ERP. Typically, the following procedures will be followed in the event of an incident:

- Works will stop immediately where safe to do so;
- The SHEQ Officer will be contacted;
- The size of the incident will be assessed and determined if it can be controlled by site staff or if emergency services are required to attend;
- The appropriate enforcing authority will be contacted;
- The SHEQ Officer will investigate after the incident;
- The findings will be sent to the appropriate authority; and
- An action plan will be prepared to set out any modifications to working practices required to prevent a recurrence.

## 4.8 Complaints

This section sets out a procedure to manage and resolve any complaints received from members of the public during the construction phase of the proposed development. The following measures will be adopted and refined, as necessary, taking account of any relevant planning conditions.

The following measures will be implemented to deal with complaints and the Contractor's CEMP will contain more specific details with regard to phone numbers to contact:

- Clearly display a notice board at the site entrance so that the public know whom to contact if they have a complaint or comment;
- Personnel on site, including sub-contractors are required to perform their duties in accordance with this CEMP, and in such a way as to minimise the risk of complaints from third parties;
- All complaints received regarding the construction works will be recorded and categorised (e.g. noise, property damage, traffic, dust etc.) within a central Site Complaints Log. This complaints log will include the following key details:
  - Name, address and contact details of the complainant (with the complainant's permission);
  - Brief outline of the complaint;
  - Date of Complaint;
  - Name of person receiving complaint details; and
  - Agreed timeline for response to complaint.
- All complaints will be communicated to the Project Manager and the Applicant immediately;
- All complaints will be followed up and resolved in so far as is practicable; and
- The complainant, Applicant and other stakeholders will be kept informed of the progress in resolving the complaint.

## 5.0 ENVIRONMENTAL MANAGEMENT

As part of the development of this CEMP, a series of Environmental Management Plans (EMPs) have been prepared to ensure appropriate environmental management of specific aspects of the proposed works. The EMPs have been prepared in accordance with the design and mitigation measures set out in the EIAR. The particular requirements outlined within the following plans are a summary of key implementation constraints, site specific obligations and best practice requirements with which the Contractor shall comply. The construction methodology for the proposed development is set out in Chapter 3 (Description of the Development) of the EIAR.

Construction of the proposed development will be carried out in line with best practice guidance in all areas of potential environmental impact and these specific guidance documents are identified within the following sections. Across the full duration of the proposed development, the Contractor will utilise the general guidelines set out in the CIRIA C741 publication Environmental Good Practice on Site (4th Edition) 2.

Following grant of planning for the proposed development, the appointed Contractor will further develop this planning stage CEMP into a final CEMP which will incorporate any additional measures identified during the planning assessment process, specified in planning conditions and associated post-planning statutory body consultation for the management of the environment during the construction works. The final CEMP will include an updated and refined construction phase programme of works and will set out specific timings and requirements for surveys and monitoring prior to and throughout the construction works. The final CEMP will be a dynamic document and will be continuously reviewed and updated throughout the construction works to ensure it takes account of all environmental auditing and site inspections.

### 5.1 Noise & Vibration

It is expected that noise levels associated with the development during the construction phase will be low. Requirements for construction vehicles will be minimal as clearance of topsoil and subsoils is restricted to access tracks and bases for the inverter stations. Plant and machinery operating on the site will be the main source of noise during the works. However, site activities will be sensitively managed to ensure that all potential noise and vibration impacts on nearby dwellings will be minimised to acceptable levels. All works will be carried out being mindful of potential noise impacts from construction activities.

During construction works, the Contractor shall adhere to the noise abatement measures outlined within this CEMP, and shall comply with the recommendations of BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise*, which offers detailed guidance on the control of noise and vibration from construction activities. It is proposed that various practices be adopted during construction as required, including the following:

- Limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- Establishing channels of communication between the contractor/developer, Local Authority and residents;
- Appointing a site representative responsible for matters relating to noise and vibration;
- Monitoring typical levels of noise and vibration during critical periods and at sensitive locations; and
- Keeping the surface of the site access roads even to mitigate the potential for vibration from lorries.

Furthermore, a variety of practicable noise control measures will be employed. These include:

- Ensuring that HGV drivers turn off engines when parked for prolonged periods on the site, use minimal impact reversing alerts and avoid use of horns, where possible;
- Using radio contact across the site to avoid workers shouting or whistling;
- Maintaining plant and equipment in good condition to ensure noise emissions are as per plant specifications;
- Use of mains power supply instead of generators insofar as is possible;
- Selection of plant with low inherent potential for generation of noise and/ or vibration;
- Placing of noise or vibration producing plant as far away from sensitive properties as permitted by site constraints, and;
- Regular maintenance and servicing of plant items.

The contract documents shall specify that the Contractor undertaking the construction of the works will be obliged to take specific noise abatement measures when deemed necessary to comply with the recommendations of BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise*. The following list of measures will be considered, where necessary, to ensure compliance with the relevant construction noise criteria:

- No plant used on site will be permitted to cause an on-going public nuisance due to noise;
- The best means practicable, including proper maintenance of plant, will be employed to minimise the noise produced by on site operations;
- All vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract;
- Compressors will be attenuated models, fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers;
- Machinery that is used intermittently will be shut down or throttled back to a minimum during periods when not in use;
- Any plant, such as generators or pumps, which is required to operate before 07:00hrs or after 18:00hrs will be surrounded by an acoustic enclosure or portable screen;
- During the construction programme, supervision of the works will include ensuring compliance with the limits detailed below using methods outlined in BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise*;
- The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 07:00hrs and 19:00hrs Monday to Friday and between 08:00hrs and 18:00hrs on Saturdays. However, to ensure that optimal use is made of good weather period or at critical periods within the programme (i.e. concrete pours), or to accommodate deliveries, it could be necessary on occasion to work outside of these hours. Any such out of hours working will be agreed in advance with the South Dublin County Council (the local planning authority).

*Table 5-1: Example Threshold Potential Significant Effect at Dwellings*

| Assessment category and threshold value period ( $\tau$ )   | Threshold value, in $L_{Aeq,T}$ dB  |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
|   | Category A<br><small>Note A</small> | Category B<br><small>Note B</small> | Category C<br><small>Note C</small> |
| Night-time (23:00 to 07:00hrs)                              | 45                                  | 50                                  | 55                                  |
| Evenings and weekends <small>Note D</small>                 | 55                                  | 60                                  | 65                                  |
| Daytime (07:00 – 19:00hrs) and Saturdays (07:00 – 13:00hrs) | 65                                  | 70                                  | 75                                  |

|        |  |
|--------|--|
| Note A | Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.        |
| Note B | Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values. |
| Note C | Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values. |
| Note D | 19:00 – 23:00 weekdays, 13:00 – 23:00 Saturdays and 07:00 – 23:00 Sundays.   |

Construction of the proposed development is not expected to give rise to vibration that is either significantly intrusive or capable of giving rise to structural or cosmetic damage to buildings. In the unlikely event of vibration levels giving rise to human discomfort, in order to minimise such impacts, the following measures shall be implemented during the construction period:

- A clear communication programme will be established to inform closest building occupants in advance of any potential intrusive works which may give rise to vibration levels likely to exceed perceptible levels. The nature and duration of the works will be clearly set out in all communication circulars;
- Alternative less intensive working methods and/or plant items shall be employed, where feasible;
- Appropriate vibration isolation shall be applied to plant, where feasible;
- Cut off trenches to isolate the vibration transmission path shall be installed where required;
- Monitoring will be undertaken at identified sensitive buildings, where proposed works have the potential to be at or exceed the vibration limit values.

## 5.2 Air Quality

### 5.2.1 Dust and Exhaust Emissions – Suppression and Management

There will be some temporary dust and exhaust emissions from construction activities during the construction phase. Dust or pollutants generated from the construction phase will typically arise from:

- Movement of construction vehicles;
- Laying hardstanding areas and access tracks (i.e. roads);
- Movement and placement of stockpiles (excavated soils / fill materials); and
- Wind generated dust from stockpiles and exposed unconsolidated soils.

The pro-active control of fugitive dust will ensure the prevention of significant emissions. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the dust mitigation measures. The key aspects of controlling dust are listed below. Full details of the dust mitigation measures can be found in section 5.2.2 below.

In summary the measures which will be implemented will include:

- Hard surface roads will be swept to remove mud and aggregate materials from their surface while any un-surfaced roads will be restricted to essential site traffic;
- Any road that has the potential to give rise to fugitive dust must be regularly watered, as appropriate, during dry and/or windy conditions;
- Vehicles exiting the site shall make use of a wheel wash facility where appropriate, prior to entering onto public roads;
- Vehicles using site roads will have their speed restricted, and this speed restriction must be enforced rigidly. On any un-surfaced site road, this will be 20 kilometres per hour (kph);
- Public roads outside the site will be regularly inspected for cleanliness and cleaned as necessary;

- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind. Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods;
- During movement of materials both on and off-site, trucks will be stringently covered with tarpaulin at all times. Before entrance onto public roads, trucks will be adequately inspected to ensure no potential for dust emissions.

At all times, these procedures will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, movements of materials likely to raise dust will be curtailed and satisfactory procedures implemented to rectify the problem before the resumption of construction operations.

### *5.2.2 Environmental Commitments relating to Air Quality and Dust Management*

The objective of dust control at the site is to ensure that no significant nuisance occurs at nearby sensitive receptors. In order to develop a workable and transparent dust control strategy, the following management plan has been formulated by drawing on best practice guidance from Ireland, the UK (BRE, 2003; IAQM, 2014; The Scottish Office, 1996; UK ODPM, 2002) and the USA (USEPA, 1997).

#### ***Site Management***

The aim is to ensure good site management by avoiding dust becoming airborne at source. This will be done through good design and effective control strategies.

At the construction planning stage, the siting of activities and storage piles will take note of the location of sensitive receptors and prevailing wind directions in order to minimise the potential for significant dust nuisance. Locating construction compounds and storage piles downwind of sensitive receptors will minimise the potential for dust nuisance to occur at sensitive receptors.

Good site management will include the ability to respond to adverse weather conditions by either restricting operations on-site or quickly implementing effective control measures before the potential for nuisance occurs. When rainfall is greater than 0.2mm/day, dust generation is generally suppressed (IAQM, 2014; UK ODPM, 2002). The potential for significant dust generation is also reliant on threshold wind speeds of greater than 10 m/s (19.4 knots) (at 7m above ground) to release loose material from storage piles and other exposed materials (USEPA, 1986). Particular care should be taken during periods of high winds (gales) as these are periods where the potential for significant dust emissions are highest. The prevailing meteorological conditions in the vicinity of the site are favourable in general for the suppression of dust for a significant period of the year. Nevertheless, there will be infrequent periods where care will be needed to ensure that dust nuisance does not occur. The following measures shall be taken in order to avoid dust nuisance occurring under unfavourable meteorological conditions:

- The Main Contractor or equivalent must monitor contractors' / site personnel performance to ensure that the proposed mitigation measures are implemented and that dust impacts and nuisance are minimised;
- During working hours, dust control methods will be monitored as appropriate, depending on the prevailing meteorological conditions;
- The name and contact details of a person to contact regarding air quality and dust issues shall be displayed on the site boundary, this notice board should also include head/regional office contact details;
- It is recommended that community engagement be undertaken before works commence on site explaining the nature and duration of the works to local residents and businesses;



- A complaints register will be kept on site detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out;
- It is the responsibility of the contractor at all times to demonstrate full compliance with the dust control conditions herein;
- At all times, the procedures put in place will be strictly monitored and assessed.

The dust minimisation measures shall be reviewed at regular intervals during the works to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practice and procedures. In the event of dust nuisance occurring outside the site boundary, site activities will be reviewed and satisfactory procedures implemented to rectify the problem. Specific dust control measures to be employed are described below.

### ***Preparing and Maintaining the Site***

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
- Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Avoid site runoff of water or mud;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have the potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below;
- Cover, seed or fence stockpiles to prevent wind whipping.

### ***Operating Vehicles / Machinery and Sustainable Travel***

- Ensure all vehicles switch off engines when stationary, i.e., no idling vehicles;
- Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable;
- Impose and signpost a maximum-speed-limit of 20 kph haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate);
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials;
- Implement a Travel Plan that supports and encourages sustainable travel among personnel (public transport, cycling, walking, and car-sharing).

### ***Operations***

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g., suitable local exhaust ventilation systems;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

### ***Waste Management***

- Avoid bonfires and burning of waste materials.

### ***Measures Specific to Earthworks***

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable;
- Only remove small sections of material coverings during work and not all at once;
- During dry and windy periods, and when there is a likelihood of dust nuisance, a bowser will operate to ensure moisture content is high enough to increase the stability of the soil and suppress dust.

### ***Measures Specific to Construction***

- Avoid scabbling (roughening of concrete surfaces) if possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overflowing during delivery;
- For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

### ***Measures Specific to Trackout***

Without appropriate control measures, site roads (particularly unpaved) can be a significant source of fugitive dust from construction sites. The most effective means of suppressing dust emissions from unpaved roads is to apply speed restrictions. Studies show that these measures can have a control efficiency ranging from 25 to 80% (UK ODPM, 2002).

- A speed restriction of 20 km/hr will be applied as an effective control measure for dust for on-site vehicles;
- Use water-assisted dust sweeper(s) on access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. If sweeping using a road sweeper is not possible due to the nature of the surrounding area then a suitable smaller scale street cleaning vacuum will be used;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Record all inspections of haul routes and any subsequent action(s) in a site logbook;
- Install hard surface haul routes, which are regularly dampened down with fixed or mobile sprinkler systems, or mobile water bowzers and regularly cleaned;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits;
- Access gates to be located at least 10 m from receptors where possible.





*Figure 5.1 Typical road sweeper (Source: CMP Road Planning)*

### **Summary of Dust Mitigation Measures**

The pro-active control of fugitive dust will ensure that the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released, will contribute towards the satisfactory performance of the contractor. The key features with respect to control of dust will be:

- The specification of a site policy on dust and the identification of the site management responsibilities for dust issues;
- The development of a documented system for managing site practices with regard to dust control;
- The development of a means by which the performance of the dust minimisation measures can be regularly monitored and assessed; and
- The specification of effective measures to deal with any complaints received.

### **5.2.3 Climate**

There is the potential for a number of embodied greenhouse gases (GHGs) and GHG emissions during the construction phase of the development. Construction vehicles, generators etc., may give rise to CO<sub>2</sub> and N<sub>2</sub>O emissions as well as the large quantities of material such as stone, concrete and steel that will be required for the proposed development. The Institute of Air Quality Management (IAQM) document Guidance on the Assessment of Dust from Demolition and Construction (2014) states that site traffic and plant is unlikely to make a significant impact on climate.

To minimise climate impacts associated with delivery of construction materials to the site, the Contractor will source quarry materials as close to the site location as possible and use local builder's providers where possible. Excavation on site will be utilised as much as possible to minimise import of quarried stone material. In some cases, it will not be possible to locally source building materials due to the technical nature of parts and equipment required.

## **5.3 Land, Soils and Geology**

Mitigation measures for the construction of the proposed Baldonnell Substation development to avoid or reduce the potential effect of the proposed development are presented below. A

number of mitigation measures considered for soil and geology are similar to those relating to hydrology and hydrogeology, further detail can be found in Section 5.4 (Protection of Water Quality) of this CEMP.

The mitigation measures have been based on CIRIA (Construction Industry Research and Information Association, UK) technical guidance on water pollution control and on current accepted best practice (CIRIA, 2001). Good site practice will be applied to ensure no fuels, oils, wastes or any other substances are stored in a manner on site in which they may spill and enter the ground. Dedicated, bunded storage areas will be used for all fuels or hazardous substances. Specific measures related to the management of fuels and chemicals are outlined in section 4.5 Fuels, Oils and Chemicals management above.

### **5.3.1 Excavations**

The materials to be encountered are likely to be relatively stable during the excavation for the infrastructure foundations. A physical barrier can be implemented between the excavations and the potentially unstable material at unstable conditions, in the form of a granular berm or sheet piles. The long-term stability of the area around the proposed development will be achieved by filling the area back up to existing ground level following installation of the foundation and sealing the subsoil environment with artificial surfaces with managed drainage network.

Excavation works will be monitored by a suitably qualified and experienced geotechnical engineer or engineering geologist. The earthworks will not be scheduled to be carried out during severe weather conditions.

### **5.3.2 Management of Excavated Materials**

Disturbance and excavation of soil, subsoil and bedrock is an unavoidable effect of construction works, such as those required for the proposed Baldonnell Substation, however, every effort will be made to ensure that the amount of earth materials excavated is kept to a minimum in order to limit the effect on the geological aspects of the site. The management of geological materials and spoil is an important component of controlling dust and sediment and erosion control. Excavated soils and bedrock will only be moved short distances from the point of extraction and will be used locally for landscaping. Landscaping areas will be sealed and levelled using the back of an excavator bucket to prevent erosion. The upper vegetative layer will be stored with the vegetation part of the sod facing the right way up to encourage growth of plants and vegetation at the surface of the landscaped soils.

These measures will prevent the erosion of soil in the short and long term. Soils, overburden, and rock will be reused on site to reinstate any excavations where appropriate.

To ensure slope stability, excavations will be battered back (sloped) to between 1:1 and 1:2 depending on depth and type of material. All excavation works during the construction stage will be monitored by an experienced engineer.

Mitigation measures will be put in place during the construction of the scheme to reduce the likelihood of an excavation collapsing. Mitigation measures include construction of a granular berm or temporary sheet pile wall to support the clays during construction. There is a very low risk of landslide (high factor of safety) which is further reduced by implementation of the mitigation measures.

## 5.4 Protection of Water Quality (inc. Surface Water Management)

In order to mitigate potential impacts during the construction phase, best practice construction methods will be implemented in order to prevent water (surface water and groundwater) pollution. As mentioned, during construction all personnel will be responsible for the environmental control of their work and will perform their duties in accordance with the requirements and procedures of the CEMP.

During the construction phase, all works associated with the construction of the development and associate grid connection to the substation will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015). Any groundwater encountered will be managed and treated in accordance with CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016).

The implementation of a Surface Water Management Plan will be overseen by a suitably qualified ecologist/engineer and will be regularly audited throughout the construction phase. The assigned ecologist/engineer will be required to stop works on site if he/she is of the opinion that a mitigation measure or corrective action is not being appropriately or effectively implemented.

### 5.4.1 *Monitoring*

It is recommended that local surface water features in the immediate vicinity of the site boundary are monitored pre-construction and during construction to take account of any variations in the quality of the local surface water and groundwater environment as a result of activities related to the proposed development. Monitoring of Baldonnell Stream (for water quality and turbidity) subject to Profile Park consent, will be undertaken pre-construction and during the construction period. A programme of inspection and maintenance will be designed, and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, with records kept.

During the construction phase, field testing and laboratory analysis of a range of parameters will be undertaken at adjacent watercourses, specifically following heavy rainfall events (i.e., weekly, monthly and event based as appropriate).

### 5.4.2 *Hardstanding*

To minimise any impact on the underlying subsurface strata from material spillages, all oils and solvents used during construction will be stored within specially constructed dedicated bunded areas. Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles will take place in a designated area of the site, away from surface water gullies or drains. Spill kits and hydrocarbon absorbent packs will be stored in this area and operators will be fully trained in the use of this equipment. For certain vehicles which are less mobile, refuelling may need to occur elsewhere on site. A spill kit will be stored with the bowser and the person operating the bowser will be trained in their use. When not in use this will be stored in the designated area of the construction compounds.

All construction waste will be sorted and stored in on-site skips, prior to removal by a licensed waste management contractor.

### 5.4.3 Concrete

Concrete is required for the construction of the development infrastructure foundations. After concrete is poured at a construction site, the chutes of ready mixed concrete trucks must be washed out to remove the remaining concrete before it hardens. Wash out of the main concrete bottle will not be permitted on site; wash out is restricted only to chute wash out of trucks, mixers and concrete pumps. Wash down and washout of the concrete transporting vehicles will take place at an appropriate facility offsite.



*Figure 5.2 Example of temporary concrete washout area*

The best management practice objectives for concrete chute washout are to collect and retain all the concrete washout water and solids in leak proof containers or impermeable lined wash out pits, so that the wash material does not reach the soil surface and then migrate to surface waters or into the groundwater. The collected concrete washout water and solids will be emptied on a regular basis. Washout will be undertaken at the construction compounds.

### 5.4.4 Erosion Sediment and Control

Runoff will be maintained at Greenfield (pre-development) runoff rates. The layout of the development has been designed to collect surface water runoff from hardstanding areas within the development and discharge to associated surface water attenuation adjacent to the proposed infrastructure. It will then be managed by gravity flow at Greenfield runoff rates.

Suspended solid (silt) removal features will be implemented in accordance with CIRIA C697 SuDS Manual, and CIRIA C648 Control of water pollution from linear construction projects.

### 5.4.5 Interceptor Drains

Interceptor drains/diversion ditches will be installed ahead of the main earthworks activities to minimise the effects of collected water on the stripped/exposed soils once earthworks commence. This drainage will integrate into the existing site drainage. These drainage ditches will be installed on the upgradient boundary of the areas affected by the foundation edge earthworks operations and installed ahead of the main foundation construction operations commencing. They will generally follow the natural flow of the ground. The interceptor drains will intercept any storm water surface run-off and collect it to the existing low points in the ground, allowing the clean water flows to be transferred independently through the works without mixing with the construction drainage.

### **5.4.6 Swales**

Infrastructure drainage/swales are required to control run-off from the running surface to lower water levels in the subgrade, to control surface water and to carry this flow to outlet points. Swales will be installed in advance of the main construction phase and will provide additional storage of storm water where located along gradient.

Swales will be re-vegetated by hydro-seeding with indigenous seed mix as soon as is practicable following excavation. This will reduce the flow velocity, treat potential pollutants, increase filtration and silt retention.

All stockpiled material will be side cast, battered back and profiled to reduce rainfall erosion potential. The stockpiling of materials will be carefully supervised as per the mitigation measures listed in Section 4.2 Air Quality above.

A number of ephemeral drainage features (drains) are also present on site. These appear dry except during dry weather. Culverting of these will only take place during dry weather periods. Culverts will be designed to be of a size adequate to carry expected peak flows. Culverts will be installed to conform, wherever possible, to the natural slope and alignment of the drainage line. Where required, culverts will be buried at an appropriate depth below the channel bed and the original bed material placed at the bottom of the culvert. The sizing of any new internal drainage crossings will maintain existing depth of flow and channel characteristics.

## **5.5 Biodiversity Management**

Mitigation measures which will be employed to ensure no significant effects on biodiversity occur as a result of the proposed development, are described hereunder.

Mitigation is prescribed with regard to the 'Mitigation Hierarchy' set out in the EPA '*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*' (EPA 2022), which requires mitigation by avoidance as a first approach. Where this is not achievable, measures to prevent impacts from giving rise to adverse effects will be adopted. Where impacts cannot be avoided (e.g. generation of noise), mitigation by reduction of impact is prescribed to limit the exposure of the ecological receptor to an acceptable level (often achieved by interrupting the pathway between the source and receptor). When significant effects cannot be prevented, mitigation to counteract the effects is required (i.e. offsetting measures).

### **5.5.1 Appointment of an Environmental / Ecological Clerk of Works (ECoW)**

A suitably qualified Ecological Clerk of Works (ECoW) will be appointed by the appointed Contractor. The ECoW will oversee all construction works and monitor any possible sources for impacts for the duration of the construction programme. The ECoW will inspect the construction phase of the proposed development is undertaken in strict agreement with the methods prescribed within the CEMP and will have the power to stop the works in case any activities/works are not compliant.

### **5.5.2 Management of Habitats and Flora**

#### **5.5.2.1 Pre-construction Botanical Survey**

A pre-construction botanical survey will be carried out within the optimal survey period (April to September) prior to construction works commencing. The survey will be required to determine the presence of any protected or invasive flora, which may occur in the intermediate

time or which may have been missed during the initial botanical survey undertaken outside the optimal survey period. In the event that a Flora Protection Order (FPO) or Red Listed plant species is identified within the footprint of the works area, appropriate mitigation such as translocation will be implemented. In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded, a site-specific Invasive Species Management Plan will be prepared.

#### **5.5.2.2 Clearance of Vegetation**

The proposed construction work areas will be demarcated prior to construction works commencing. No clearance of vegetation will be undertaken outside of the demarcated areas within the proposed development site. Construction vehicles will be restricted to designated access tracks to avoid impacting adjacent habitats and to ensure that soil compaction is restricted to these tracks. All temporary disturbed ground will be fully reinstated following the completion of the works.

#### **5.5.2.3 Management of Invasive Species and Pathogens**

In order to comply with Regulations 49 and 50 of the European Communities (Birds and Natural Habitat) Regulations (2011), the appointed Contractor will ensure biosecurity measures are implemented throughout the construction phase to prevent the introduction and translocation of invasive species.

The following mitigation measures are prescribed to control the translocation or spread of invasive species and / or pathogens:

- No invasive plant species were recorded within the proposed development, however in the event that proposed construction works are delayed more than 18 months, a pre-construction invasive species survey will be undertaken. In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded, a site-specific Invasive Species Management Plan (ISMP) will be prepared.
- Prior to arrival all machinery and equipment used during the construction works will be thoroughly cleaned and then dried using a high-pressured steam cleaning, with water >65 °C, in addition to the removal of all vegetation material. Disinfectant, such as a Virkon® Aquatic solution, will be used. The appointed Contractor will establish and clearly delineate a bunded cleaning/washing area.
- No removed material or run-off will be allowed to enter any water bodies (e.g. Baldonnell Stream).
- Evidence that all machinery and equipment has been cleaned will be required to be on file for review by the statutory authorities and the appointed ECoW.

#### **5.5.2.4 Protection of the Baldonnell Stream**

Measures to prevent accidental spillage/leakage of chemicals and pollutants and uncontrolled runoff of contaminated surface water and sediment are outlined in Chapter 8 - Land, Soils and Geology and in Chapter 9 - Hydrology and Hydrogeology. The implementation of these control measures will ensure that there is no potential for impacts to ecological receptors in the receiving environment. A summary of the sediment and pollution control measures which will be implemented are provided hereunder.

Silt fences will be installed along the eastern boundary of the proposed development to ensure there is no runoff into Baldonnell Stream. Silt fences will be constructed using a permeable filter



fabric (Hy-Tex Terrastop Premium silt fence or similar), which will be installed as per the manufacturer's guidelines and will be maintained until vegetation on the disturbed ground has been re-established. Once installed, the silt fence will be inspected regularly (daily) during construction and more frequently (hourly) during heavy rainfall (i.e. if there is a yellow weather warning in place or if the rainfall is greater than 5mm in a 1-hour period).

All concrete will be mixed off site and poured in place at site. All concrete browsers will be washed down at a dedicated concrete washout onsite located within the construction compound or offsite. Concrete washings will not be disposed of onsite to any surface or ground water features. All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms will be used in cleaning works. All raw, uncured waste concrete must be cured at a designated location within the construction compound or offsite.

Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated hard surface, bunded areas within this construction compound or offsite only. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. Refuelling will only occur within the construction compound or offsite.

#### **5.5.2.5 Protection of Nesting Birds**

The area which provides suitable bird nesting habitat (i.e. wet grassland) will not be removed, cleared or trimmed between the 1<sup>st</sup> March and 31<sup>st</sup> August, to avoid impacts on nesting birds protected under the Wildlife Acts and/or Birds Directive. Where the construction programme does not allow this time restriction to be observed, then these areas will be inspected by a qualified ecologist for the presence of breeding birds prior to commencement of the construction works. Where any nests are found, the appointed ECoW will provide recommendations as to whether a licence is required for vegetation removal and will detail the process for obtaining such derogation from the NPWS.

## **5.6 Waste Management**

A Construction and Demolition Waste Management Plan (CDWMP) has been prepared for the management of waste during the construction of the proposed Baldonnell Substation. Waste management measures will be implemented in accordance with those outlined in the CDWMP (Appendix 3-5 of the EIAR).

All waste generated from the development construction phase will be managed in accordance with the provisions of the *Waste Management Act 1996* as amended and associated Regulations.

All excavated topsoil and subsoils will be reused within the site boundary, insofar as possible, primarily for reinstatement. Any excess material which cannot be reused will be transferred offsite to a licensed waste facility. However, it is not anticipated that any excess material will not be suitable for reuse within the site.

Typical waste streams (including material-related streams such as metals, paper and cardboard, plastics, wood, rubber, textiles, bio-waste and product-related streams such as packaging, electronic waste, batteries, accumulators and construction waste) will be managed, collected, segregated and stored in separate areas at the construction compounds and removed off site by a licensed waste management contractor at regular intervals for the duration of the

construction works. Skips and bins of appropriate sizes will be stored in both construction compounds and used to maximise source segregation of waste materials. This will include food and packaging waste from welfare facilities. Appropriate control of food waste in the compound will minimise the potential for pests and rodents to visit the area.

Any contaminated materials used for spills and equipment maintenance works will be separately stored in a suitable container for collection by an authorised hazardous waste contractor.

The Contractor will encourage all personnel to minimise waste generation and to maximise the segregation of waste at source. Material wastage will be avoided by delivering only the required quantities of material to site and utilising off-site manufacturing of steel reinforcement cages and concrete materials as much as possible. The Contractor will establish 'just-in-time' deliveries to avoid excess material storage at the site which can lead to waste generation. Delivery drivers will be encouraged to remove any excess packaging from materials delivered to site and remove unused timber pallets where possible.

Reusable formwork for concrete pouring will be used in preference of non-reusable options. Other opportunities for material reuse across the site will be sought by the Contractor.

It is not anticipated that there will be contaminated soils or materials encountered during the excavation works. No contaminated soils were identified during historical site investigation works.

The SHEQ Officer, or other appropriate person, will be appointed as the Waste Manager for the duration of the proposed development in accordance with the general guidance set out in the *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects* (Department of the Environment, Heritage and Local Government (DoEHLG, 2006). The Waste Manager will ensure that all waste contractors have the correct permits for any waste streams they are removing from site, and that they are taking it to the appropriately licensed/permitted waste facilities. They will also ensure that all parts of the CDWMP will be implemented onsite.

At the pre-construction stage, the Waste Manager will be in a position to require fellow designers to take full advantage of all reasonable construction and demolition (C&D) waste prevention, reuse and recycling opportunities. During construction, the practicalities of waste prevention, salvaging re-useable materials, and the need to synchronise the recycling of waste materials through the timing of their use in the new construction works will be emphasised by the Waste Manager.

The Waste Manager will be responsible for auditing waste handling and storage throughout the proposed development and for advising construction personnel on best practices. All waste collections and records of waste movement off-site will be collated by the Waste Manager and retained in the site office.

## 5.7 Traffic and Transport

Mitigation measures to reduce or eliminate construction phase impacts will be implemented a part of a CTMP, which will be produced by the appointed Contractor and PSCS in conjunction with the PSDP for the proposed development. The CTMP will address the following issues:

- Site Access & Egress;
- Traffic Management Signage;
- Routing of Construction Traffic / Road Closures;



- Timings of Material Deliveries to Site;
- Traffic Management Speed Limits;
- Road Cleaning;
- Road Condition;
- Road Closures;
- Enforcement of Traffic Management Plan
- Details of Working Hours and Days;
- Details of Emergency plan;
- Communication;
- Construction Methodologies; and
- Particular Construction Impacts

The following are measures that will be implemented to mitigate the traffic and transportation effects of the proposed development:

- Photographic survey of haul roads again, immediately prior to commencement of construction; and
- Continuous monitoring of haul roads throughout the construction phase.

### **5.7.1 Site Entrance**

#### **5.7.1.1 Junction Visibility**

Adequate visibility at the site access will mitigate the potential increased likelihood for collisions between construction generated traffic and existing road network traffic. Profile Park has been well developed to cater and entice future growth and expansion. Each of the proposed sites within the park has a pre-constructed access with a bellmouth width of c. 20m to cater for all vehicle types. Internally Profile Park has an internal roundabout to separate traffic flows to the various sections with an approximate inscribed circle diameter (ICD) of 45m. All traffic to Profile Park originates from the R134 New Nangor Road to the North.

An existing splitter island and central reserve is present on the arm accessing Profile Park providing lanes for East and West turning traffic. Splitter Islands are present on all arms of the internal roundabout also to separate traffic flows. Autotrack assessment have been carried out as part of the overall design for the scheme which demonstrates that large vehicles will be able to access the site comfortably. Preferred construction phase access would be via the existing access to the adjacent power plant site off the internal roundabout within Profile Park. The delivery/haulage vehicles will be routed depending on the destination/origin of the materials being delivered.

The use of local roads will be minimised as much as possible, particularly to avoid / minimise the encountering of narrow road widths, poor visibility and unsuitable bearing capacities. As the site is located on the outskirts of Dublin City and is well serviced by major infrastructural routes, it is envisaged that the majority of delivery vehicles shall be able to access site through the M50 motorway, N4 and N7 National roads and the Regional road network immediately surrounding the site (R134, R120 and R136) which will keep them away from built-up urban centres.

### **5.7.2 Traffic Impact**

To mitigate the impact of the construction traffic, the proposed Baldonnell Substation development will utilise all available resources within the existing site to reduce the requirement for importation of materials to site.

### **5.7.3 Trench Reinstatement**

To mitigate the impact of the cable laid within the public road, the reinstatement works will be backfilled and reinstated as soon as practicable. The reinstatement works will be undertaken in accordance with the “Purple Book” best guidance and practices as required by South Dublin County Council. The proposed reinstatement and construction details and phasing will be agreed with associated Local Authorities Municipal District Office in advance of the works. The Contractor will be responsible for arranging for the required road opening licenses.

The grid connection will be laid beneath the ground surface and/or private road. The area where excavations are planned will be the subject of a confirmatory survey, prior to the commencement of works. A verification condition survey will be carried out for all parts of the route within the public road. A trench will be opened using an excavator to accommodate the formation. The excavated material will be cast to the side to be reused as backfilling material where appropriate. This material will not be stored in the vicinity of any watercourse and will be smoothed with the back of an excavator bucket to minimise runoff. It will be cast on the upgradient side of the trench, so if any runoff did occur it will run into the downgradient trench. Excess material will be used on the site of the proposed development for local landscaping.

### **5.7.4 Project Delays**

To avoid delays to the project programme, all required road opening licenses and agreements with the Local Authorities and An Garda Síochána to facilitate movement of abnormal loads shall be sought by the appointed Contractor in a timely manner.

## **5.8 Cultural Heritage**

As there are no potential impacts on the cultural heritage resource, no mitigation is deemed necessary.

### **5.8.1 Archaeology**

The following measures will be implemented in relation to Archaeology:

- All topsoil/overburden removal within the compound area will be monitored by a suitably qualified archaeologist.
- If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH).

No archaeological mitigation is required for the section of development that is located in the Profile Park development and the existing road way to the north.

The mitigation measure identified above would also function as a monitoring system during construction to allow the further assessment of the scale of the predicted impacts and the effectiveness of the recommended mitigation measures.

### **5.8.2 Architectural Heritage**

There are no architectural heritage sites (RPS) located within the vicinity of the proposed Baldonnell Substation area.

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## 6.0 CONCLUSION

This CEMP presents a summary of the overall proposed Baldonnell Substation works, the management of the site during the construction works and the mitigation measures required to ensure the proposed works do not have a significant effect on the environment. This document is prepared in accordance with Best Practice documents as set out above and in the EIAR.

Prior to commencement of construction, the appointed Contractor will be required to update this document with site specific details including the location of spill kits on the site, the layout of the construction compounds, machinery pre-start checklists and provide details on the persons responsible for environmental management for the duration of the works. The updated CEMP will also be required to include any specific construction phase environmental management procedures identified in the grant of planning for the development or subsequent to the planning submission.

The final CEMP document will be agreed with the Developer prior to commencement of works and submitted to the planning authority. It will be a live document and updated accordingly throughout the proposed development.

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