



**BALDONNELL 110KV SUBSTATION**

**ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR)**

**VOLUME I – NON TECHNICAL SUMMARY**

**June 2023**

# BALDONNELL 110KV SUBSTATION

## ENVIRONMENTAL IMPACT ASSESSMENT REPORT – VOLUME I

Document Control Sheet	
Document Reference	11069-D02
Report Status	Planning Issue
Report Date	June 2023
Current Revision	A
Client:	Greener Ideas Ltd.
Client Address:	C/O Bord Gáis Energy Ltd 1 Warrington Place Dublin 2 D02 HH27
Project Number	11069

Galway Office Fairgreen House, Fairgreen Road, Galway, H91 AXK8, Ireland.  Tel: +353 (0)91 565 211	Dublin Office Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N, Ireland.  Tel: +353 (0)1 803 0406	Castlebar Office Market Square, Castlebar, Mayo, F23 Y427, Ireland.  Tel: +353 (0)94 902 1401	Unit 4 Crescent Court, St Nessian's Road, Dooradoyle, Limerick V94 V298 Ireland  Tel: +353 (0)61 574 413	Sligo Office The Gateway Building Floor 3, Northwest Business Park Collooney, Sligo Ireland
---	--	--	---	--

Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
A	Planning Issue	Various	07/06/2023	EV/CN	07/06/2023	LB	07/06/2023

### TOBIN Consulting Engineers

#### Disclaimer

This Document is Copyright of TOBIN Consulting Engineers Limited. This document and its contents have been prepared for the sole use of our Client. No liability is accepted by TOBIN Consulting Engineers Limited for the use of this report, or its contents for any other use than for which it was prepared.



**ACEI** ASSOCIATION OF  
CONSULTING ENGINEERS  
OF IRELAND



## Table of Contents

1.0	INTRODUCTION .....	1
1.1	BACKGROUND .....	1
1.2	THE APPLICANT .....	1
1.3	SITE LOCATION.....	2
1.4	LAND OWNERSHIP .....	2
2.0	EIA REPORT METHODOLOGY .....	3
2.1	INTRODUCTION .....	3
2.2	REQUIREMENT FOR ENVIRONMENTAL IMPACT ASSESSMENT .....	3
2.2.1	<i>EIA Directive Context .....</i>	<i>3</i>
2.2.2	<i>EIA and Planning Legislation in Ireland .....</i>	<i>3</i>
2.2.3	<i>EIA Screening.....</i>	<i>4</i>
2.3	EIA GUIDANCE.....	4
2.4	EIA REPORT CONSULTATIONS .....	5
2.4.1	<i>Consultation with An Bord Pleanála .....</i>	<i>5</i>
2.4.2	<i>Consultation with Statutory and Non-Statutory Bodies.....</i>	<i>5</i>
2.5	ASSUMPTIONS AND LIMITATIONS OF ASSESSMENT .....	6
2.6	PROJECT TEAM AND CONTRIBUTORS TO THE EIAR.....	6
3.0	DESCRIPTION OF THE PROPOSED DEVELOPMENT .....	7
3.1	THE PROPOSED DEVELOPMENT .....	7
3.2	OPERATIONAL OVERVIEW.....	8
3.3	CONSTRUCTION PHASE ACTIVITIES.....	8
3.3.1	<i>Construction Phase Description and Duration .....</i>	<i>8</i>
3.3.2	<i>Construction Environmental Management Plan .....</i>	<i>9</i>
3.3.3	<i>Construction and Demolition Waste Management Plan .....</i>	<i>9</i>
3.4	OPERATION AND MAINTENANCE .....	10
3.4.1	<i>Hours of Operation.....</i>	<i>10</i>
3.4.2	<i>Operational Staff .....</i>	<i>10</i>
3.5	HEALTH AND SAFETY .....	10
3.6	DECOMMISSIONING .....	11
4.0	NEED FOR THE DEVELOPMENT.....	12
5.0	CONSIDERATION OF ALTERNATIVES .....	13
5.1	INTRODUCTION .....	13
5.2	DO NOTHING SCENARIO.....	13
5.3	ALTERNATIVE CONNECTION POINTS AND TECHNOLOGIES .....	13
5.4	ALTERNATIVE LOCATIONS.....	14
5.5	ALTERNATIVE SITE LAYOUT AND CABLE ROUTE SELECTION .....	14

5.6 ALTERNATIVE CONSTRUCTION AND DECOMMISSIONING PRACTICES.....	14
6.0 POLICY, PLANNING AND DEVELOPMENT CONTEXT .....	15
7.0 POPULATION AND HUMAN HEALTH .....	17
7.1 INTRODUCTION .....	17
7.2 POPULATION .....	17
7.2.1 <i>Land Use</i> .....	17
7.2.2 <i>Potential Effects</i> .....	18
7.3 POTENTIAL EFFECTS ON HUMAN HEALTH.....	20
7.4 MITIGATION AND MONITORING MEASURES.....	22
7.5 RESIDUAL EFFECTS .....	22
8.0 LAND, SOILS AND GEOLOGY .....	23
8.1 INTRODUCTION .....	23
8.2 POTENTIAL EFFECTS .....	23
8.3 MITIGATION AND MONITORING MEASURES .....	24
8.4 RESIDUAL EFFECTS .....	24
9.0 HYDROLOGY AND HYDROGEOLOGY.....	25
9.1 INTRODUCTION .....	25
9.2 POTENTIAL EFFECTS .....	25
9.3 MITIGATION AND MONITORING MEASURES .....	26
9.4 RESIDUAL EFFECTS .....	27
10.0 AIR QUALITY AND CLIMATE.....	28
10.1 INTRODUCTION .....	28
10.2 POTENTIAL EFFECTS .....	28
10.3 MITIGATION AND MONITORING MEASURES .....	29
10.4 RESIDUAL EFFECTS .....	29
11.0 NOISE AND VIBRATION.....	30
11.1 INTRODUCTION .....	30
11.2 POTENTIAL EFFECTS .....	30
11.3 MITIGATION AND MONITORING MEASURES .....	30
11.4 RESIDUAL EFFECTS .....	30
12.0 BIODIVERSITY .....	32
12.1 INTRODUCTION .....	32
12.2 POTENTIAL EFFECTS .....	32
12.3 MITIGATION AND MONITORING MEASURES .....	34
12.4 PROTECTED UNDER THE WILDLIFE ACTS AND/OR BIRDS DIRECTIVE. .....	34

12.5 RESIDUAL EFFECTS .....	34
13.0 CULTURAL HERITAGE .....	36
13.1 INTRODUCTION .....	36
13.2 POTENTIAL EFFECTS .....	36
13.3 MITIGATION AND MONITORING EFFECTS .....	36
13.4 RESIDUAL EFFECTS .....	36
14.0 LANDSCAPE AND VISUAL IMPACT ASSESSMENT .....	37
14.1 INTRODUCTION .....	37
14.2 MITIGATION .....	37
14.3 POTENTIAL EFFECTS .....	37
15.0 TRAFFIC AND TRANSPORTATION.....	39
15.1 INTRODUCTION .....	39
15.2 POTENTIAL EFFECTS .....	39
15.3 MITIGATION AND MONITORING MEASURES .....	39
15.4 RESIDUAL EFFECTS .....	39
16.0 MATERIAL ASSETS .....	40
16.1 INTRODUCTION .....	40
16.2 POTENTIAL EFFECTS .....	40
16.3 MITIGATION AND MONITORING MEASURES .....	41
16.3.1 Construction.....	41
16.3.2 Operation .....	41
16.4 RESIDUAL EFFECTS .....	42
17.0 MAJOR ACCIDENTS .....	43
17.1 INTRODUCTION .....	43
17.2 POTENTIAL EFFECTS .....	43
17.3 MITIGATION AND MONITORING MEASURES .....	43
17.4 RESIDUAL EFFECTS .....	43
18.0 INTERACTIONS OF THE FOREGOING .....	44

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

Greener Ideas Limited is proposing to construct a 110kV electrical substation (hereafter referred to as the “Baldonnell Substation”) and associated grid connection at a site located in Profile Park, Dublin 22. The proposed substation is being developed to provide a connection for the adjacent gas fired power plant to the existing electricity transmission system. The gas fired power plant will have a capacity to generate up to 102MW of electricity.

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.

The associated gas fired peaking power plant will operate when electricity demand is higher than average, typically during morning and evening peak usage times. The plant will regularise energy provision in the electricity grid especially in the context of an increase in use of renewable energy technologies, such as wind and solar power. The plant technology allows the delivery of an efficient, safe and secure electricity system by helping to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power. This will accommodate and support Ireland’s transition to a low-carbon economy and mean that Ireland can continue to invest in renewable sources of power in order to meet future national and EU targets. The design of the plant and its ultimate usage is flexible such that it may provide power directly to the national electricity grid. Natural gas, supplied from the Gas Networks Ireland national grid, will be the primary fuel source for the plant.

An Environmental Impact Assessment (EIA) Report has been prepared in order to inform the planning application for the proposed Baldonnell Substation, which has been submitted to An Bord Pleanála for statutory approval. It should be noted that the application seeks a 10 year planning permission.

### 1.2 THE APPLICANT

Greener Ideas Limited (GIL) is a joint venture company comprising of Bord Gáis Energy and Mountside Properties Limited. GIL is developing a portfolio of energy projects and has secured planning permission for gas fired power plants and battery energy storage plants in Kilkenny, Tipperary and Roscommon. It is envisaged that these plants will make a significant contribution towards Irelands renewable energy targets for 2030 and beyond as they will help regularise the electricity grid and facilitate additional renewables integration onto the grid in line with EirGrid’s DS3 Programme (refer Section 4.4.1).

Bord Gáis Energy (BGE) has been in operation in Ireland since 1976. Today, BGE provides gas, electricity and home care services to over 730,000 residential and business customers throughout the country. It operates the 445 MW Combined Cycle Gas Turbine (CCGT) power plant in Whitegate, County Cork. BGE’s sustainable principles include:

- To provide products and services to customers that support a low carbon future;
- To support the creation of a sustainable low carbon energy system for Ireland; and
- To strive for a net zero internal carbon footprint from our own corporate operations.

In 2014, BGE became part of the global Centrica plc Group. Centrica is a leading international energy services and solutions provider. Centrica supplies energy and services to over 26.2 million customer accounts mainly in Ireland, the UK and North America through its brands including BGE, British Gas and others.

Mountside Properties Limited are shareholders in the operation of the 400 MW CCGT power plant in Tynagh, County Galway.

### 1.3 SITE LOCATION

The site of the proposed Baldonnell Substation is located in Profile Park, Dublin 22. This is a 100 acre (40.5 Ha) fully enclosed, private business park which has been developed to the highest of standards. It is easily accessible from the major arterial roads in the city including the M50, M7 and M4, and is served by excellent public transport links.

Within Profile Park the proposed substation will be located on greenfield lands immediately adjacent to the associated gas fired power plant, and near to the existing Digital Realty data centre. The proposed Kilcarbery Substation will be located along the western boundary of the proposed Baldonnell Substation site.

The site of the proposed substation has been identified by South Dublin County Council in its County Development Plan 2022-2028 as Zoning Objective 'EE' which is 'To provide for enterprise and employment related uses'. The siting of a power plant and proposed substation together in Profile Park would bring additional opportunity to further accommodate data centre development. In this context it should be noted that Profile Park is connected directly onto the Dublin metropolitan fibre network called the T50. The T50 is a multi-duct fibre carrying system which extends over 44 km and provides connectivity to 24 business parks and from these into the global networks through.

Existing tenants within Profile Park and the surrounding business and enterprise parks include Google, Microsoft, Digital Realty Trust, Telecity and others. Immediately adjacent to Profile Park is the Castlebaggot 110 / 220 kV substation which provides electrical transmission connectivity to the national electricity transmission grid system.

The nearest residential properties are located some 400m to the south of the site and some 450 m to the north east. Grange Castle Golf Course is located approximately 120m east of the site and Baldonnell Aerodrome 450m south of the site.

The proximity to the transmission grid, natural gas connections and local data centre development are key drivers for the siting of the gas fired power plant and associated proposed substation.

### 1.4 LAND OWNERSHIP

Greener Ideas Ltd. is the owner of the site on which the proposed substation will be located, with different ownership titles for the grid connection route.

Documentary evidence in relation to the owner's consent for the submission of the planning application for the proposed development to An Bord Pleanála has been provided with the planning application documentation.

## 2.0 EIA REPORT METHODOLOGY

### 2.1 INTRODUCTION

This chapter presents an outline of the methodology to be employed for the proposed Baldonnell Substation. It outlines the methodology for the identification and evaluation of potential likely significant environmental effects and also presents the methodology for the identification and evaluation of potential cumulative and interrelated impacts.

As set out in Chapter 1 (Introduction), the proposed substation is being developed to provide a connection for the adjacent gas fired power plant to the existing electricity transmission system. The gas fired power plant will have a capacity to generate up to 102MW of electricity.

### 2.2 REQUIREMENT FOR ENVIRONMENTAL IMPACT ASSESSMENT

#### 2.2.1 *EIA Directive Context*

The primary objective of the of the Environmental Impact Assessment Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU' (EIA Directive), is to ensure a high level of protection of the environment and human health, through the establishment of minimum requirements for environmental impact assessment (EIA), prior to development consent being awarded, of public and private developments that are likely to have significant effects on the environment.

Directive 2014/52/EU provides a definition of environmental impact assessment as being a process consisting of:

- The preparation of an environmental impact assessment report (EIAR);
- The carrying out of consultations required to inform the EIAR;
- The examination by the competent authority of the information presented in the EIAR and any supplementary information provided, where necessary, by the developer and relevant information received through consultations with the public, prescribed bodies and any affected Member States;
- The reasoned conclusion by the competent authority on the significant effects of the project on the environment; and
- The integration of the competent authority's reasoned conclusion into any development consent decision.

The EIA Directive is transposed into Irish legislation via European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 and the Planning and Development Acts and Regulations 2000 to 2021.

#### 2.2.2 *EIA and Planning Legislation in Ireland*

In determining the requirement for EIA, the Directive and its transposing legislation in Ireland differentiates between the projects that always require EIA and those for which an EIA may be required. These projects are listed in Schedule 5 Part 1 and Part 2 of the Planning and Development Regulations 2001, as amended (hereafter referred to as 'the Planning Regulations').

Schedule 5, Part 1 Projects, are projects which are considered as having significant effects on the environment and require an automatic EIA.



Schedule 5, Part 2 Projects, are projects where national authorities have to decide whether an EIA is needed. This is done by the "screening procedure", which determines the effects of projects on the basis of thresholds/criteria or a case-by-case examination. The projects listed in Part 2 are in general those not included in Part 1 which may be considered to have a lesser environmental impact.

### 2.2.3 EIA Screening

An Environmental Impact Assessment (EIA) Report was prepared in order to inform the planning application for the associated gas fired power plant (Reg. Ref.: SD21A/0137). This received planning approval from South Dublin County Council on the 19<sup>th</sup> July 2022. It should be noted that the application sought a 10-year planning permission. The EIA Report was also prepared in support of Industrial Emissions license application to the Environmental Protection Agency.

In the context of the gas fired power plant, the most relevant project type identified in Schedule 5 is Part 1 Paragraph 2(a) which relates to:

*'A thermal power station or other combustion installation with a heat output of 300 megawatts or more.*

The power plant will have a capacity to generate up to 102MW of electricity. This heat output is substantially lower than the 300 MW threshold identified in Paragraph 2(a) and so therefore an automatic EIA was not required. However, on the basis of discussions with South Dublin County Council and on a precautionary basis also having regard to other power plant projects in the Council area, it was agreed to prepare an EIA Report in support of the planning application.

By association, an EIAR has been prepared to inform the planning application for the proposed Baldonnell Substation.

## 2.3 EIA GUIDANCE

The EIA Report methodology draws upon a number of EIA principles, regulations and guidance documents, including:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, May 2022);
- Draft Guidelines on the Information to be contained in Environmental Impact Statements (EPA, September 2015);
- Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, August 2017);
- Draft Advice Notes on Preparing Environmental Impact Statements" (EPA, September 2015);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (DHPLG, 2018);
- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017);
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment, (European Commission, 2013); and
- Receptor specific guidance documents (e.g. Ecological Impact Assessment (EclA) guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM).

## 2.4 EIA REPORT CONSULTATIONS

The EIA Report Scoping and consultation activities were carried out in accordance with all relevant guidance documents as set out in Section 2.3.

Scoping is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. The purpose of scoping for the EIAR is to provide a framework for the approach to be taken by the individual specialists in carrying out their evaluations, identifying environmental aspects for which potential significant environmental impacts may arise. It also provides a framework for the consultation process and sets out the intended structure of the Final EIAR.

### 2.4.1 Consultation with An Bord Pleanála

A pre-application consultation meeting was held with An Bord Pleanála on the 5<sup>th</sup> May 2022 under section 182E of the Planning and Development Act 2000, as amended (Ref: ABP-312984-22). The purpose of the meeting was to initiate the consultation process to determine if the proposed development falls within the scope of section 182A of the Planning and Development Act, 2000 as amended and is considered to be strategic infrastructure development (SID).

The pre-consultation meeting also allowed for the introduction of the proposed development and discussion of the same.

The meeting was attended by the Applicant, Greener Ideas Limited and TOBIN representatives. The meeting discussion was centred around the following key points:

- Client and EIAR / Planning Team;
- Site Context;
- Policy Context;
- Electrical Connection;
- Indicative Layout;
- Key Planning Application Considerations; and
- Next Steps.

A presentation was given providing information on the site and the proposed substation.

Following consultation with An Bord Pleanála under section 182E of the Planning and Development Act 2000, as amended it has been confirmed that the board is of the opinion that the proposed development falls within the scope of section 182A of the Planning and Development Act, 2000 as amended and as such the proposed development is strategic infrastructure development (SID). The relevant consents process for the approval of the proposed development is to submit a planning application directly to An Bord Pleanála under Section 182A(1) of the Act. Copies of this determination is provided in Appendix 1-1 of the Chapter 2 in the EIAR.

### 2.4.2 Consultation with Statutory and Non-Statutory Bodies

EIAR scoping correspondence was submitted to relevant statutory and non-statutory bodies in December 2022 (by email) for review and comment. The list of consultees and a record of consultation is provided in Chapter 2 of the EIAR.

## 2.5 ASSUMPTIONS AND LIMITATIONS OF ASSESSMENT

Specific assumptions relevant to environmental aspects are set out in the corresponding EIAR Chapters. Some general assumptions that have been made during preparation of this EIAR are set out below:

- In undertaking cumulative assessments, consented, but as yet un-built, developments have been assumed to have been built in accordance with and within the duration permitted by the associated grant of permission; and
- Information provided by third parties, including publicly available information and databases, is correct at the time of publication.

Specific limitations relevant to certain environmental aspects are set out in the corresponding EIAR Chapter. Some general limitations associated with the preparation of this EIAR are set out below:

- Baseline conditions and assessments are assumed to be accurate at the time of the physical surveys but may be subject to change, due to the nature of the surrounding environment and surrounding activities; and
- The assessment of cumulative effects from built or consented developments is partially reliant on the availability of information provided by relevant third parties. Local Authority and An Bord Pleanála public planning registers were reviewed as part of the assessment process. None of the individual specialists have highlighted any limitations that are considered significant in terms of the undertaking of these specialist cumulative assessments.

## 2.6 PROJECT TEAM AND CONTRIBUTORS TO THE EIAR

TOBIN Consulting Engineers were engaged by Greener Ideas Limited to coordinate and prepare this EIAR. The relevant inputs of the various contributors and competent experts of the Project Team are provided in Table 2-3 and Table 2-4 of Chapter 2 in the EIAR.

It should be noted that the Project Manager and principal coordinator of this EIA Report was Louise Byrne, Senior Planner in TOBIN Consulting Engineers. Louise has over 8 years' experience in development management for local government, semi state and consultancy. Louise has a Masters in Regional and Urban Planning from University College Dublin and is a chartered member of the Royal Town Planning Institute.

## 3.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

### 3.1 THE PROPOSED DEVELOPMENT

The proposed Baldonnell 110kV 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 20kV 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 project.

\*\* 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 project.

It should be noted that within this planning application to An Bord Pleanála the location of the proposed IPP compound is overlapping with an IPP compound already approved under the adjacent Gas Fired Peaking Power Plant application Reg. Ref. SD21A/0167. However the infrastructure proposed as part of this planning application differs slightly. It is intended to build the IPP compound as set out under this planning application with any changes or amendments to application SD21A/0167 to be captured under a separate future consents process.

The proposed grid connection will consist of underground cabling (UGC). The underground cable route exits the proposed Baldonnell 110kV 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.

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).

## 3.2 OPERATIONAL OVERVIEW

The proposed 110kV electrical substation (hereafter referred to as the “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.

The gas fired peaking power plant will operate when electricity demand is higher than average, typically during morning and evening peak usage times. The need for peaking plants on the Irish electricity grid has grown, as renewable forms of power generation increase their penetration onto the system. The variability of renewable generators increases EirGrid’s challenge to operate an efficient, safe, and secure electricity system. The modular design of the Profile Park peaker plant, and its fast response capability, means it can react quickly to vary its output, mirroring the peaks and troughs of electricity generation, from renewable generators.

The development of the peaker plant with its associated substation and grid connection, are in line with policies set out in the National Development Plan and the Climate Action Plan 2021. The development is also consistent with Ireland’s strategy to achieve its binding 2030 emission targets.

A temporary construction compound will be provided approximately 185m southeast of the proposed development site.

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 fully reinstated upon completion of all works.

## 3.3 CONSTRUCTION PHASE ACTIVITIES

### 3.3.1 *Construction Phase Description and Duration*

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.

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. Standard working hours for construction will be 7.00am to 7.00pm Monday to Friday and 8.00am to 9.00pm on Saturday (if required), with no works on Sundays or Bank Holidays except in exceptional circumstances

or in the event of an emergency. 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.

Please refer to Appendix 3-1 of the EIA report, for a full description of the construction methodology for the proposed development.

### ***3.3.2 Construction Environmental Management Plan***

The primary objective of the Construction Environmental Management Plan (CEMP) is to safeguard the environment, site personnel, and nearby sensitive receptors, i.e., occupiers of residential and commercial properties, from site activity which may cause harm or nuisance. It is therefore intended to provide a framework to ensure transparent and effective monitoring, prevention, management, and compensation measures to address the environmental impacts associated with the proposed substation.

During construction, an EPC Contractor(s) will be appointed with responsibility for constructing the proposed substation. Performance of the EPC Contractor(s) will be monitored on a regular basis. The following activities will be undertaken throughout the duration of the construction period:

- Review contractor documents against the requirements of the CEMP;
- Undertake regular audits;
- Continuously check records;
- Set up a contractor reporting structure; and
- Conduct regular meetings where EHS is an agenda item.

It will be the responsibility of the EPC contractor(s) to implement the construction phase management and monitoring measures outlined in the CEMP. The EPC Contractor(s) will be required to undertake regular monitoring and inspections, keep up to date records as prescribed in the CEMP, and report regularly to Greener Ideas Limited.

During operation, Greener Ideas Limited will have responsibility for the operation of the adjacent gas fired power plant and part of the proposed Baldonnell 110kV substation, with the other half of the substation site owned and operated by ESB and EirGrid.

### ***3.3.3 Construction and Demolition Waste Management Plan***

A Construction and Demolition Waste Management Plan (CDWMP) has been prepared in accordance with the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, published by the EPA in November 2021. These guidelines replace the 2006 guidelines previously published by the former Department of the Environmental, Heritage and Local Government (DOEHLG) and the National Construction and Demolition Waste Council (NCDWC).

The main objective of these guidelines is to provide a practical and informed approach informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project (including consideration of deconstruction). The guidelines provide those involved in a project, including clients, developers, designers, practitioners, contractors, sub-contractors and competent authorities, with a common approach when preparing Resource and Waste Management Plans (RWMPs) for C&D projects.

The requirement to develop, maintain and operate this CDWMP to a detailed Construction & Demolition Waste Management Plan (CDWMP) will form part of the contract documents for the project.

On commencement of the project, the EPC Contractor appointed to undertake the works will be responsible for the development of this CDWMP and the implementation of all necessary protocols and measures to ensure regulatory compliance, including the provision of data to Greener Ideas Limited to enable fulfilment of reporting obligations.

## 3.4 OPERATION AND MAINTENANCE

### 3.4.1 Hours of Operation

The proposed Baldonnell 110kV substation will operate in parallel with the adjacent gas fired power plant. Its actual operating hours will be determined by EirGrid, who are the Transmission System Operator (TSO). They will issue dispatch instructions to the plant from the National Control Centre using an Electronic Dispatch Instruction Logger system (EDIL).

The environmental modelling undertaken as part of this EIA Report has predicted no significant environmental effects based on a worst-case operating scenario (i.e., operating 24 hours a day, 365 days per year unless otherwise stated)

### 3.4.2 Operational Staff

The proposed Baldonnell 110kV substation will be unmanned.

## 3.5 HEALTH AND SAFETY

A Project Supervisor Construction Stage (PSCS) will be appointed by Greener Ideas Limited for the construction phase of the substation. The PSCS will be responsible for managing and coordinating the safety and health issues on site.

It is important to note that the presence of a PSCS does not release other contractors/employers of their obligation to comply with their statutory safety and health obligations.

No substances will be stored on the proposed Baldonnell 110kV substation site and as such the project is not subject to any of the requirements contained in the Chemical Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015.

Batteries will be on site within the EirGrid compound building as part of normal operation. The transformer will be oil filled but there is no requirement for additional oil to be stored on site. The diesel generator will require diesel onsite for power outage situations only. It is not expected to have diesel stored on site. Otherwise, no chemicals will be stored on site.

A water storage tank will be provided on the power station site to ensure the security of the water supply for operational and firefighting needs. The tank shall serve both the ring main and hydrants. The latest calculations as provided to Irish Water, indicate that the water tank shall have a dedicated firefighting water storage capacity of circa 545m<sup>3</sup>, which will provide water at a rate of 75L/minute for 90 minutes.

## 3.6 DECOMMISSIONING

The proposed Baldonnell 110kV substation is expected to be operational in accordance with the adjacent gas fired power plant. The power plant is expected to be operational for at least 25 years. On cessation of activities, the plant will either be redeveloped as a power related facility or the site will be redeveloped in an alternative form.

In the event that the substation is decommissioned, the following programme will be implemented:

- All plant equipment and machinery will be emptied, dismantled, and stored under appropriate conditions until it can be sold. If a buyer cannot be found, the material will be recycled or disposed of through licensed waste contractors and hauliers. If plant and machinery is required to be cleaned on site prior to removal, all necessary measures will be implemented to prevent the release of contaminants;
- All waste will be removed from the facility; and
- The site and all associated buildings will be secured.
- Waste will be recycled wherever possible. All waste movement, recycling, and disposal operations will be controlled by licensed waste contractors.

Details of provisions to decommission and render safe or remove all materials, waste, ground, plant, or equipment contained on or in the site that may result in environmental pollution will be agreed with the Environmental Protection Agency as part of the Industrial Emissions Licensing process.

The proposed Baldonnell 110kV substation is expected to be operational in accordance with the adjacent gas fired power plant. The power plant is expected to be operational for at least 25 years. On cessation of activities, the plant will either be redeveloped as a power related facility or the site will be redeveloped in an alternative form.

In the event that the substation is decommissioned, the following programme will be implemented:

- All plant equipment and machinery will be emptied, dismantled, and stored under appropriate conditions until it can be sold. If a buyer cannot be found, the material will be recycled or disposed of through licensed waste contractors and hauliers. If plant and machinery is required to be cleaned on site prior to removal, all necessary measures will be implemented to prevent the release of contaminants.
- All waste will be removed from the facility; and
- The site and all associated buildings will be secured.
- Waste will be recycled wherever possible. All waste movement, recycling, and disposal operations will be controlled by licensed waste contractors.

Details of provisions to decommission and render safe or remove all materials, waste, ground, plant, or equipment contained on or in the site that may result in environmental pollution will be agreed with the Environmental Protection Agency as part of the Industrial Emissions Licensing process.



## 4.0 NEED FOR THE DEVELOPMENT

This chapter of the EIAR sets out the strategic policy context at a European and national level, for the proposed substation and its associated gas fired power plant, both of which are required to assist in reducing the use of fossil fuels in the generation of electricity in Ireland.

The key driver in the requirement for low-carbon generation technology is set out in binding European targets to reduce greenhouse gas emissions. The current and future demands of electricity generation are detailed and highlight the importance of gas power plants during Ireland's transition to a low-carbon future, as well as their potential to support expanding offshore wind generation in the Dublin region.

It is now widely recognised that Ireland has substantially and continually failed to meet past climate targets and that it must now significantly improve its performance in terms of decarbonisation in order to meet the 2030 targets that are becoming more important. As demonstrated by the strategic policies and binding targets on greenhouse gas emissions set out within European and national plans, investment in lower carbon technologies for electricity generation is a key prerequisite in achieving Ireland's 2030 renewable energy target and subsequent net zero carbon energy system by 2050. The transformation of the electricity system in Ireland will require the system to be more dynamic and responsive as the challenges of introducing non-synchronised generations sources, such as wind and solar, to a synchronised transmission system are overcome.

Electricity demand is increasing rapidly in the greater Dublin region, mainly due to the growth of data centres. As large consumers of electricity, data centres pose particular challenges to the future planning and operation of a sustainable power system. The growing energy demand within Dublin is recognised within the NPF as it states that improving energy sustainability within Dublin and its surrounding Environs will be a key future growth enabler with regard to population and employment.

The development of onshore and offshore renewable energy is dependent on the implementation of enabling infrastructure, such as the proposed substation and associated power plant at Profile Park.

The proposed substation and associated power plant in Profile Park is considered consistent with the overarching strategy to achieve the binding 2030 emission targets, as a lower-carbon generation source it will also be a vital technology to mitigate the deficiency in electricity generation following the planned closure of fossil fuel power plants across the island of Ireland in the next six years. The power plant also represents an important electricity generation source for Ireland's transition to a low carbon economy, which will require local agile distributed generation rather than relying on large, centralised power generation. Gas fired power plant technology allows the delivery of an efficient, safe and secure electricity system by helping to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power.

The proposed substation and its associated power plant at Profile Park will support the expansion of offshore wind generation in the Dublin region and the reinforcement of Ireland's energy distribution network will facilitate planned growth and energy provision across the country.

## 5.0 CONSIDERATION OF ALTERNATIVES

### 5.1 INTRODUCTION

To find the most suitable site for the proposed development, Greener Ideas Limited considered a number of factors, as recommended in the Draft EPA Guidelines (EPA, 2017).

Alternatives to the proposed development, in terms of layout and design, were considered under the following headings:

- Do Nothing' Scenario';
- Alternative Connection Points and Technologies
- Alternative Locations;
- Alternative Site Layouts and Cable Route Selection; and
- Alternative construction and Decommissioning Practices.

### 5.2 DO NOTHING SCENARIO

In the Do-Nothing scenario, Greener Ideas Limited would not develop a substation in Profile Park. In the absence of this substation, there would be:

- No method for electrical power generated at the adjacent powerplant site to be exported to the wider transmission network.
- Less integration of renewable technologies onto the Irish Grid which is one of the key strategic European and national objectives for the transition to a low carbon economy as set out in Chapter 4.0.
- Increased risk that older, less efficient and more polluting power plants would continue to operate and that proposals to decarbonise Ireland's power generation portfolio would be negatively impacted.
- The portfolio of dispatchable gas fired power plants available to manage fluctuating electricity demands and compensate for shortages occurring from wind or solar power would be reduced and this would result in increased grid instability.
- With respect to EirGrid's Data Centre Connection Policy, the absence of a substation for the associated power plant, raises the possibility that data centres will not develop on Profile Park, or they will seek to build their own power generating capability. However, the ability to centralise power generation within Profile Park, brings opportunities to better manage noise and emissions locally and potentially enabling lower built capacity, and less operating hours.
- The site on which the substation is proposed would more than likely remain unused, vacant and unchanged as a greenfield site.
- Given the size of the site, its unlikely to be developed by another developer despite the 'Enterprise and employment' zoning of the site under the South Dublin County Development Plan 2016-2022.

### 5.3 ALTERNATIVE CONNECTION POINTS AND TECHNOLOGIES

Greener Ideas Ltd submitted a grid connection application to EirGrid on 17<sup>th</sup> of November 2021, requesting a 100MW MEC grid connection to the adjacent proposed Kilcarbery Substation as illustrated in Figure 5-1 below. The Kilcarbery substation is proposed to be constructed as part of an adjacent Data Centre development and is currently under consideration by An Bord Pleanála (VA06S.312793).

On 21<sup>st</sup> of December 2021, EirGrid informed Greener Ideas Limited that for the purposes of the 2023-24T3 Capacity Market Auction, it should assume that the associated gas fired power plant's grid connection method will be 'a new 110 kV Air Insulated Switchgear ("AIS") Station tailed to the nearby Barnakyle 110 kV Station via 0.375 km of underground cable ("UGC)". Refer to document OI29074-EGD-XX -XX-XX-DN-62-0001-S2 -PA1 attached in Appendix 5-1

On 14<sup>th</sup> of April 2022, EirGrid issued Greener Ideas Limited with a Connection Agreement, confirming the connection method and naming the new AIS substation 'Baldonnell'. It is Greener Ideas Limited understanding that due to commercial and planning matters associated with the adjacent proposed Kilcarbery Substation, and to ensure security of supply for the 2024/23 winter period, EirGrid have instructed this connection method to be utilised, as opposed to connection via the adjacent proposed Kilcarbery substation.

## 5.4 ALTERNATIVE LOCATIONS

No alternative sites have been considered for the proposed substation, as the location of the proposed development was determined with respect to overall siting and design of the associated gas fired power plant.

## 5.5 ALTERNATIVE SITE LAYOUT AND CABLE ROUTE SELECTION

Greener Ideas Limited considered an alternative site layout and cable route configuration which is presented below in Figure 5-1 and 5-2 of Chapter 5 of the EIAR. The proposed site layout was arrived at following extensive discussions between the Applicant and EirGrid/ESB. The alternative layout was ultimately discounted for the following reasons.

1. Preferred route reduced the number of 90-degree bends, so eliminating the need for the construction of Joint bays and allow the possible installation of the cable in a single pull.
2. Alternative cable route involved crossing 3<sup>rd</sup> party lands.
3. Alternative land would conflict with the possible future construction of the Kilcarbery GIS substation.
4. Alternative route would require the reconfiguration of the already approved GIL 15/110kV transformer, which received planning approval under application reg. SD21A/0167.

## 5.6 ALTERNATIVE CONSTRUCTION AND DECOMMISSIONING PRACTICES

Construction practices for the proposed Baldonnell substation are well understood and there are several thousand such plants in operation across the globe. Standard construction practices will be employed in the construction of this plant. Similarly, decommissioning practices will follow standard practices and will be carried out in accordance with EPA requirements as set out in the IE Licence. No alternative construction or decommissioning practices are considered in this EIAR as best practice or other regulatory requirements will be followed in all instances.

## 6.0 POLICY, PLANNING AND DEVELOPMENT CONTEXT

Relevant policy has been reviewed at an international (UN and EU), national, regional and local level. The proposed substation is consistent with the current energy and planning policy context, which seeks to increase the share of electricity generation from renewable sources and locate wind energy developments in suitable locations, thereby minimising any environmental impacts. The proposal will contribute to national and international efforts to reduce carbon emissions to the atmosphere and thereby help to address concerns regarding climate change.

The proposed Baldonnell Substation, its grid connection, and the associated power plant at Profile Park is considered consistent with the overarching planning framework set out in the above European, national, regional and local policies and plans. The rationale for this conclusion is based on the following:

### European

- Ireland will miss the target set for the period 2013 to 2020 for renewables by about 3% and for cumulative emissions by a little under 5%. Furthermore, EPA's Greenhouse Gas Emissions 2018-2040 projections indicate that Ireland faces significant challenges in meeting EU 2030 reduction targets in the non-ETS sector and national 2050 reduction targets, particularly in electricity generation. Ongoing review and refinement of the national transmission, including the implementation of support / enabling infrastructure such as the proposed substation as part of the associated gas fired power plant, will allow Ireland to continue to invest in renewable sources of power to meet future national and EU targets.

### National

- Due to the significant growth in demand for electricity, the national grid will require new solutions such as the proposed substation and associated gas fired power plant. The long-term renewal of the grid will need to be consistent with wider national, social, environmental, economic and energy policies, i.e., renewable energy targets and sustainability. Operation of the proposed substation will assist in regularising energy provision in the electricity grid. Specifically, the associated gas fired power plant would have the ability to respond quickly to the peaks and troughs of renewable generators, so providing electricity at times of high demand and low wind. This will assist in delivering a secure and sustainable electricity system.

### Regional

- The RSES contextualises the Eastern and Midland Region as the '*economic engine of the State*' providing more than 1 million jobs, and as such, are a major load centre on the Irish electricity transmission system. Developing the electrical grid in the Region will enable the transmission system to safely accommodate more diverse power flows from renewable generation. Grid investment, and flexible power generation in the form of the power plant, will solve immediate infrastructural deficiencies in addition to accommodating expected long-term growth in population and economic development. Greater integration of renewable energy will ensure grid capacity to meet growing commercial demand such as high technology industries including data centres.

## Local

- The policies and objectives contained within the CDP establish a clear precedence for the proposed substation due to the benefits and opportunities of dispatchable grid services, that will be facilitated.
- The proposed substation will be located within land zoned Enterprise and Employment.
- The precedence for the siting of gas fired power plants and associated infrastructure such as the proposed substation, is well established at this location in Profile Park, given the approval of similar development within the same zoning.

## 7.0 POPULATION AND HUMAN HEALTH

### 7.1 INTRODUCTION

This chapter examines the existing environment and addresses the potential impacts on population and human health arising from the proposed substation in Profile Park.

The two environmental factors of population and human health are addressed under separate headings. The assessment on population considers the current land use of the proposed substation site, the current activities occurring within and in the vicinity of the site, local population information, employment profiles and tourism.

The study area for population and human health includes review of relevant information on a county and national scale but is mainly concentrated on the Electoral Districts (ED) within which the project is located.

### 7.2 POPULATION

#### 7.2.1 Land Use

The site of the proposed substation is located in Profile Park, Dublin 22 which is c.3 km west of Clondalkin town centre. Profile Park is a 100 acre (40.5 Ha) fully enclosed, private business park. Immediately adjacent to Profile Park is the Castlebaggot 110 / 220 kV substation which provides electrical transmission connectivity to the national electricity transmission grid system.

The site of the proposed substation is greenfield. The northern boundary of the site is bounded by the internal road network within Profile Park, while the east, south, and west boundaries of the site are bordered by greenfield. The existing Google PPK Data Centre Campus and Digital Realty Trust are located immediately to the south-west and south-east of the site respectively. There are no land use/activities on the existing site. The immediate area is predominantly commercial / industrial in nature.

Grange Castle Golf Course is located c.250 m east of the site and Baldonnel Aerodrome c.500 m south of the site. The nearest residential properties are located c.450 m to the south of the site and c.450 m to the northeast. The nearest primary school to the proposed site is Scoil Mochua (Primary School and Special Services) located c.1.3 km north-east and the nearest secondary school identified within the vicinity is Deansrath Community College c.1.7 km north-east of the proposed substation site. A number of community facilities and amenities are available in the wider geographical area, which are listed in more detail in Section 7.3.1.1 of Chapter 7 in the main EIAR.

#### **Population Trends**

An examination of the existing population in the study area has been carried out to identify population trends, density and to define the properties/receptors surrounding the proposed site.

During the period of 2006 to 2016, the population increased nationally by approximately 12% with the population of South Dublin County increasing by 12%. During this time, the population of Clondalkin Village ED increased by 5%, which represents an increase of 434 persons for the area. This illustrates that the population of the local area is increasing at a slower rate than rates

at county, regional and national level. In addition, the population density for the study area is generally sparse compared with the overall county.

### **Property/Receptors**

The locations of properties and buildings (referred to as receptors) in the vicinity of the proposed substation have been identified using address data from the GeoDirectory database which is used to populate Eircodes. The validity of the GeoDirectory data has been confirmed by way of publicly available mapping, aerial imagery, and street-level imagery. All receptors within 1 km of the proposed site boundary have been identified and used to inform assessments within this EIAR.

Approximately 130 no. property receptors were identified within 1 km of the proposed substation location from the GeoDirectory database (January 2023). A review of this data using aerial photography indicates that most of these property receptors are present along the local road network to the north, south and west of the proposed substation location.

## ***7.2.2 Potential Effects***

### ***7.2.2.1 Construction Phase***

#### **Land Use**

As set out Section 3.4.1, Chapter 3, of the EIAR, 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.

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.

#### **Population Trends**

It is anticipated that there would be a positive direct effect on local population trends as a result of the construction of the proposed substation. Employment generation is considered to involve 20 persons during peak activities on site and this short-term increase in employment may also result in a short-term increased need for accommodation locally. This short-term positive effect will add value to the local economy. Otherwise, the construction of the proposed substation would not result in any permanent change to local population trends within the area or across SDCC. There will be a short-term and imperceptible effect on population.

### **Property/Receptors**

Access to the proposed substation site will be provided via the adjacent gas fired power plant site. The adjacent gas fired power plant site is accessed via an entrance off the existing industrial estate roadway, with access to the Profile Park industrial estate provided north of the site via the R134 (New Nangor Road).

Negative effects on the local population as well as residential properties as a result of construction work, including construction related traffic movements, could impact on noise and

air quality. In addition, there is potential for works to impact local residential amenity, i.e., a resident's enjoyment of their home.

The delivery of construction equipment and materials is proposed via existing public roads, which are currently used by heavy goods vehicles (HGV)s. As a result, there will be a short-term increase in traffic related effects during the construction phase. These effects are assessed in detail in the Chapter 10 (Air Quality and Climate) and Chapter 11 (Noise and Vibration) of this EIAR.

It is considered that any negative effects arising during construction will be slight and short term in nature. In addition, it should be noted that properties located along the R134 (New Nangor Road), which will experience an increase in construction traffic movements are located at a distance from the proposed substation site, with the nearest residential dwellings in the area surrounding the proposed development located c.400 m or further from the site.

### **Property Value**

The construction works for the proposed substation will not have any impact on the local property values. Profile Park and its surrounding business parks are zoned for 'Employment and Industry' and there is significant construction being undertaken in this area with no evidence of a reduction in house prices arising from this construction activity. The effect on property value will be neutral.

### **Employment/Economy**

The proposed substation will lead to the support and creation of direct and indirect employment during construction. At a local level, employment will rise due to the staff required on site. At a regional and national level, employment will be created through specialised construction services as well as through the supply of building equipment and materials. As a result, the construction phase of the proposed substation will have a short-term, slight positive effect on employment and economy in the local area.

### **Tourism**

There are a number of tourism attractions and public amenities within the study area including the Grange Castle Golf Course, Corkage Park, Clondalkin Round Tower and the Dublin Mountains Park. It is not considered that construction work will have any direct or negative impact on tourist amenities. In addition, there are no anticipated negative effects arising from construction for local recreational users. Effects are predicted to be neutral.

#### **7.2.2.2 Operational Phase**

### **Land use**

The site of the proposed substation will change from a greenfield site zoned for 'Enterprise and Employment' development to a substation. This will result in a long-term and significant effect on land use which is consistent with the land use zoning of the site and its environs.

### **Population Trends**

The substation will be unmanned, with routine maintenance and security services being carried out intermittently over its operational lifetime. It is not anticipated that the operation of the proposed substation will have any direct or negative impact on population trends. Effects are predicted to be neutral.



## Property/Receptors

It is not anticipated that the proposed substation whilst in operation will have any significant or long term effect on sensitive local receptors (dwellings) within the area. The nearest residential dwellings are located over c.400 m or further from the proposed substation site.

## Property Value

The proposed substation is not predicted to have any impact on the local property values. Profile Park and its surrounding business parks are zoned for 'Employment and Industry' and there is significant development of a similar nature, commercial and industrial infrastructure, in this area with no evidence of a reduction in house prices. The effect on property value will be neutral.

## Employment/Economy

The substation will be unmanned, with routine maintenance and security services being carried out intermittently over its operational lifetime. There will be a neutral direct effect on employment, however, the indirect effects of the substation may include facilitating additional data centre development. In the event that this was to occur this would result in employment and other commercial opportunities which would have a slight to moderate indirect positive effect.

## Tourism

As noted previously, there are several relevant tourism attractions and public amenities within the study area including the Dublin Mountains Park, as well as the adjacent Grange Castle Golf Course and Corkagh Park. It is not anticipated that the operation of the proposed substation will have any direct or negative impact on tourist amenities or local recreational amenities. Effects are predicted to be neutral.

### *7.2.2.3 Decommissioning Phase*

The proposed Baldonnell 110kV substation is expected to be operational in accordance with the adjacent gas fired power plant. The power plant is expected to be operational for at least 25 years. On cessation of activities, the plant will either be redeveloped as a power related facility or the site will be redeveloped in an alternative form.

Details of provisions to decommission and render safe or remove all materials, waste, ground, plant, or equipment contained on or in the site that may result in environmental pollution will be agreed with the Environmental Protection Agency as part of the Industrial Emissions Licensing process.

## **7.3 POTENTIAL EFFECTS ON HUMAN HEALTH**

### *7.3.1.1 Construction Phase*

#### Air Quality and Dust Emissions

The greatest potential effect on air quality during the construction phase of the proposed substation is from construction dust emissions as a result of excavation works, infilling and landscaping activities and storage of soil in stockpiles. This leads to the potential for nuisance dust. While construction dust tends to be deposited within 350 m of a construction site, the majority of the deposition occurs within the first 50 m (IAQM, 2014)<sup>22</sup>. The extent of any dust

generation depends on the nature of the dust (soils, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction.

The construction of the proposed substation will take place away from residential properties (receptors) with the nearest receptor located over c.400 m from the site. As set out in Chapter 10 (Air Quality and Climate), dust and particulate matter effects from the site will be imperceptible, direct, neutral, and short-term in nature, and therefore is predicted to pose no nuisance to nearby sensitive receptors.

### **Noise and Vibration**

During the construction phase of the proposed substation there will be some effect on nearby noise sensitive properties due to noise emissions from typical construction activities. However, given the scale of the proposed development, the distances between the main construction works and nearby noise sensitive properties, and that the construction phase of the proposed substation is temporary in nature, it is expected that the various noise sources will not be excessively intrusive.

Due to the distance of the proposed works from sensitive locations significant vibration effects are not expected, and construction vehicle movements are not expected as a significant source of vibration along the existing road networks.

Furthermore, appropriate noise and vibration control measures will be implemented, and will ensure that noise and vibration effect is kept to a minimum. Noise effects are predicted to be slight and short term. Vibration effects are predicted to be not significant and momentary.

### **Health and Safety**

All activities carried out by the appointed Contractor on the proposed substation 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.

#### **7.3.1.2 Operational Phase**

### **Air Quality**

As set out in Chapter 10 (Air Quality and Climate), emissions from the site will not result in a significant effect on human health. It can be concluded that dust and particulate matter effects from the site will be long-term, direct, neutral and imperceptible in nature, and therefore is predicted to pose no nuisance to nearby sensitive receptors.

### **Noise and Vibration**

With respect to the operational phase of the proposal, the predicted noise and vibration levels are expected to be within best practice noise limits. As set out in Chapter 11 (Noise and Vibration), review of the predicted increases in noise level at the nearest residential noise sensitive locations conclude that the associated effect is 'not significant' at all locations for daytime, evening and night time periods. Therefore, in relation to noise, the associated effect is predicted to be not significant and long-term.

## Health Benefits

Aside from the potential socio-economic benefits previously discussed, there are environmental benefits to the proposed substation. The contribution of the proposed substation, in supporting the Profile Park Power Plant to achieve a decrease in reliance on fossil fuel combustion will have a moderate to significant positive long-term effect on the health and well-being of the general population.

## Residential Amenity

Residential amenity relates to the human experience of a person's home, derived from the general environment and atmosphere associated with the residence. The quality of residential amenity is influenced by a combination of factors, including site setting and local character, land-use activities in the area and the relative degree of peace and tranquillity experienced at the residence. The nearest dwellings to the proposed substation are located approximately 400 m or further from the site. Access to the proposed substation site will be provided via the adjacent gas fired power plant site via the R134 (New Nangor Road) and therefore these properties will be unaffected by the proposed substation. There will therefore be a neutral effect on amenity.

## 7.4 MITIGATION AND MONITORING MEASURES

No specific mitigation or monitoring measures are proposed for the construction or operational phase in terms of population and human health outside of those specified in the respective technical chapters of the EIAR as referenced in Section 7.1 of the Chapter.

## 7.5 RESIDUAL EFFECTS

The proposed substation will have a slight positive residual impact on the local economy through construction worker spending.

The proposed substation will provide a connection to the existing electricity transmission network for the adjacent peaking power plant, supporting the power plant in the balancing of the grid to enable greater renewable development on a national scale and help to achieve targets in national energy and climate change policies as well as provide the possibility for the future connection of data centre development to a direct energy supply. This is a direct positive long-term residual effect at a national level.

With an operational life expectancy of 25-years, the plant will either be redeveloped / upgraded and continue in its current use as a substation, or the site will be redeveloped in an alternative form.

## 8.0 LAND, SOILS AND GEOLOGY

### 8.1 INTRODUCTION

This chapter of the EIAR assesses the effects of the proposed substation, as described in Chapter 3 'Description of the Development', on the land, soil and geological environment. Information on the existing soil and geological environment is presented as a baseline for the site. The potential effects of the proposed development are discussed along with recommended mitigation measures for each potential effect. Any residual and cumulative effects are also assessed.

The regional review of geological conditions covers a zone of 2 km from the site boundary, as suggested in the Institute of Geologists of Ireland (IGI) guidelines. The proposed development site is located within 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 entire proposed project is described in detail in Chapter 3 of this EIAR.

The regional soils in this area, including the grid and gas connection, indicate that the site consists of 2 no. types of soil, namely basic deep poorly drained mineral and 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). The bedrock geology on the GSI 1:100 000 map indicate that this site is underlain by Lucan Formation limestone.

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

### 8.2 POTENTIAL EFFECTS

The construction of the development will require removal of topsoil and subsoil to a competent founding layer and upfilling with structural fill and/or concrete to the required finished floor level. Overall, the excavations for the substation will have a neutral environmental effect. The grid connection will be laid beneath the ground surface and/or private road. The excavation required for the grid connection will have an imperceptible, temporary and neutral environmental effect on soils and geology. The pre-mitigation construction potential impact is imperceptible, negative, and long-term due to the relatively small footprint of infrastructure and its location.

During the operational phase of the project, no new impacts on the soil and geological environment will arise. A few direct impacts are possible during the operational phase of the proposed development which may include some construction traffic may be necessary for maintenance of the site which could result in minor accidental leaks or spills of fuels/ oils affecting the groundwater and potential spills and leaks of oils from infrastructure and equipment resulting in contamination of soils and water. Mitigation measures will negate the potential negative effects and therefore no cumulative impacts on the soils and geology environment are envisaged during the operational stage, as there will be no significant movement of soils/subsoils, or construction works, during this period. The effects of operation on natural resources such as land, soils and geology will be imperceptible and long-term.

### 8.3 MITIGATION AND MONITORING MEASURES

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. All works will be managed and carried out in accordance with the Construction and Environmental Management Plan (CEMP).

All excavation works during the construction stage will be monitored by an experienced geotechnical engineer or engineering geologist. 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. The earthworks will not be scheduled to be carried out during severe weather conditions. Following these mitigation measures, the resultant effect will be not significant, permanent and negative.

The operational team will carry out maintenance works and will put in place mitigation measures to reduce the risk of hydrocarbon or oil spills during the operational phase of the substation. Mitigation measures applied during decommissioning activities will be similar to those applied during construction where relevant.

### 8.4 RESIDUAL EFFECTS

The replacement of topsoil, subsoils and rock, with gravels, concrete and impermeable surfaces for the construction of the infrastructure (temporary and permanent) will result in a change in ground conditions within the proposed development site. Overall, this residual effect is permanent but not significant.

All potential effects on the soil and geological environment will be mitigated through good site practice on vehicular movements, management of fuels, sustainable use of soils etc. Overall, the residual effects from these aspects will be not significant to imperceptible, temporary and negative.

## 9.0 HYDROLOGY AND HYDROGEOLOGY

### 9.1 INTRODUCTION

This chapter describes the existing hydrological, hydrogeological and water quality characteristics at the site of the proposed project. The potential effects on the water environment arising from the development of the substation and associated infrastructure, including the grid connection, are assessed. The drainage of the project is considered which includes proposed mitigation measures to reduce any potential negative effects associated with the construction, operation and decommissioning of the proposed development. Any residual effects are also assessed.

In this chapter, the potential impacts on the water environment resulting from the proposed development are evaluated and mitigation measures are proposed to reduce any significant impacts. Based on the mitigation measures proposed, the significance of the residual impact on the water environment is determined.

The significance of effects of the proposed development has been assessed in accordance with the EPA guidance document Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022)<sup>1</sup>. Table 2-2 (available in Chapter 2) is taken from the EPA document. It outlines guidance for describing the quality and significance of effects.

The site of the proposed substation is located within the National River Basin District of the 2<sup>nd</sup> cycle river basin management plan, formerly the Eastern River Basin District (ERBD) within the 1<sup>st</sup> cycle river basin management plan. At a local scale, the Baldonnell Stream flows through the site from in a north-south direction. The Baldonnell stream continues to flow northwards, discharging into the Griffeen River which then discharges into the River Liffey at Lucan. The proposed development is not located within a catchment which has identified ecological habitats such as NHA's, SACs and SPAs. 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.

With regards to existing ground water quality, the Water Framework Directive for the period 2013-2018 describes the groundwater quality status of the study area as 'Good' for Dublin GWB.

### 9.2 POTENTIAL EFFECTS

During construction activities, Exposed and disturbed ground may increase the risk of erosion and subsequent sediment laden surface water runoff. The release of suspended solids is primarily a consequence of the physical disturbance of the ground during the construction phase, if not correctly compacted. Hardstand areas and additional sealed surfaces could potentially reduce the infiltration capacity of the soils in areas where earthworks are undertaken and increase the rate and volume of direct surface runoff. Surface water control measures are incorporated into the design of the proposed development. The potential for an increase in runoff to streams is limited as surface water runoff will be controlled as part of the project design.

In terms of flooding, It is estimated that the natural landscaping and topography of the site will provide safe exceedance flow paths and prevent surface water ponding, therefore minimising

residual risks associated with an extreme flood event or a scenario where the stormwater drainage system becomes blocked.

The pathways identified for construction earthworks are drainage and surface water discharge routes. The main receptors are downgradient rivers (Liffey) and associated dependent ecosystems.

Due to the operational nature of the proposed site, the handling, containment, use and disposal of chemicals on site will be required at any given time leading to occasional accidental emissions of potentially polluting substances. This could cause localised contamination of site drainage/surface water features, i.e., Baldonnell Stream.

Surface water arising at the site will be managed by a dedicated stormwater drainage system designed in accordance with SuDS, limiting discharge from the site to greenfield runoff rates. On this basis, it is predicted that the development of the site will not increase the risk of flooding elsewhere in the catchment.

### 9.3 MITIGATION AND MONITORING MEASURES

In order to mitigate potential effects during the construction phase, best practice construction methods will be implemented in order to prevent water (surface and groundwater) pollution. A Construction and Environmental Management Plan (CEMP) was developed for the project to ensure adequate protection of the water environment. All personnel working on the project 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.

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. 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).

The potential impact of hydrocarbon or oil spills during the operational phase of the development are limited by the size of the fuel tank of vehicles used on the site. Mitigation measures for the potential release of hydrocarbons or oil spills include:

- The plant and vehicles to attend site should be regularly inspected or at least prior to the scheduled site visit to be free from leaks and is fit for purpose;
- Fuels stored on site will be minimised, any storage areas will be bunded appropriately for the fuel storage volume for the time period of the operation;
- Operational team to be competent and trained in an emergency plan for the operation phase to deal with accidental spillages; and
- Spill kits will be available to deal with accidental spillages.

Regarding wastewater effluent, wastewater will be pumped to an existing holding tank which will be maintained, monitored and emptied to a licensed facility.

Operators will receive specific training on the handling, containment, use, and disposal requirements for all potentially polluting products on site. All chemicals stored on site will be subject to a Control of Substances Hazardous to Health assessment and compliance.

## 9.4 RESIDUAL EFFECTS

The potential residual effects on the surrounding water quality, hydrology and existing drainage regime at the site are considered to be slight and temporary/short term in nature.

The construction timescale of activities within the site will be short-term in duration and, thereafter, the only activities occurring within the site will be associated with maintenance, such as maintaining the hardstanding and existing drains, ongoing maintenance, replacement of infrastructure and onsite infrastructure and monitoring during the operational phase. There are no significant long-term effects.

The design of the proposed development has taken account of the potential effects of the development and the risks to the surface water and groundwater environment. Measures have been developed to mitigate the potential effects on the water environment. These measures seek to avoid or minimise potential effects in the main through the implementation of best practice construction methods and adherence to all relevant legislation.



## 10.0 AIR QUALITY AND CLIMATE

### 10.1 INTRODUCTION

This chapter evaluates the impacts which the proposed development may have on Air Quality & Climate as defined in the Environmental Protection Agency (EPA) document Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022b) and Draft Advice Notes for Preparing Environmental Impact Statements (EPA, 2015).

### 10.2 POTENTIAL EFFECTS

#### Air Quality

The construction phase has the potential to impact air quality through construction dust emissions, however, it was determined that as the construction stage traffic does not meet any of the above criteria a detailed air quality assessment is not required as there is no potential for significant impacts to air quality from traffic emissions.

With respect to the operational phase, the TII PE-ENV-01106 (2022) scoping criteria was used to determine the road links required for inclusion in the modelling assessment. As none of the road links impacted by the proposed development met the scoping criteria a detailed assessment was scoped out as there is no potential for significant impacts to air quality from traffic emissions.

There is at most a low risk of dust impacts as a result of the proposed construction phase. Nevertheless, in order to ensure that no dust nuisance occurs during the earthworks, construction and trackout activities, best practice dust mitigation measures will be implemented.

There is also the potential for traffic emissions to impact air quality in the short-term over the construction phase. Particularly due to the increase in HGVs accessing the site. The construction stage traffic has been reviewed and a detailed air quality assessment has been scoped out as none of the road links impacted by the proposed development satisfy the TII REM assessment criteria. It can therefore be determined that the construction stage traffic will have an imperceptible, direct, neutral and short-term impact on air quality.

Following the IAQM guidance (2014), the proposed earthworks can be classified as 'large'. As a worst case. When combining this with the previously established sensitivity of the area (Section 10.3.3) this results in an overall low risk of dust soiling impacts and a low risk of human health impacts as a result of earthworks activities.

The proposed development will not increase traffic levels by more than the scoping criteria, therefore, an assessment of the impact of traffic emissions during the operational phase on ambient air quality is not necessary as no significant impacts are likely. It can be concluded that the impact of the proposed development in terms of air quality is long-term, localised, direct, neutral and imperceptible.

#### Climate

There is the potential for a number of greenhouse gas emissions to atmosphere during the construction of the development. Construction vehicles, generators etc., may give rise to CO<sub>2</sub> and N<sub>2</sub>O emissions. The Institute of Air Quality Management document *Guidance on the Assessment of Dust from Demolition and Construction* (IAQM, 2014) states that the proposed

development is unlikely to make a significant impact on climate. Therefore, in accordance with the EPA Guidelines, the impact will be short-term, neutral and imperceptible.

There are no potential impacts associated with the proposed development during the operational stage as the transmission line will be buried underground. It can be determined that the impact to climate during the operational stage is long-term, neutral and imperceptible.

### 10.3 MITIGATION AND MONITORING MEASURES

The pro-active control of fugitive dust will ensure the prevention of significant emissions, rather than an inefficient attempt to control them once they have been released. The main contractor will be responsible for the coordination, implementation and ongoing monitoring of the dust mitigation measures.

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 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.

### 10.4 RESIDUAL EFFECTS

The mitigation measures that will be put in place during construction of the proposed development will ensure that the impact complies with all EU ambient air quality legislative limit values which are based on the protection of human health. Therefore, the predicted residual impact of construction of the proposed development is direct, negative, short-term and imperceptible with respect to human health. There are no operational emissions from the proposed development, therefore the impact on air quality, human health and climate is predicted to be long-term, neutral and imperceptible.

## 11.0 NOISE AND VIBRATION

### 11.1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) describes the assessment undertaken of the potential noise and vibration impact from the proposed Profile Park substation and grid connection project on local residential amenity and commercial properties. Electrical power will be exported from the power plant's main transformers through the proposed Baldonnell 110kV 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. A full description of the proposed project is provided in Chapter 3 – Description of the Proposed Development.

Some 16 no. noise assessment locations have been identified that are representative of the nearest residential, commercial and amenity locations. The nearest occupied residential noise sensitive locations (NSL) are located some 400 m to the south of the site (i.e. R001) and some 450 m to the north east (i.e. R014). The closest amenity to the development is Grangecastle Golf Course (i.e. R015) which is located to the east of the development lands.

Noise and vibration impact assessments for the nearest NSLs have been prepared for the construction and operational phase of the proposed development. To inform this assessment baseline noise levels have been measured in the vicinity of a number of NSLs surrounding the proposed development. Noise predictions to the nearest NSLs have been prepared for both the construction and operational phases.

### 11.2 POTENTIAL EFFECTS

When considering a development of this nature, the potential noise and vibration effects on the surroundings must be considered for two stages: the short-term construction and the long-term operational phase.

The assessment of construction noise and vibration and has been conducted in accordance best practice guidance contained in *BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise* and *BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Vibration*. Subject to good working practice as recommended in the EIAR, noise associated with the construction phase is not expected to exceed the recommended limit values. The associated noise and vibration are not expected to cause any significant effects.

Based on detailed information on the site layout, plant noise emission levels, noise levels have been predicted at NSLs. The predicted operational noise levels will be within best practice noise limits; therefore, it is not considered that a significant effect is associated with the development.

No significant vibration effects are associated with the operation of the site.

### 11.3 MITIGATION AND MONITORING MEASURES

Regarding construction/decommissioning activities, reference shall be made to *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:

- selection of plant with low inherent potential for generation of noise and/ or vibration;
- placing of noisy / vibratory plant as far away from sensitive properties as permitted by site constraints, and;
- regular maintenance and servicing of plant items.

Noise and vibration monitoring is proposed in accordance with the guidance contained in *British Standard BS5528* during the construction phase.

## 11.4 RESIDUAL EFFECTS

During the construction phase of the project there will be some effect on nearby noise sensitive properties due to noise emissions from site traffic and other construction activities. However, given the distances between the main construction works and nearby noise sensitive properties and the fact that the construction phase of the development is temporary in nature, it is expected that the various noise sources will not be excessively intrusive. Furthermore, the application of binding noise limits and hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration effect is kept to a minimum.

## 12.0 BIODIVERSITY

### 12.1 INTRODUCTION

This chapter presents a Biodiversity Impact Assessment of the proposed development and should be read in conjunction with Chapter 3 (Description of the Proposed Development). Details of the assessment methodology and existing site conditions are presented, potential impacts are assessed, and mitigation measures are recommended, where required.

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).

There are no NHAs located within 15km, or with a hydrological link, to 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).

### 12.2 POTENTIAL EFFECTS

TOBIN prepared an AA Screening Report (which accompanies this EIAR in the Planning Application package) which assessed the potential for the proposed development to have likely significant effects on European sites(s) either alone or in-combination with other plans and projects. The screening assessment concluded that the proposed development, either alone or in combination with other plans and projects, will not result in likely significant effects on any European site, in view of the conservation objectives of the site, and therefore a stage 2 Appropriate Assessment was not required.

Due to the similar location of the national sites to the above mentioned European sites, there is similarly no potential for water quality impacts on the sites due to the lack of instream works, the separation distance (ca. 120m) between the proposed development site and the Baldonnell Stream, the downstream hydrological distance (ca. 30km), coupled with the small scale and temporary nature of the proposed construction works associated with the proposed development. No impacts on the four pNHA sites are anticipated.

The development of the proposed substation will result in a permanent loss of approximately 0.2ha of the mosaic habitat comprised of wet grassland and bare ground. The temporary construction compound will result in a temporary loss of approximately 1.2ha of dry meadow habitat. Following the completion of the construction phase, the construction compound infrastructure will be dismantled and removed offsite. No areas of treeline or hedgerow will be removed to facilitate the proposed development. No other areas of habitat will be lost to facilitate the proposed development.

The construction works have the potential to result in the runoff of sediment and/or construction pollution and the generation of dust during the works.

No listed non-native invasive plant species were recorded within the proposed development site during the field surveys. There is potential, however, for the construction works to result in the introduction of invasive non-native species if not appropriately managed.

No evidence of otter, including otter holts or layups/couches, were recorded along the Baldonnell Stream within the ZOI of the proposed development. No instream works will occur within the Baldonnell Stream. The proposed works will not result in any loss of important habitat for otter. A degradation of otter feeding resources located downstream would constitute a short-term, slight negative effect on otter at a local geographical scale.

There is potential that the proposed development site may support other small, protected mammal species such as hedgehog, pygmy shrew or Irish hare. However, considering the availability of higher valuable habitat within the surrounding environment and the lack of evidence of such species within the site, it is considered that the proposed development site is unlikely to support significant numbers of protected small mammals. The proposed construction works have the potential to result in the loss of habitat and disturbance of such species. However, given the low number of species likely to be using the site and the mobile nature of these species, the clearance of vegetation and disturbance is likely to result in short-term, slight, negative effects on the local population of small mammal species, at a local geographical scale.

The proposed construction works will result in the permanent loss of approximately 0.2ha of habitat which currently comprises a mosaic of wet grassland and bare ground. The areas of undisturbed wet grassland may provide some suitable habitat for ground nesting bird species. However, considering the small area of habitat which will be lost and the availability of alternative habitat within the surrounding area, the loss of 0.2ha habitat is unlikely to significantly impact local bird populations. The loss of habitat is likely to have a permanent, imperceptible, negative effect on the local bird population at a local geographical scale.

Construction related noise and the physical presence of machinery and construction personnel can result in the disturbance of birds from habitats located in close proximity to the proposed development site. The proposed construction works may result in short-term disturbance to breeding and wintering bird species which forage within the surrounding area; however, considering the small scale and short-term nature of the proposed development, it is likely that birds will acclimatise to human presence over time. The disturbance of bird species is likely to have a short term, imperceptible effect on the local bird population at a local geographical scale. The proposed construction works have the potential to result in a degradation of water quality and aquatic vegetation, in the absence of mitigation measures.

The proposed substation will be operated remotely with occasional site and maintenance visits. As such there will be a minimal increase in vehicular movements to the site and no associated increase in noise, dust or emissions.

During the operational phase, there are no predicted direct noise or vibration impacts from the redeveloped substation, as outlined in Chapter 11 Noise and Vibration. The only operational phase noise from the proposed substation redevelopment will be vehicle noise associated with maintenance visits to the site which will be irregular. Permanent lighting is proposed within the proposed development with an activation switch. Lighting will only be switched on when maintenance staff are present on site. Disturbance during the operational phase of the proposed development has the potential to result in long-term, imperceptible, negative effects on the local fauna at a local geographical scale.

Although the proposed substation will be unmanned, any wastewater generated at the proposed development site will arise from a welfare facility, consisting of a sink and toilet for operatives use when on site. It is proposed to discharge wastewater generated on the site into the permitted new infrastructure on the neighbouring Power Plant site, reducing the number of connections required into the existing network within the Profile Park Campus Falcon Avenue access road. The wastewater layout has been designed in accordance with Irish Water's latest

standard details and code of practice. Thus, there is no potential for water quality impacts from foul water on the receiving environment

## 12.3 MITIGATION AND MONITORING MEASURES

A Construction Environmental Management Plan (CEMP) has been prepared and provides a framework for how significant effects on the environment will be avoided during the construction phase.

A suitably qualified Ecological Clerk of works (ECoW) will be appointed by the 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 guarantee the construction phase of the proposed development will be 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.

A pre-construction botanical survey should be carried out. 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.

Construction vehicles will be restricted to designated areas access tracks to avoid impacting adjacent habitats and to ensure that soil compaction is restricted to these tracks. All disturbed ground will be fully reinstated following the completion of the works.

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 ensure the introduction and translocation of invasive species is prevented.

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 Chapter 9 (Hydrology and Hydrogeology).

The area which provides suitable bird nesting habitat (i.e. wet grassland) will not be removed, cleared or trimmed between the 1st March and 31st August, to avoid impacts on nesting birds

## 12.4 PROTECTED UNDER THE WILDLIFE ACTS AND/OR BIRDS DIRECTIVE. RESIDUAL EFFECTS

The design of the proposed development has considered the existing ecological conditions within the receiving environment. It is anticipated that with the implementation of mitigation measures (as outlined above), the construction, operational and decommissioning phases of the proposed development, will not result in significant residual effects on biodiversity.

## 12.5 RESIDUAL EFFECTS

During the construction phase, the development will have a slight positive residual impact on the local economy through construction worker spending.

The proposed substation will provide a connection to the existing electricity transmission network for the adjacent peaking power plant, supporting the power plant in the balancing of the grid to enable greater renewable development on a national scale and help to achieve

targets in national energy and climate change policies as well as provide the possibility for the future connection of data centre development to a direct energy supply. This is a direct positive long-term residual effect at a national level.

In the event where the substation is decommissioned, details of provisions to decommission and render safe or remove all materials, waste, ground, plant, or equipment contained on or in the site that may result in environmental pollution will be agreed and undertaken as required by the relevant planning conditions.



## 13.0 CULTURAL HERITAGE

### 13.1 INTRODUCTION

IAC Archaeology has prepared this chapter to assess the impact, if any, on the archaeological and cultural heritage resource of a proposed development at Profile Park. The assessment determines, as far as reasonably possible from existing records, the nature of the archaeological and cultural heritage resource in and within the vicinity of the proposed development area using appropriate methods of study. An impact assessment was undertaken to identify potential adverse impacts that the proposed development may have on the cultural heritage resource, while the mitigation strategy is designed to avoid, reduce, or offset such adverse impacts.

### 13.2 POTENTIAL EFFECTS

There is no potential impact on the archaeological and cultural heritage resource within the extent of the proposed development which is located within an existing area that has been stripped of topsoil (archaeologically monitored) and the existing roadway. Whilst the remainder of the proposed development area (compound area) has been subject to disturbance, it is unclear how this disturbance may have affected the potential archaeological resource. It remains possible that ground disturbances associated with the development may have a direct negative impact on archaeological remains that may survive within the site. Impacts have the potential to range from moderate to significant in scale, prior to the application of mitigation.

No potential negative impacts upon the cultural heritage resource are predicted because of the construction of the proposed development.

No negative impacts during operation are predicted upon the archaeological and cultural heritage resource.

### 13.3 MITIGATION AND MONITORING EFFECTS

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 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).

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 effects and the effectiveness of the recommended mitigation measures.

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

No mitigation relating to the operational phase and the archaeological and cultural heritage resource is required.

### 13.4 RESIDUAL EFFECTS

There are no predicted residual effects for the operational phase of the proposed development upon the archaeological and cultural heritage resource.

## 14.0 LANDSCAPE AND VISUAL IMPACT ASSESSMENT

### 14.1 INTRODUCTION

The Townscape and Visual impact Assessment report was prepared in respect of a 110kV electrical substation at a site located in Profile Park, Dublin 22. The report describes the townscape/visual context of the proposed development and assesses the likely impacts of the scheme on the receiving environment, in terms of both townscape character and visual amenity.

Landscape/Townscape Impact Assessment (LIA) relates to assessing effects of a development on the Landscape/Townscape as a resource in its own right and is concerned with how the proposal will affect the elements that make up the Landscape/Townscape, the aesthetic and perceptual aspects of the Landscape/Townscape and its distinctive character.

Visual Impact Assessment (VIA) relates to assessing effects of a development on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the Landscape/Townscape and/or introduction of new elements. Visual impacts may occur from; Visual Obstruction (blocking of a view, be it full, partial or intermittent) or; Visual Intrusion (interruption of a view without blocking).

### 14.2 MITIGATION

The main mitigation by avoidance measure employed in this instance is the siting of the proposed development in a robust, appropriately zoned business park that will avail of screening from existing and imminent built form and vegetation to minimise open visibility from within the study area. No other specific landscape and visual mitigation measures are deemed necessary in this instance.

### 14.3 POTENTIAL EFFECTS

In combination with the Low Landscape/Townscape sensitivity designation outlined above for the site and its immediate environs, the significance of construction stage impacts is deemed to be Slight within the immediate industrial context of the site and its surrounds of Profile Park. However, this will quickly reduce to Imperceptible in the wider study area, where construction activities will be barely discernible. The quality of the construction stage effects will be Negative and Temporary in duration.

Whereas, the significance of operational stage impacts is deemed to be Slight-imperceptible within the immediate industrial context of the site and its surrounds of Profile Park. However, this will reduce to Imperceptible in the wider study area, where operational activity will be barely discernible. The quality of the construction stage effects will be marginally adverse (i.e. Neutral-Negative) due to the wholly utilitarian nature of the substation and Permanent in duration.

Decommission stage works are likely to be similar to those outlined as part of the construction stage, but of a lesser duration. Thus the significance of decommissioning stage impacts is deemed to be Slight within the immediate industrial context of the site and its surrounds of Profile Park. However, this will quickly reduce to Imperceptible in the wider study area, where

decommissioning activities will be barely discernible. The quality of the decommissioning stage effects will be Neutral and Temporary in duration.

Overall, it is considered that the proposed substation development will not result in any significant townscape or visual impacts.

## 15.0 TRAFFIC AND TRANSPORTATION

### 15.1 INTRODUCTION

The objective of this chapter is to assess the impact of the proposed substation on the existing road network. This report will calculate the expected volume of traffic that will be generated by the proposed development to connect the nearby and recently approved Gas Fired Peaker Power Plant to the existing electricity transmission system (Reg. Ref.:SD21A/0167) and assesses the impact that this traffic will have on the operational capacity of the local road network. This chapter is summary of a more comprehensive Traffic and Transportation Assessment (TTA) which is included in Appendix 15-1.

### 15.2 POTENTIAL EFFECTS

Traffic generated by the construction phase primarily consists of traffic related to either delivery of construction materials, or removal of excavated material from the site for disposal. Construction phase staff would also generate trips to and from the construction sites.

Trip Rates for the various uses within the development have been determined for weekdays, Monday to Friday, to coincide with the maximum levels of existing traffic on the adjacent road network. 59 no. vehicles are expected, per day, during the peak construction period and 5 no. vehicles are expected, per day, during the average construction period which over the 12 months. During the busiest time of the construction phase, 10 no people and 59 no. HGVs are expected over the 12-hour construction time during the day which will result in 10 LGVs and 5 HGVs arriving and 5 HGVs departing in the AM peak and in the PM peak 10 LGVs and 5 HGVs departing, and 5 HGVs arriving.

The analysis of the junctions for the construction phase of the proposed development in the AM and PM peaks showed they do not have capacity issues at present and would operate within capacity during the construction phase of the proposed development. The junction assessments indicate that none of the junctions assessed are currently exceeding desirable capacity. This will remain the case during the construction period. The operational traffic for the proposed development is expected to be less than 5 vehicle movements per day. The potential effects of the operation phase on the capacity and operation of the receiving road network are considered to be negligible.

### 15.3 MITIGATION AND MONITORING MEASURES

Mitigation measures during the construction phase will include another photographic survey of haul roads, immediately prior to the commencement of the construction phase and continuous monitoring of haul roads throughout the construction phase. Throughout the operational phase warning signs on the approach to the entrance will be maintained, the entrance will be maintained to ensure visibility splays remain unobstructed and parking requirements will be monitored with additional spaces to be provided if required.

### 15.4 RESIDUAL EFFECTS

There will be no residual impacts during the construction phase or decommissioning phase. Mitigation measures that will be taken in the operational phase will ensure imperceptible effect on the traffic capacity.

## 16.0 MATERIAL ASSETS

### 16.1 INTRODUCTION

The purpose of this chapter is to describe the methodology used to assess the potential impacts from the proposed Baldonnell Substation and its associated 110kV underground cable, (hereafter referred to as the “proposed development”) on the material assets in the study area. The chapter will describe the baseline environment of the material assets in the study area, assess the likely impacts and set out mitigation measures to be put in place to reduce these impacts on the material assets. The chapter considers the impacts on the material assets and not the people using the assets. Material Assets are resources that are valued and that are intrinsic to specific places. These may be economic assets of human or natural origin.

### 16.2 POTENTIAL EFFECTS

Access will be required to third party properties to allow construction works to be completed for the project. Construction practices will ensure that any effects regarding property accessibility will be minimised.

Traffic on the road network generated by the construction phase of the proposed development will primarily consist of traffic related to either delivery of construction materials, or removal of excavated material from the site for disposal. Construction Phase staff will also generate trips to and from the construction sites. The traffic impact on the road network during the Construction Phase will have slight negative temporary effects. The operational traffic for the proposed development is expected to be less than 5 vehicle movements per day. The potential effects of the Operation Phase on the capacity and operation of the receiving road network are considered to be negligible.

Where roads are opened for the installation of electrical cables or gas pipelines, moderate negative temporary effects are likely to arise on these roads during construction.

The main issue to be addressed at this stage of the project is the use of cranes and to ensure details of same are advised to the Department at least 30 days in advance of usage on site. It should be noted that the Department of Defence has not highlighted any major concerns in relation to this project which cannot be mitigated. It is predicted that there will be a short term, negative and slight impact on aviation during construction.

There are no existing material assets on the site of the proposed substation however there are material assets along the proposed routes associated with the electrical grid connection. However, these assets are development in built up ‘made’ land. Therefore, an imperceptible negative effect on land-take is predicted.

There are potential surface water quality effects associated with the proposed development which could indirectly impact watercourses. These are discussed above and are set in more detail in chapter see Chapter 9 (Hydrology and Hydrogeology) of Volume II of the EIAR.

Raw materials (e.g., wood, steel, stone, sand etc.) required during the construction phase of the proposed development will be sourced from local suppliers, where possible. However, some of the equipment parts may not be manufactured in Ireland and these will have to be imported. The plant may also require the use of some non-renewable materials. However, consideration will be given to the sustainable sourcing of all raw materials and materials will be reused where possible. Methodologies will be chosen at design stage to decrease the amount of imported

material required. There will be an imperceptible, negative and permanent impact on raw materials as a result of the proposed development.

During its operations phase, the proposed development will operate in accordance with its Industrial Emissions Licence and an emissions or effects on its nearest receptors will be regulated by the Environmental Protection Agency in accordance with same. There will be imperceptible, brief effects on the road network during the operational phase.

The national distribution and transmission system operated by ESB Networks and EirGrid and the national gas network operated by GNI would facilitate these connections subject to commercial agreement. The proposed substation will facilitate the transmission of power to the grid to support renewable energy integration. Therefore, the proposed substation along with the associated gas fired power plant would have a positive and long-term effect on public utilities..

## 16.3 MITIGATION AND MONITORING MEASURES

### 16.3.1 Construction

There are no mitigation measures relating to existing properties outside of Profile Park. Within Profile Park effects on the neighbouring Digital Realty data centre will be mitigated in accordance with the Construction Environmental Management Plan.

The proposed works will require the crossing of road infrastructure and the opening of the road to lay underground electrical cables and a gas pipelines. Chapter 15 (Traffic and Transport) details specific mitigation measures to be undertaken during the construction phase to eliminate and reduce any impacts on the road network.

During the project detailed design stage, further consultation will be undertaken with all communication utility providers to confirm the current locations of their infrastructure. This information will be considered in the detailed design of the project and the infrastructure avoided where possible.

While it is unlikely that any cranes used during construction will reach the aerodrome's Inner Horizontal Surface, it will be necessary [under S.I. 215 of 2005 - 'Irish Aviation Authority (Obstacles to Aircraft in Flight) Order'] for prior notification of the use of any crane/s to be submitted, at least 30 days in advance, to the Irish Aviation Authority and to Casement Aerodrome (through the Department of Defence).

Mitigation measures for the protection of watercourses are detailed in Chapter 9 (Hydrology & Hydrogeology) and will be adhered to throughout the construction phase.

Consideration will be given to the sustainable sourcing of all materials. Materials will be reused where possible. The methodologies chosen at design stage, will result in a decrease in the amount of imported material, which in turn will reduce the impact of traffic on the surrounding roads and will result in less demand on non-renewable sources such as quarries.

### 16.3.2 Operation

There are no mitigation and monitoring measures required during the operation of the proposed Baldonnell Substation.

## 16.4 RESIDUAL EFFECTS

The material assets identified in the study area are considered to be typical infrastructure frequently encountered in civil engineering infrastructure projects, in both rural and urban environments. As such, it is considered that the resulting predicted effects on material assets from the proposed substation will be positive, slight and permanent.

## 17.0 MAJOR ACCIDENTS

### 17.1 INTRODUCTION

This chapter assesses the potential for significant effects on the environment arising from the vulnerability of the proposed substation to risks of major accidents and/or disasters, given the location of the proposed substation and connection to the adjacent gas fired power plant.

### 17.2 POTENTIAL EFFECTS

This chapter examines the potential for major accidents and disasters in the context of the proposed development at Profile Park, with regards to:

- The likelihood of the proposed substation to act alone and/or to interact with the gas fired power plant to act as a source of hazard;
- The relevant major accidents and/or disasters, if any, that the adjacent and associated gas fired power plant could be vulnerable through the construction, operation and decommissioning phases;
- The potential for these major accidents and/or disasters to result in likely significant adverse environmental effect(s); and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment.

### 17.3 MITIGATION AND MONITORING MEASURES

The proposed substation will be designed and constructed in line with good industry practice, and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design and in accordance with planning and Industrial Emissions Licence requirements.

### 17.4 RESIDUAL EFFECTS

The residual risk of a major accident or disaster occurring during either the construction, operation or decommissioning phased of the project is either very low or low.



## 18.0 INTERACTIONS OF THE FOREGOING

The potential effects of the proposed Baldonnell 110kV substation and the measures proposed to mitigate these effects have been outlined in this EIAR. However, in any development with the potential for environmental effect there is also the potential for interaction between effects of the different environmental aspects.

The result of these interactions may either exacerbate the magnitude of the effect or may in fact ameliorate it. As part of the requirements of an EIAR, the interaction of the effects on the surrounding environment needs to be addressed.

Table 18-1 outlines the different environmental aspects which have potential to interact as a result of the proposed Baldonnell Substation. Interactions have been clearly identified in the early stages of the project and where the potential exists for interaction between environmental impacts, the EIAR specialists have taken the interactions into account when making their assessment. Potential interactions (both positive and negative) have been considered for the construction, operation and decommissioning phases of each of the different environmental aspects. It is noted that the operational life of the proposed development is expected to be at least 25 no. years and consideration has been made for the full duration of this time period with regards to an assessment of potential impacts and interactions.

Table 18-1: Interaction between Environmental Topic (positive and negative)

Interaction		Population and Human Health	Land, Soils and Geology	Hydrology and Hydrogeology	Air Quality and Climate	Noise and Vibration	Biodiversity	Cultural Heritage	Landscape / Townscape and Visual	Traffic and Transport	Material Assets	Major Accidents and Disasters
Corresponding Topic Heading	Interaction											
	No Interaction											
Population and Human Health												
Land, Soils and Geology												
Hydrology and Hydrogeology												
Air Quality and Climate												
Noise and Vibration												
Biodiversity												
Cultural Heritage												
Landscape / Townscape and Visual												
Traffic and Transportation												
Material Assets												
Major Accidents and Disasters												

---

Fairgreen House  
Fairgreen Road  
Galway  
H91 AXK8  
Tel: + 353 (0)91  
565211  
Email: [info@tobin.ie](mailto:info@tobin.ie)

Block 10-4,  
Blanchardstown Corporate  
Park  
Dublin  
D15 X98N  
Tel: + 353 (0)1 8030401  
Email: [info@tobin.ie](mailto:info@tobin.ie)

Market Square  
Castlebar  
Mayo  
F23 Y427  
Tel: +353 (0)94 9021401  
Email: [info@tobin.ie](mailto:info@tobin.ie)

Unit 4 Crescent Court,  
St Nessan's Road,  
Dooradoyle,  
Limerick  
V94 V298  
Tel: +353 (0)61 574 413  
Email: [info@tobin.ie](mailto:info@tobin.ie)

The Gateway Building,  
Floor 3, Northwest Business Park,  
Collooney,  
Sligo  
F91W40H  
Email: [info@tobin.ie](mailto:info@tobin.ie)

---