

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 19th of 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 5th 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. A copy of this determination is provided in Appendix 1-1 of this report.

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 Table 2-1

Table 2-1: List of Consultees and Record of Consultations

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
South Dublin County Council	20 th December 2022	No response received	N/A	N/A
Environmental Protection Agency (EPA)	8 th December 2022	No response received	N/A	N/A
An Taisce The National Trust for Ireland	8 th December 2022	08 th December 2022	Acknowledged receipt of consultation.	N/A
Commission for Communications Regulation (ComReg)	8 th December 2022	8 th December 2022	Automated response received.	N/A
Commission for Energy Regulation	8 th December 2022	No response received	N/A	N/A
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media	8 th December 2022	No response received	N/A	N/A
Department of Defence	8 th December 2022	8 th December 2022	Response received and redirected to Planning Section. No further response received.	N/A
Department of the Environment, Climate and Communications	8 th December 2022	08 th December 2022	Email response redirecting to new contact email Department of Environment, Climate and Communications. No further response received.	N/A
Department of the Enterprise, Trade and Employment	8 th December 2022	09 th December 2022	Acknowledged receipt of consultation and forwarded for attention of paul.gavin@ida.ie	N/A
Minister for Communications, Energy and Natural Resources	8 th December 2022	No response received	N/A	N/A
National Parks and Wildlife Services	8 th December 2022	No response received	N/A	N/A
Department of Housing, Local Government and Heritage	8 th December 2022	9 th December 2022	Acknowledged receipt of consultation. Normal	

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
		30 th January 2022	Response provided outlined that as part of EIA requirements you are obliged to retain the services of a Consultant Archaeologist to carry out the Archaeological Impact Assessment (AIA) as part of the overall Cultural Heritage Impact Assessment (CHIA) of the proposed development, which should be integrated into the finalised Environmental Impact Assessment Report (EIAR). In this regard the Department awaits the results of the CHIA and full EIAR for the scheme before commenting further.	CH 13 Cultural Heritage
Eastern and Midland Regional Assembly	8 th December 2022	No response received	N/A	N/A
Enterprise Ireland	8 th December 2022	No response received	N/A	N/A
Fáilte Ireland	8 th December 2022	No response received	N/A	N/A
Gas Networks Ireland	8 th December 2022	9 th December 2022	<p>Response attached network map for the area of interest. Gas Networks Ireland has Distribution Gas Network within your area of interest. Before you start work, you must have a current gas network map (or maps) for the work location. A current gas network map (or maps) must always be kept on site while work is under way. The gas network map is indicative only. You must conform to the safety and legal notices printed on the map. For further information on reading this map refer to the <i>Safety Information</i>.</p> <p>Breaking Ground</p> <ul style="list-style-type: none"> • Supervision by Gas Networks Ireland is not required when working in the vicinity of Distribution gas pipes (unless noted otherwise). Safe digging practices must be followed. All work in the vicinity of a gas transmission pipeline must be carried out in compliance with: <ul style="list-style-type: none"> ○ Health and Safety Authority, <i>Code of Practice for Avoiding Danger from Underground Services</i>. ○ <p>Critical Activity Quarrying or blasting must not be carried out within 400 m of the gas network until Gas Networks Ireland has been consulted on 1800 42 77 47</p> <p>Aurora Telecom</p> <ul style="list-style-type: none"> ○ Part of the Aurora Telecom Network may be present on your network map. For further information, Aurora can be contacted on 01 892 6166 (Office Hours) or auroralink@gasnetworks.ie. <p>Service Pipes</p>	

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			<ul style="list-style-type: none"> ○ Service pipes feeding individual properties are not generally shown but their presence should always be anticipated. For further information on domestic gas services refer to the Safety Information. <p>Safety Information</p> <ul style="list-style-type: none"> ○ Before starting work any work in the vicinity of the gas network, please refer to the Gas Networks Ireland safety booklet, Safety advice for working in the vicinity of natural gas pipelines, available at https://www.gasnetworks.ie/home/safety/dial-before-you-dig/ <p>This booklet contains important safety information, including advice on how to read the gas network maps you have requested.</p>	
Geological Survey of Ireland (GSI)	8 th December 2022	No response received	N/A	N/A
Health and Safety Authority (HSA)	8 th December 2022	9 th December 2022	Automated response acknowledged receipt of consultation.	N/A
IDA Ireland	8 th December 2022	9 th December 2022	We aim to answer your query within 48 hours.	N/A
Inland Fisheries Ireland (IFI)	8 th December 2022	No response received	N/A	N/A
Irish Water	8 th December 2022	No response received	N/A	N/A
Office of Public Works (OPW)	8 th December 2022	N/A	Automated response acknowledged receipt of consultation. If you do not receive a response within 20 working days, please email this address again for further assistance (info @opw.ie)	N/A
Heritage Council	8 th December 2022	No response received	N/A	N/A
Transport Infrastructure Ireland	8 th December 2022	23 rd December 2022	<p>The recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.</p> <p>The developer/scheme promoter should have regard, inter alia, to the following:</p> <ul style="list-style-type: none"> • Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes, • TII would be specifically concerned as to potential significant impacts the 	

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			<p>development would have on the national road network (and junctions with national roads) in the proximity of the proposed development,</p> <ul style="list-style-type: none"> • The developer should assess visual impacts from existing national roads, • The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts, • The developer, in conducting an Environmental Impact Assessment, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works), • The developer, in conducting an Environmental Impact Assessment, should have regard to TII's Environmental Assessment and Construction Guidelines, including the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2006), • The EIAR should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Guidelines for the Treatment of Noise and Vibration in National Road Schemes (1st Rev., National Roads Authority, 2004)), • It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. TII's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the NRA/TII TTA Guidelines which addresses requirements for sub-threshold TTA, • The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required, • In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network, 	

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			<ul style="list-style-type: none"> In relation to haul route identification, the applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licenses may be required in connection with the proposed haul route, including where temporary modification to the road network may be required. Consultation with relevant PPP Companies and MMarC Contractors may also be required. All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed, including abnormal weight load, In relation to cabling and potential connection routing, the scheme promoter should note locations of existing and future national road schemes and develop proposals to safeguard proposed road schemes. In the context of existing national roads, alternatives to the provision of cabling along the national road network, such as alternative routing or the laying of cabling in private lands, should be considered in the interests of safeguarding the investment in and the potential for future upgrade works to the national road network. The cable routing should avoid all impacts to existing TII infrastructure such as traffic counters, weather stations, etc. and works required to such infrastructure shall only be undertaken in consultation with and subject to the agreement of TII, any costs attributable shall be borne by the applicant/developer. The developer should also be aware that separate approvals may be required for works traversing the national road network and motorway network. <p>Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice.</p>	

2.5 EIA REPORT PRODUCTION

2.5.1 *Characterisation of the Baseline Environment*

A characterisation of the existing environment and its likely evolution in the absence of the project has been undertaken in order to determine the baseline conditions. This involved the following steps:

- Study areas defined for each receptor type based on the relevant characteristics of the receptors (mobility / range);
- Review information available from official sources, public sources and consultation;
- Review likely or potential impacts that might be expected to arise from the project;
- Determine if there is sufficient data to identify, describe, evaluate and assess the impacts of the project with sufficient confidence;
- If further data is required, ensure data gathered is targeted and directed at answering the key questions and filling key data gaps; and
- Review information gathered to ensure the environment can be characterised in sufficient detail.

2.5.2 *Consideration of Alternatives*

The EIA Directive requires that the EIAR provides a description of the reasonable alternatives studied, which are relevant to the project and its specific characteristics. An indication of the main reason for selecting the chosen option (the project), including a comparison of the environmental effects will be provided within the EIAR.

This approach will include an assessment of:

- **Alternative Sites:** This will outline the consideration given to other land banks and the assessment that was undertaken to identify the final proposed site locations for the onshore infrastructure;
- **Alternative Layouts / Design:** This will detail how the arrangement of site infrastructure within a site was considered and where environmental issues have informed final proposed layouts;
- **Alternative Technology / Processes:** This will detail the consideration of other technology/processes that was undertaken taking into account aspects such as the needs and scale of the project and site location details.

2.5.3 *Description of Significant Effects*

The approach taken to make balanced assessments is guided by both EIA specialists and technical specialists using publicly available and official data, new data gathered for the purposes of the EIAR, experience and expert judgment. In order to provide a consistent framework and system of common tools and terms, where appropriate, a matrix approach has been used to frame and present the judgments made. However, it should be noted that for each topic of the EIA the latest guidance or best practice has been used and therefore definitions of sensitivity and magnitude of impact have been tailored to each receptor. The impact assessment considers the potential impacts during the construction, operation and decommissioning of the proposed Baldonnell Substation.

The EIA Report has been completed in accordance with the requirements of Directive 2011/92/EU, the Planning and Development Act 2000 to 2020 and the Planning and Development Regulations 2001 to 2021, with the information contained within the EIAR

adhering to the requirements of Schedule 6 of the Regulations (Information to be Contained in EIAR)

The methodology used in preparing the EIAR comprises the following steps:

- A description of the project comprising information on the site, design, size and other relevant features of the project;
- A description of the likely significant effects of the project on the environment;
- A description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment; and
- Any additional information relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

The methodology is broadly consistent across all chapters of the EIAR and is adhered to as much as possible, in order to ensure that the assessment methodology is transparent and can be effectively communicated to, and understood by, all planning and environmental stakeholders, and the general public. The schematic below from the EPA’s Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022) provides an overview of the steps undertaken in the preparation of this EIAR.

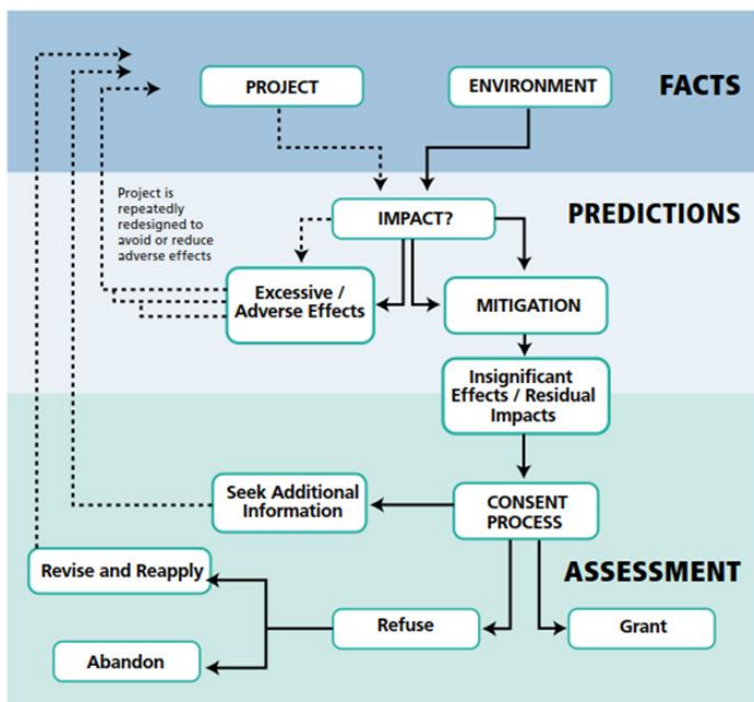


Figure 2-1: EIA Process

The EIAR includes (to an appropriate degree of detail) a description of:

- The location of the project and the physical characteristics of the whole project, including, and the land-use requirements during construction and operation;
- The main characteristics of the operational phase of the project (production and maintenance processes in particular), for example energy demand, energy used, nature and quantity of materials and natural resources (including water, land, soil, biodiversity, etc.,) used;
- An estimate, by type and quantity, of the expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, etc., and quantities and types of waste produced during the construction and operational phases; and

- The reasonable alternatives which are relevant to the project and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects;
- The relevant aspects of the baseline environment, an outline of the likely evolution thereof without the project;
- The likely significant effects of the project on the environment accounting for construction of the project, the use of natural resources, emission of pollutants, risks to human health, cultural heritage and the environment;
- Of the expected significant adverse effects on the environment of the project deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it;
- The cumulation of effects with other existing or approved developments, or both;
- The impact of the project on climate and vulnerability of the project to climate change;
- Of the likely significant effects and methods used to identify and assess significant effects on the environment, including details of any difficulties;
- The measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements

All of the data collected as part of the preparation of this EIAR is relevant to the specific study area defined for each individual chapter. The data requirements for each environmental topic have been determined by technical specialists and is driven by relevant legislation, guidelines, planning and environmental policy requirements and the submissions and observations provided in response to consultation undertaken in support of preparing the EIAR.

2.5.4 Assessment of Significant Effects

As stated in the “Guidelines on the Information to be contained in Environmental Impact Assessment Reports’ (EPA, May 2022), an assessment of the likely significant effects of a project is a statutory requirement of the EIAR process. The criteria for the presentation of the characteristics of potential significant effects will be described with reference to the magnitude, spatial extent, nature, complexity, probability, duration, frequency, reversibility, cumulative effect and transboundary nature (if applicable) of the effect.

The classification and description of effects in the EIAR follows the terms provided in Table 3-4 of the EPA Guidelines (2022) referenced above (and duplicated in Table 2-2 in this EIAR). According to the Guidelines, the relevant terms listed in the table below can be used to consistently describe specific effects, but all categories of terms do not need to be used for every effect.

The use of standardised terms for the classification of effects ensures that the EIAR employs a systematic approach, which can be replicated across all disciplines covered in the EIAR. The consistent application of terminology throughout the EIAR facilitates the assessment of the project on the receiving environment.

Table 2-2: Extracted from the EPA Guidelines (2022)

<p>Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral</p>	<p>Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).</p>
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	<p>Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.</p>
<p>Describing the Significance of Effects 'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance).</p>	<p>Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).</p> <p>Imperceptible An effect capable of measurement but without significant consequences.</p> <p>Not significant An effect which causes noticeable changes in the character of the environment but without significant consequences.</p> <p>Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p> <p>Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.</p> <p>Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</p> <p>Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.</p> <p>Profound Effects An effect which obliterates sensitive characteristics.</p>
<p>Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.</p>	<p>Extent Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.</p> <p>Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)</p>
<p>Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.</p>	<p>Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.</p> <p>Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.</p>
<p>Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for</p>	<p>Momentary Effects Effects lasting from seconds to minutes</p> <p>Brief Effects Effects lasting less than a day</p>

different topics – in the absence of specific definitions for different topics the following definitions may be useful.	Temporary Effects Effects lasting less than a year
	Short-term Effects Effects lasting one to seven years
	Medium-term Effects Effects lasting seven to fifteen years
	Long-term Effects Effects lasting fifteen to sixty years
	Permanent Effects Effects lasting over sixty years
	Reversible Effects Effects that can be undone, for example through remediation or restoration
	Frequency of Effects Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
	Describing the Types of Effects
Indirect Effects (a.k.a. Secondary or Off-site Effects) Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.	
Cumulative Effects The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.	
'Do-Nothing Effects' The environment as it would be in the future should the subject project not be carried out.	
'Worst case' Effects The effects arising from a project in the case where mitigation measures substantially fail.	
Indeterminable Effects When the full consequences of a change in the environment cannot be described.	
Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.	
Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.	
Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SO _x and NO _x to produce smog).	

2.5.5 Mitigation and Monitoring

Where the impact assessment identified that an aspect of the development was likely to give rise to significant environmental effects, mitigation measures, above and beyond any embedded mitigation incorporated into the assessment process, were considered to avoid effects or reduce them to acceptable levels where possible.

Two types of mitigations were defined within the EIAR:

- Embedded mitigation: measures that are identified and adopted as part of the evolution of the project design or measures otherwise incorporated as controls on the construction or operation of the project: and
- Additional mitigation: measures that are identified as a result of the EIA process to reduce or eliminate any effects that are predicted to be significant, which are subsequently offered as project commitments for inclusions in the conditions of consent.

Monitoring provides assurance that proposed systems are operating as intended. This allows adjustments of operations to be made to ensure continued compliance with consent conditions such as emission limit values, conditions of operation, performance criteria/ indicators and detection of unexpected mitigation failures.

For ease of reference the mitigation measures identified in this EIA Report have been collated and are presented in Appendix 2-1 of this EIAR.

2.5.6 Cumulative Effects

Each technical chapter of the EIAR includes a cumulative assessment which considers the impacts arising from the project alone and cumulatively with and other relevant plans, projects and activities. The following must or should be considered in terms of cumulative impacts:

- Existing projects;
- Projects that have received consent;
- Impacts of the development of existing zoned lands; and
- Future phases or proposals for the project.

In relation to the electrical grid connection and gas connections it should be noted that both connections are referenced throughout the EIAR. Other projects and plans are referenced specifically in the cumulative impacts section of the various chapters comprising this EIAR. These include existing developments within Profile Park (for example Digital Realty and Google) and other consented development which are not yet in operation such as the associated gas fired peaker power plant. Other developments which are located outside of the immediate setting of the proposed Baldonnell Substation which also have the potential to result in cumulative impacts have also been identified. These include for example aviation impacts with Casement Aerodrome and air quality impacts with other power plant projects (which are consented but not yet operational) such as Grange Back Up Power Plant in addition to air quality emission from other Industrial Emissions Licences facilities such as Takeda and Pfizer

2.5.7 Residual Effects

Following the identification of any necessary additional mitigation measures, residual effects were assessed, and their significance described. Monitoring measures are proposed in the EIAR where there is uncertainty regarding the significance of, or the predicted levels of residual effects or where monitoring is necessary to modify control measures on an ongoing basis to control residual effects.

2.6 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.

2.7 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.

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.

Table 2-3: List of Company Contributors to the EIAR

Company	Name	Contribution to the EIAR
TOBIN Consulting Engineers	(EIAR Chapter number for which primary author)	Project Direction and Management, Scoping and Consultation, Co-Ordination, Preparation of Figures, and the following Chapters:
	Damien Grehan	Introduction
	Siobhán Tinnelly	EIA Report Methodology
	Louise Byrne (1, 3, 4,5, 6, 16, 17, 18)	Description of Development
	Caroline Naughton (2)	Need for the Development
	Michael Nolan	Consideration of Alternatives
	John Dillon (8, 9)	Planning Policy
	Serena Byrne (7)	Population and Human Health
	Áine Sands (12)	Land, Soils and Geology
	Laura Kennedy (12)	Hydrology and Hydrogeology
	Gabriela Iha (15)	Biodiversity
	Maria Rooney (15)	Traffic and Transportation
		Material Assets

		Major Accidents and Disasters Interactions of the Foregoing TOBIN has also prepared the planning application and planning drawings
AWN Consulting	Damian Kelly Dermot Blunnie	Noise and Vibration
AWN Consulting	Jovanna Ardath	Air Quality
Macroworks	Richard Barker Karen O'Neill	Landscape and Visual Impact
IAC Archaeology	Faith Bailey	Cultural Heritage
O'Dwyer & Jones - Aviation Planning	Declan O'Dwyer	Technical Input on Aviation

Table 2-4: List of Competent Experts Contributing to the EIAR

Company/Individual	Competent Experts	Qualifications	No. of Years' Experience
TOBIN Consulting Engineers	Damien Grehan	Honours Degree in Engineering (1992), University College Dublin (UCD) Masters' Degree in Engineering Science (1994), UCD Chartered Engineer	25
TOBIN Consulting Engineers	Siobhán Tinnelly	Diploma in Corporate Governance, Corporate Governance Institute, 2022 Postgraduate Diploma in Management, Irish Management Institute (IMI), 2017 MSc. Applied Hydrogeology, University of Newcastle-upon-Tyne, 2013 Post Graduate Diploma in Environmental Engineering, Trinity College Dublin, 2004 B.A. (Mod) Natural Sciences (Env. Science), Trinity College Dublin, 1996-2000 Professional Geologist, P.Geo. Institute of Geologists of Ireland (IGI)	20
TOBIN Consulting Engineers	Louise Byrne	PG Certificate GIS (2016) University of Leeds, UK Masters in Regional & Urban Planning (MRUP) (2006). University College Dublin (UCD) BA Hons International Geography & German (2004) UCD Chartered Member of Royal Town Planning Institute (2010)	8

TOBIN Consulting Engineers	Caroline Naughton	BSc., Environmental Science/Geology (2005) University College Cork (UCC) Postgraduate Diploma, NFQ Level 9, Quality Management – Lean Systems, (2018) University of Limerick (UL)	15
TOBIN Consulting Engineers	John Dillon	BSc. in Environmental Science (2001), NUIG MSc. and Diploma in Environmental Engineering (2003), Imperial College London Professional Geologist (PGeo)	16
TOBIN Consulting Engineers	Michael Nolan	City & Guilds in Computer Aided Design (2001), Griffith College Dublin	16
TOBIN Consulting Engineers	Áine Sands	University College Cork - Ireland, BSc (Hons) – Applied Ecology (2013)	5
TOBIN Consulting Engineers	Laura Kennedy	M.Sc., Environmental Science, Trinity College, Dublin (2008 – 2009) B.Sc., Zoology, University College, Cork (2003 – 2007)	12
TOBIN Consulting Engineers	Gabriela Iha	B.E. Civil Engineering, Centro Universitario da FEI, Brazil (2017) MSc Sustainable Transport and Mobility, TU Dublin (2022)	5
TOBIN Consulting Engineers	Maria Rooney	MEng Road and Transport Engineering, IT Sligo, 2019 BEng (Hons) Civil Engineering, IT Carlow, 2013 BEng (Ord) Civil Engineering, DKIT, 2010 CEng Engineers Ireland 2021 MIEI Member of Engineers Ireland (2011)	7
TOBIN Consulting Engineers	John O Flaherty	MEng Roads & Transport Engineering, Institute of Technology Sligo, 2019 BEng Civil Engineering, Queens University Belfast, 1994 Nat. Dip in Water Engineering, Institute of Technology Sligo, 1993 Certificate Roads Safety Audit, University College Dublin, 2013 CEng Engineers Ireland	25
AWN Consulting	Damian Kelly	BSc (Hons) Analytical Science, Dublin City University Environmental Science Queens University Belfast	23
AWN Consulting	Jovanna Arndt	Associate Member of the Institute of Environmental Science (AMIEEnvSc) Associate Member of the Institute of Air Quality Management (MIAQM)	

AWN Consulting	Edward Porter	Chartered Chemist Since 2001 (C Chem) Member of the Royal Society of Chemistry Since 1998 (MRSC) Member of the Institute of Environmental Science (MIEnvSc) Member of the Institute of Air Quality Management (MIAQM)	25
Macroworks	Jamie Ball	BA Hons (Landscape Architecture) 1998	12
Macroworks	Richard Barker	PG Diploma in Forestry (1996) BA in Environmental Studies (1995) Master's Degree in Landscape Architecture (2003) Corporate Member of the Irish Landscape Institute	21
IAC	Faith Bailey	2003 MA (Cultural Landscape Management) -University of Wales –Lampeter 2001 BA (Hons) Archaeology – University of Wales – Lampeter Member of the Chartered Institute for Archaeologists & Member of the Institute of Archaeologists of Ireland	18
O'Dwyer & Jones - Aviation Planning	Declan O'Dwyer	J.D. O'Dwyer has been a chartered member of the Royal Institute of British Architects for thirty years, and is a principal airports planner of the Irish Airports Authority, with responsibility for the master planning of Irish civil airports and Irish military aerodromes, and for the planning evaluation of buildings and structures at (and in the vicinity of) the Irish state airports (both civil and military); he has also been responsible for the planning and design of a large variety of airport buildings and structures at civil and military airports.	30