2.0 EIA REPORT METHODOLOGY

2.1 INTRODUCTION

This chapter presents an outline of the methodology to be employed for the proposed power plant. 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 inter-related impacts.

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 Panning 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

In the context of the proposed power plant at Profile Park, 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 proposed power plant will have a net electrical output of approximately 125 MW and will have a net electrical efficiency of approximately 49.4%. As such, the heat output (i.e., heat emitted from the stack) will be approximately 128 MW. This heat output is substantially lower than the 300 MW threshold identified in Paragraph 2(a) and so therefore an automatic EIA is 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.

2.3 EIA GUIDANCE

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

- 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 (EcIA) 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 SOUTH DUBLIN COUNTY COUNCIL

A pre-application consultation meeting was held with South Dublin County on the 28th March 2019. A second meeting was held on the 7th April 2021. The purpose of the first meeting was to introduce the proposed power plant to the Council in order to confirm the technical requirements of the planning application. Following a delay in the preparation of the application it was decided to hold a follow up meeting with the Council under the same pretext to reintroduce the project and to update the Council on subsequent design changes since the original meeting. The following commentary summarises the latter meeting in April 2021.

The meeting was attended by 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;
- Indicative Layout;
- Key Planning Application Considerations; and
- Next Steps.

A presentation was given providing information on the site and the proposed power plant. The Council provided some guidance on key topics to be included in the EIAR and some points that they wanted to see addressed therein. These points related to the following:

- Zoning;
- Visual impact;
- Design;
- Seveso screening;
- Energy analysis requirement;
- Residential amenity (i.e. noise, air, traffic);
- Aviation;
- Design Statement requirement;
- Traffic and transport;
- Drainage; and
- Landscaping.

2.4.2 CONSULTATION WITH STATUTORY AND NON-STATUTORY BODIES

EIAR scoping correspondence was submitted to relevant statutory and non-statutory bodies in February 2020 (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	15th February 2021	7th April 2021	Refer pre-application consultation notes in Section 2.4.1	Various chapters / sections of EIAR
Environmental Protection Agency (EPA)	15th February 2021	25th March 2021	The Agency had the following comments: • Regard should be had to the Commission Implementing Decision (CID) on BAT Conclusions for Large Combustion Plants where applicable; • Refer to the Agency's Air Dispersion Modelling from Industrial Installations Guidance Note (AG4); • Emissions to air could potentially impact on air quality, in particular Nitrogen Oxides. Potential impacts on air quality should be addressed including cumulative impacts from other sources; • The impact of emissions to all media should be assessed with reference to the relevant environmental objectives and standards.	Chapter 9 Hydrology and Hydrogeology Chapter 10 Air Quality and Climate Chapter 11 Noise and Vibration
An Taisce, The National Trust for Ireland	15th February 2021	18th February 2021	Acknowledgement received.	N/A
Commission for Communications Regulation (ComReg)	15th February 2021	N/A	N/A	N/A
Commission for Energy Regulation	15th February 2021	N/A	N/A	N/A
National Monuments Service Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media	15th February 2021	9th April 2021	It was noted that the development site located in an historic area adjacent to the site of Recorded Monument DU021-004- Kilbride Castle. In addition, recent archaeological investigations for the site immediately to the West of the proposed site (ref Geophysical Survey 20R0080 for Profile Properties) has identified the remains of a sub-circular enclosure and associated field systems. There is therefore the potential for archaeological features / materials to be found at the adjacent proposed site. It was the recommendation of the National Monuments Service that certain planning condition be applied by South Dublin County Council to the proposed power plant. These are discussed in Section 13.6.	Chapter 13 Cultural Heritage

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received

Department of Defence	15th February 2021	16th February 2021 to 2nd June 2021	The Department made the following observations:
			• Proposed building elevations:
			  ○ The height of any proposed buildings in the vicinity of Casement Aerodrome will be assessed (as obstacles) by the application of ICAO Annex 14 Obstacle Limitation Surfaces.
			  ○ Additionally the site location lies with the Casement Aerodrome 2km Inner Zone. The maximum height currently allowed is 20m above site level within this zone. The 2km Inner Zone is described in the South Dublin Development Plan 2016-2022.
			• Flue stack emissions:
			  ○ Due the proximity to Casement Aerodrome , Military Air Traffic Services will request an Aviation Impact Assessment on all potential emissions. The assessment should cover the effects of potential exhaust plumes and any other associated impact on flight operations at Casement Aerodrome.
			• Cranes:
			  ○ Given the proximity to Casement Aerodrome, operation of cranes should be coordinated with Air Corps Air Traffic Services, no later than 28 days before use, contactable at airspaceandobstacles@defenceforces.ie or 01-4037681
			• Wildlife/Attenuation Ponds/water features:
			  ○ Due to the proximity to Casement Aerodrome, mitigations may be required in relation to the management of wildlife attracted to attenuation ponds or other water features. Should negative effects of bird activity on Irish Air Corps operations arise, the owner must put measures in place to mitigate these effects to an acceptable level.
			• Solar Panels:
			  ○ Due to the proximity to Casement Aerodrome, an aviation Glint and Glare Assessment should be carried out to assess any impact on Irish Air Corps flight operations.
				Chapter 16 Material Assets

Department of the Environment, Climate and Communications	15th February 2021	N/A	N/A	N/A
Department of the Enterprise, Trade and Employment	15th February 2021	N/A	N/A	N/A

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
Minister for Communications, Energy and Natural Resources	15th February 2021	N/A	N/A	N/A
National Parks and Wildlife Services Department of Housing, Local Government and Heritage	15th February 2021	16th February 2021	Acknowledgement received advising that responses are typically provided within a 6 week timeframe. However, at the time of writing no response had been received.	N/A
Eastern and Midland Regional Assembly	15th February 2021	N/A	N/A	N/A
Enterprise Ireland	15th February 2021	N/A	N/A	N/A
Fáilte Ireland	15th February 2021	N/A	N/A	N/A
Gas Networks Ireland	15th February 2021	N/A	N/A however outside of the EIA process GNI provided design related guidance to Greener Ideas Limited in relation to the Gas AGI and likely gas connections.	N/A
Geological Survey of Ireland (GSI)	15th February 2021	1st March 2021	Response provided advised that the EIAR should address the impacts of the project on: • Groundwater; • Geology; • Geohazards; • Natural resources;	Chapter 8 Land, Soils and Geology Chapter 9 Hydrology and Hydrogeology
Health and Safety Authority (HSA)	15th February 2021	N/A	N/A	N/A
IDA Ireland	15th February 2021	25th February 2021	Acknowledgement received and suggestion for follow up meeting to discuss development opportunities.	N/A
Inland Fisheries Ireland (IFI)	15th February 2021	N/A	N/A	N/A
Irish Water	15th February 2021	8th March 2021	Irish Water response as follows: • Impacts of the development on the capacity of water services (do existing water services have the capacity to cater for the new development if required); • Where the development proposal has the potential to impact an IW Drinking Water Source the applicant shall provide details of measures to be taken to ensure that there will	Chapter 3 Description of Development Chapter 9 Hydrology and Hydrogeology

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			be no negative impact to IWs Drinking Water Source during construction and operational phases of the development; • Any upgrading of water services infrastructure that would be required to accommodate the development; • In relation to a development that would discharge trade effluent – any upstream treatment or attenuation of discharges required prior to discharging to an IW collection network; • In relation to the management of surface water; the potential impact of surface water discharges to combined sewer networks & potential measures to minimise/stop surface waters from combined sewers; • Any physical impact on IW assets – reservoir, drinking water source, treatment works, pipes, pumping stations, discharges outfalls etc. including any relocation of assets. • Any potential impacts on the assimilative capacity of receiving waters in relation to IW discharge outfalls including changes in dispersion /circulation characterises	
Office of Public Works (OPW)	15th February 2021	N/A	N/A	N/A
Heritage Council	15th February 2021	N/A	N/A	N/A
Transport Infrastructure Ireland	15th February 2021	N/A	N/A	N/A

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 power plant.

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 (Draft)(2017) provides an overview of the steps undertaken in the preparation of this EIAR.

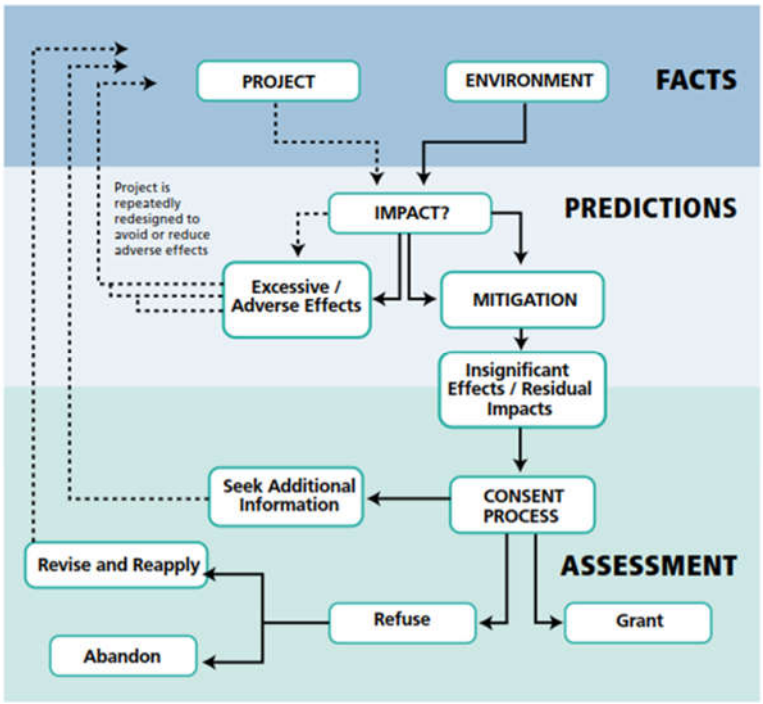

Figure 2-1: EIA Process

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 "Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, August 2017), 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 3-3 of the Draft EPA Guidelines (2017) 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 Draft EPA Guidelines (2017)

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	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).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	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).
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 below.).	Imperceptible An effect capable of measurement but without significant consequences.
	Not significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound Effects

	An effect which obliterates sensitive characteristics
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.	Extent Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.
	Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
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.	Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' 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.	Momentary Effects Effects lasting from seconds to minutes
	Brief Effects Effects lasting less than a day
	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

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 allow 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. Other developments which are located outside of the immediate setting of the proposed power plant 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 additional 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 Mark McCarthy. Mark is a Senior Project Manager and Planner at TOBIN Consulting Engineers Within the energy sector in Ireland, Mark has managed EIA Reports for several power plants including a 100 MW plant in Kilkenny a 100 MW plant in Tipperary, a 100 MW plant in Roscommon, a 200 MW plant in Galway, a 200 MW plant in Mayo and a 295 MW plant in Dublin. Outside of Ireland, Mark has managed the implementation of an Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management and Monitoring Plan (ESSMP) for a 1320 MW coal fired power plant in Morocco. Mark has also managed several other EIA Reports and planning applications (including non-EIA) in the renewables, marine infrastructure, transport, dairy and water/wastewater sectors. Mark is also a chartered member of the Irish Planning Institute (IPI).

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) Damien Grehan Siobhán Tinnelly Mark McCarthy (1-6) Louise Byrne (4,6,7, 16, 18) Michelle Wong (8, 9) Michael Nolan John Dillon (8, 9)	Project Direction and Management, Scoping and Consultation, Co-Ordination, Preparation of Figures, and the following Chapters: – Introduction – EIA Report Methodology – Description of Development – Need for the Development – Consideration of Alternatives – Planning Policy

	Áine Sands (12) Laura Kennedy(12) Ronan Murtagh (15) John O Flaherty (15)	– Population and Human Health – Land, Soils and Geology – Hydrology and Hydrogeology – Biodiversity – 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	Noise and Vibration
AWN Consulting	Edward Porter	Air Quality
Macroworks	Richard Barker Jamie Ball	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	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	Mark McCarthy	Masters in Urban and Regional Planning, Heriot Watt University, Edinburgh, 2005 BA in Public Administration, University of Limerick, 2003 Chartered Member of the Irish Planning Institute	18
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)	7
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	Michelle Wong	BSc. (Hons) Environmental Geoscience, University of Birmingham, 2009 MSc. Hydrogeology, University of Birmingham, 2010 PGeo and EurGeol (awaiting certification)	10
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	Ronan Murtagh	B.A. B.A.I Civil, Structural & Environmental Engineering, Trinity College Dublin (2012) CEng Chartered Member of Engineers Ireland	9
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	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