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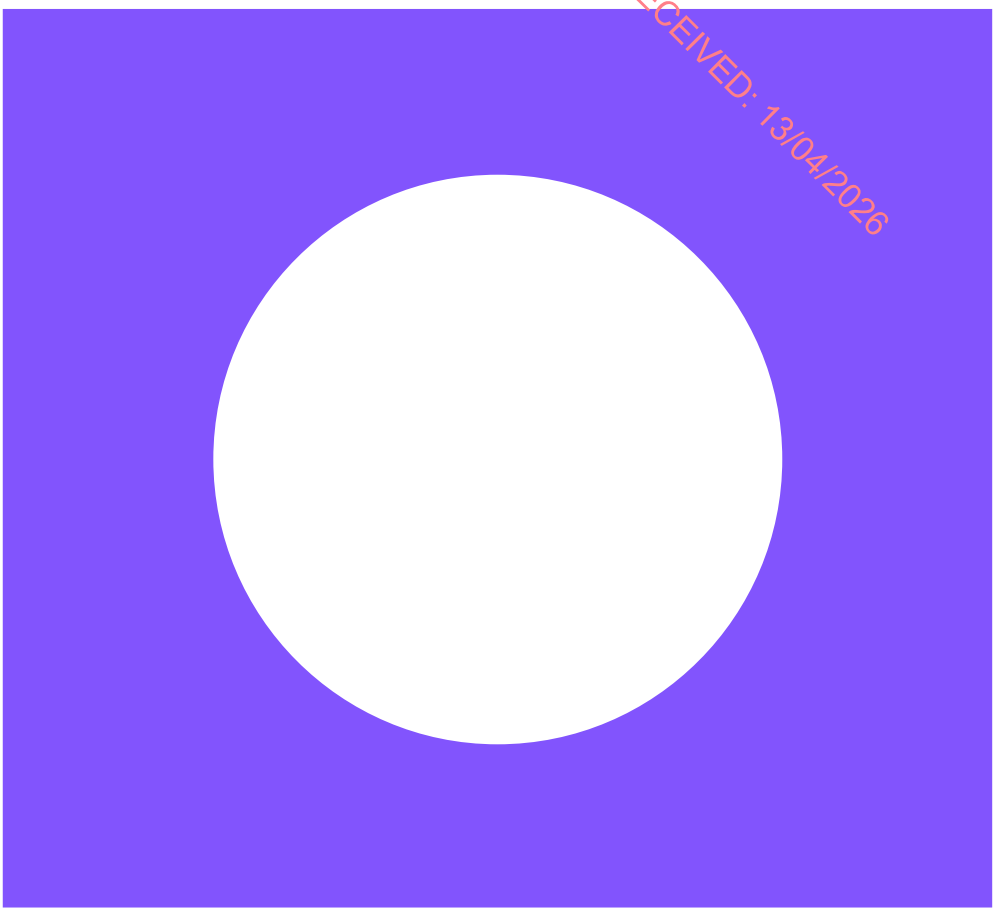

# Shelburne Energy Farm Environmental Impact Assessment Report

## Chapter 1 Introduction

April 2026

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# Shelburne Energy Farm Environmental Impact Assessment Report

## Chapter 1 Introduction

April 2026

# Issue and Revision Record

**Document reference:** PL2 | 229101268

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# 1 Introduction

## 1.1 Project Overview

Mott MacDonald Ireland Limited have been appointed by Gen7 Renewable Energy Limited (Gen7) to prepare this Environmental Impact Assessment Report (EIAR) to accompany planning applications to the relevant planning authorities for a renewable energy development.

Gen7 intend to apply for planning permission to construct a solar farm, battery energy storage system (BESS), which together are referred to as 'Shelburne Energy Farm'. Gen7 will also seek planning permission for a 220kV substation and associated cable connection which will connect Shelburne Energy Farm to the national grid.

This EIAR has been prepared to facilitate Wexford County Council and An Coimisiún Pleanála in undertaking an Environmental Impact Assessment for a solar farm, a battery energy storage system, and the associated 220kV substation and gird connection (hereafter "The Proposed Project").

As the Proposed Project meets a threshold specified within Schedule 5, Part 2, of the Planning and Development Regulations, 2001 (as amended), mandatory EIA is required (refer to Section 1.8 for further details).

This EIAR constitutes an Environmental Impact Assessment Report in accordance with Directive (2011/92/EU) as amended by Directive 2014/52/EU (together, the "EIA Directive") and fully complies with the requirements of the EIA Directive.

## 1.2 About the Applicant

Gen7 Energy Renewables Limited are an Irish independent renewable energy developer. Gen7 Energy Renewables Limited brings together over one hundred years of expertise in engineering, finance, information technology, new business development and marketing with the core skills to successfully develop and operate the proposed Shelburne Energy Farm.

## 1.3 Outline of the Project

Shelburne Energy Farm is a solar photovoltaic farm with an accompanying and co-located battery energy storage system. The solar farm will generate up to 92.68 MWp (peak [alternating current] generation under optimal conditions) of electricity while the battery energy storage system will provide 54.8MWac of electricity storage for a two-hour duration. The battery system will store the electricity generated by the solar farm.

Shelburne Energy Farm is located within a circa 121.5 hectare site in the townlands of Ballygarvan, Cloonagh and Nash, Gusserane, County Wexford. The largest solar array area - Area A, measures 65.1 hectares and contains the largest solar array and the co-located battery energy storage system. The solar farm then extends to a further two parcels of land (Area B – ca. 39.2 hectares and Area C – ca.17.2 hectares).

All utility scale energy generation projects require a connection to the national electricity grid. For Shelburne Energy Farm this will comprise a 220kV substation and an associated 220kV 2.9km cable connection to an existing transmission overhead line (Great Island - Lodgewood 220kV circuit) in the vicinity north of Shelburne Energy Farm.

## 1.4 The Proposed Project's consenting process

Table 1.1 sets out the planning consent process for the Proposed Project in chronological order in Table 1.1.

A single EIAR and Natura Impact Statement (NIS) will accompany both planning applications.

**Table 1.1: Planning Consent routes for the Proposed Project**

| Planning application type | Proposed Development | Planning authority |
|---|---|---|
| Section 34 of the Planning and Development Act, 2000, as amended | Solar Farm and BESS | Wexford County Council |
| Strategic Infrastructure Development of the Planning and Development Act, 2000, as amended | 220kV GIS/AIS substation compound and grid connection | An Coimisiún Pleanála |

## 1.5 References to Proposed Project

The following explanations are detailed herein in relation to the terms and definitions which constitute the Proposed Project in relation to this EIAR.

**Shelburne Energy Farm** refers to all elements of the solar farm, battery energy storage system and all associated access roads, low and medium voltage cabling, permanent metrological stations, temporary construction compounds, fire water supply, site drainage and perimeter fencing.

The **220kV Grid Connection** refers to the 220kV Gas Insulated Switchgear (GIS) and Air Insulated Switchgear (AIS) substation compound and the associated 220kV underground cable route which connects from the GIS building to the existing Great Island - Lodgewood 220kV transmission circuit, as described in further detail in Chapter 5 *Description of Development*.

The **Proposed Project** as referenced in this EIAR refers to all elements of the Shelburne Energy Farm and the 220kV Gird Connection as described above. The Proposed Project is described in detail in Chapter 5 of this EIAR.

The **Project Site** refers to the planning application boundaries referenced in Table 1.1 above, i.e. Shelburne Energy Farm and the 220kV Grid Connection.

## 1.6 Project Need

Solar PV technology is one source of electricity generation which is required to help fulfil the national and European targets for increased renewable energy generation within the electricity sector. Solar energy targets have been set within each Climate Action Plan published by the Government since the initial publication in 2019, and in the last three iterations (2023, 2024 and 2025) the national target for solar energy has been set at 8GW by the year to 2030.

Within the National Planning Framework First Revision (April 2025), National Policy Objective 74 sets out regional renewable electricity capacity allocations. The Proposed Project is located in County Wexford and is within the administrative boundary of the Southern Regional Assembly, the applicable regional Solar PV allocations are reproduced below in Figure 1.1.

**Figure 1.1: Regional Solar PV targets**

| Region | Energised Capacity 2023 (MW) | Additional Renewable Power Capacity Allocations (MW) | Total % of National Share in 2030 |
|---|---|---|---|
| | Solar PV | | |
| Eastern and Midlands | 306 | 3,294 | 45% |
| Northern and Western | 0.3 | 959 | 12% |
| Southern | 138 | 3,302 | 43% |
| **Total** | **445** | **7,555** | |

Source: Extract from the National Planning Framework First Revision (April 2025)

Solar PV is just one form of electricity which will make up the increasing diverse and renewable energy focused electricity generation mix within Ireland. Although in its infancy, solar PV is the fastest growing renewable energy source. It is an indigenous source of energy which support security of supply. Due to the hour-to-hour variability in renewable energy sources, including when irradiation may be lower during peak hours of electricity consumption, the provision of battery energy storage alongside the solar generation helps to offset this variability.

## 1.7 Project Location

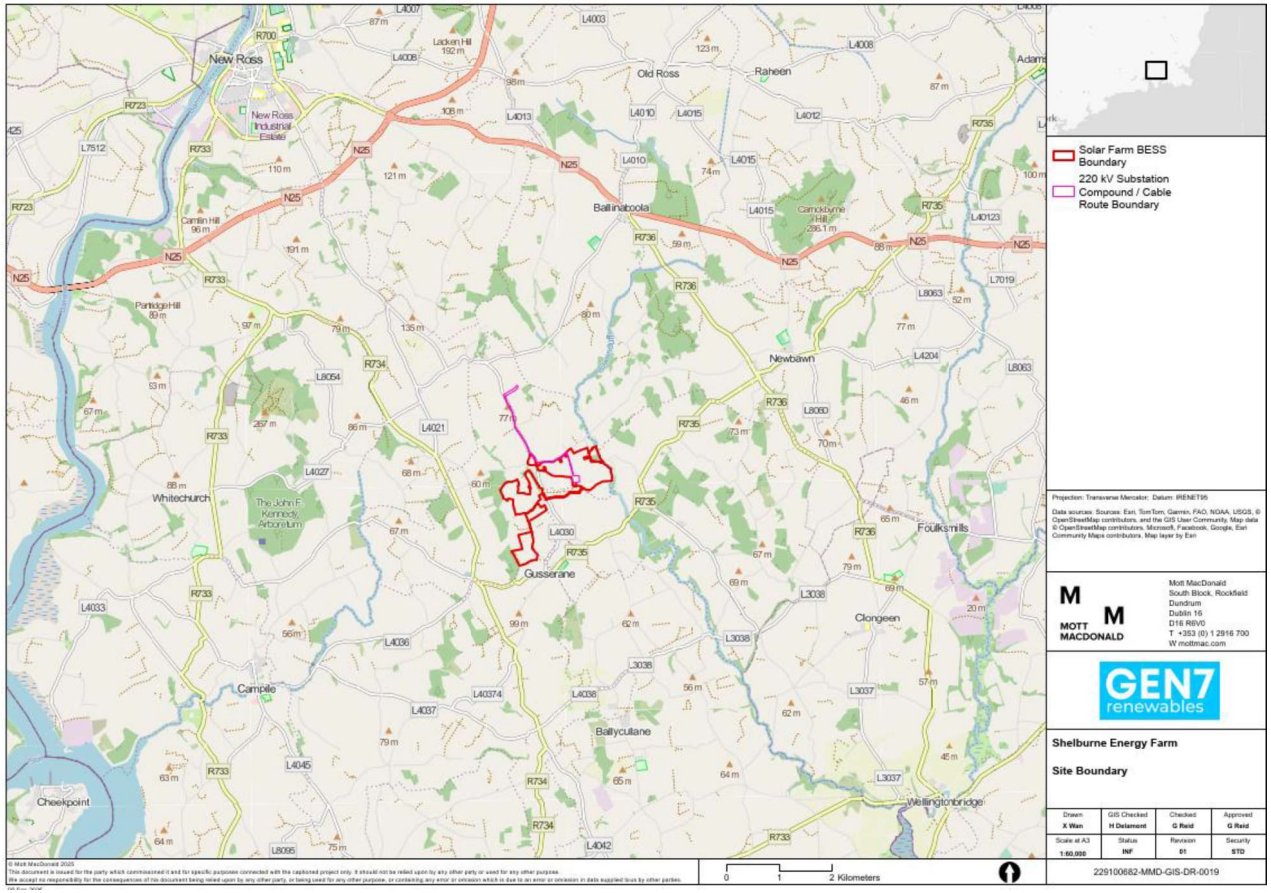
The Proposed Project is located in southwest County Wexford. The closest town is New Ross, located c.6.5km northwest of the Proposed Project; the village of Newbawn is located c.3km north-northeast of the Proposed Project. The Proposed Project occurs across three townlands to the north of the settlement of Gusserane as detailed herein;

- The proposed solar farm is located across three townlands, Ballygarvan, Cloonagh and Nash.
- The proposed BESS is co-located with the solar farm and is located in the townland of Nash.
- The proposed 220kV grid connection is located in the townland of Nash.

The Project site boundary is shown in Figure 1.2 and overlain on aerial imagery in Figure 1.3. Both Figure 1.2 and 1.3 show the respectively planning application boundaries which comprise the Proposed Project, the red boundary represents the application boundary in relation to the planning application to Wexford County Council, while the pink boundary represents the application boundary for the planning application to An Coimisiún Pleanála.

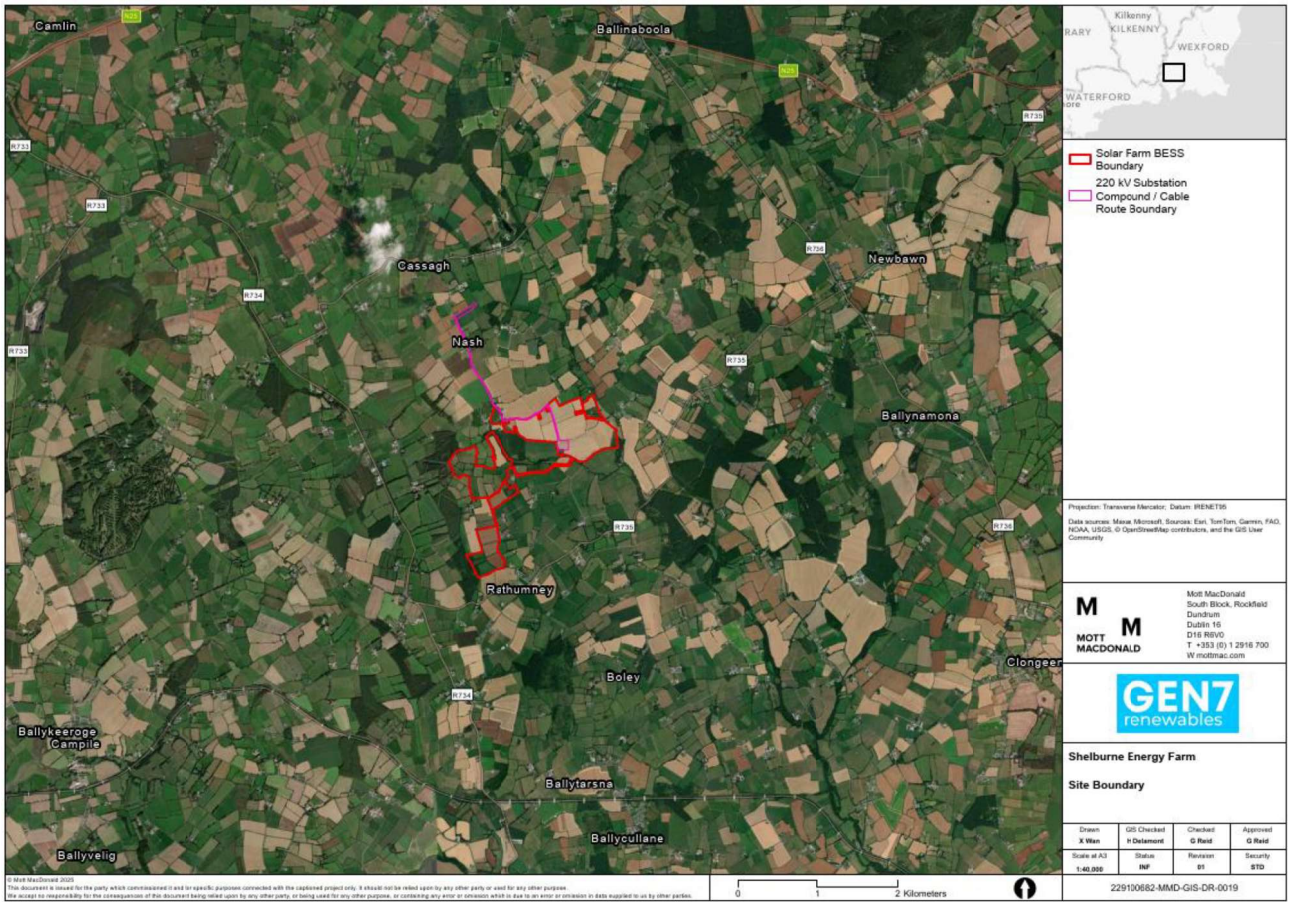
The current landuse within the Project site comprises existing agricultural lands which are predominately used for tillage production, crop production and livestock grazing. Land-use in the wider landscape of the Proposed Project comprises a mix of agriculture, low density residential development (one-off rural dwellings), commercial businesses and commercial forestry. The Proposed Project boundary also comprises the L4030 local road, which the 220kV underground cables will be laid within.

## Figure 1.2: Location of Proposed Project




Source: Mott MacDonald Ireland Limited

**Figure 1.3: Project Site Boundary (with satellite imagery)**




Source: Mott MacDonald Ireland Limited

## 1.8 Legislative Context of Environmental Impact Assessment

Projects listed in Annex I to the European Union (EU) EIA Directive 2011/92/EU, as amended by EIA Directive2014/52/EU (together, the 'EIA Directive') requires the mandatory preparation of an EIA for all projects listed therein. Projects listed in Annex II to the EIA Directive are not automatically subjected to EIA. Member States can decide to subject them to an assessment on a case-by-case basis or according to thresholds and/or criteria (for example size), location (sensitive ecological areas and potential impact (surface affected, duration).

The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296/2018) amended the Planning and Development Act 2000 and the Planning and Development Regulations 2001 in order to transpose into Irish Law the provisions of EIA Directive 2014/52/EU.

Schedule 5 (Part 1 and Part 2) of the Planning and Development Regulations 2001, as amended, transposes Annex I and Annex II to the amended EIA Directive.

The requirement for an EIAR to be prepared for the Proposed Project relates to the exceedance of the threshold related to the recontouring of rural land holdings.

The Proposed Project requires the creation of level platforms to facilitate the installation of equipment, plant and buildings. As such the cut and fill activities related to the BESS compound and the main temporary construction compound measures an area of 6.2 hectares. Additionally, the substation compound will also be levelled and measures an area of 0.72 hectares.

The combined earthworks activities associated with the Proposed Project total 6.92 hectares, resulting in the exceedance of the 5 hectares threshold prescribed under the Planning and Development Regulations 2001, as amended, Schedule 5, Part 2, Paragraph 1(a) [Agriculture, Silviculture and Aquaculture], reproduced below:

*1(a) "Projects for the restructuring of rural land holdings, undertaken as part of a wider proposed development, and not as an agricultural activity that must comply with the European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011, where the length of field boundary to be removed is above 4 kilometres, or where re-contouring is above 5 hectares, or where the area of lands to be restructured by removal of field boundaries is above 50 hectares".*

Where a class set out in Schedule 5, Part 2, exceeds the relevant threshold, a mandatory EIAR is required.

There is no legal definition of what comprises re-contouring for the purposes of this class. However, given the extent of excavation and levelling of lands across and area in excess of the 5 hectare threshold specified under Schedule 5, Part 2, Paragraph 1(a) [as stated above], on a precautionary basis, an EIAR has been prepared and EIA is required.

Article 5 of the EIA Directive provides where an EIA is required, the developer shall prepare and submit an environmental impact assessment report (EIAR). The information to be provided by the developer shall include at least:

a. a description of the project comprising information on the site, design, size and other relevant features of the project;
b. a description of the likely significant effects of the project on the environment;
c. a description of the features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;

d. a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, considering the effects of the project on the environment;
e. a non-technical summary of the information referred to in points (a) to (d); and
f. any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

Whilst the relevant Schedule 5, Part 2, Paragraph 1(a) has triggered the requirement for EIA, out of an abundance of caution this EIAR is an assessment of the *whole project* and not of the rural restructuring in combination with the wider elements of the project.

This EIAR describes the receiving environment, assesses the likely significant effects of the Proposed Project on the receiving environment and proposes mitigation measures to avoid or reduce these effects as well as appropriate monitoring to ensure the efficacy of such mitigation measures. The function of the EIAR is to provide information to allow the competent authority to conduct the EIA of the Proposed Project.

## 1.9 Brief Project Description

The Proposed Project will comprise of the following elements to generate renewable electricity, facilitate electricity storage, control and alter electricity voltages, and connect this electricity to the transmission network. The different elements of the Proposed Project are described herein and further detailed in Chapter 5 –*Description of Development.* The Applicant is seeking planning approval for a 40 year operational life for Shelburne Energy Farm.

The Proposed Project will comprise of the following development;

**A solar energy farm** consisting of

- Photovoltaic (PV) panels on ground mounted frames, fixed in place using earth screws or driven mini-piles, with a maximum height of 4m above ground level, and a minimum ground clearance of 1.0m above ground level, across three separate land parcels referred to as Array Areas A, B and C providing 92.68 MWp (peak electricity generation under optimal conditions);
- Inverter units incorporated into the PV support structures;
- 17 no. transformer centres each measuring approximately 6.1m L x 2.5m W x 3.1m H;
- Underground electrical cable ducting between solar array areas A, B and C, connecting to the future proposed 220kV substation, including underground connections across local roads and 2no. wooden overhead electric poles, one placed on either side of the Tellarought River to facilitate its crossing;
- 4no. meteorological stations.

**A Battery Energy Storage System** (BESS) providing 54.8MWac of electricity storage for a two-hour duration, secured with 2.6m high palisade fencing and gates, and containing:

- 79no. of containerised battery storage modules (measuring approximately 6.82m length, 2.44m wide and 2.89m high);
- 19no. of containerised transformer and Power Conditioning Units (measuring approximately 6.82m length, 2.44m wide and 2.89m high) and ancillary equipment;
- 8.5m high acoustic barrier for noise attenuation around the BESS compound;
- Well and pump house to supply 2no. fire fighting tanks for Battery Energy Storage System compound and

**All associated development** including widening of existing field entrance from local road L - 8059-1 to serve the solar array and BESS in Area A and vegetation clearance at all other existing site entrances to provide sight lines, temporary construction compounds (one in each solar array area), 2m high perimeter fencing fitted with mammal passes and security gates, pole mounted CCTV system, lighting, site drainage, fire water tanks, use of existing field entrances for access for construction and operation, internal access tracks, recontouring of land and landscaping, and all other works required to facilitate the proposed development.

The proposed 220kV substation compound and grid connection will be the subject of a separate planning application to An Coimisiún Pleanála under section 182A of the Planning and Development Act 2000 as amended. This associated development will consist of:

- A substation compound measuring an area of approximately 1.0 hectare which will accommodate the following:
  - 1no. Air Insulated Switchgear (AIS) securely fenced compound, which includes 1no.control building (9m L x 7.5m W x 4m H), 1no. transformers, cable sealing ends and associated AIS equipment;
  - 1no. Gas Insulated Switchgear (GIS) securely fenced compound, which includes a 220kV GIS building (49m L x 18.5m W x 17m H) housing GIS equipment;
- A grid cable connection from the GIS building to the existing 220kV overhead line circuit to Great Island, comprising 2no. 220kV underground cable circuits measuring approximately 2.9km in length;
- 2no. Line Cable Interface Masts (LCIMs) and stringing of new conductor to connect to an existing 220kV overhead line circuit to Great Island; and,
- All associated development including lighting, substation compound site drainage, effluent holding tank, well water supply for substation, internal access circulation area, lightning rods, lighting, dismantling and removal of 1no. existing 220kV overhead line tower and all other works required to facilitate the proposed development.

## 1.10 Structure of this EIAR

The EIAR for the Proposed Project is presented in five volumes, as follows:

- **Volume 1 – Non-Technical Summary**: This summarises the findings of the EIAR in a clear, accessible format that uses non-technical language and supporting graphics. The Non-Technical Summary describes the Proposed Project, summarises the baseline environment, potential impacts and mitigation measures, and relevant topics of the EIAR in a manner that can be easily understood by the general public;
- **Volume 2 – Main Report**: This includes introductory chapters in addition to 'assessment' chapters for each environmental topic in accordance with Annex IV of the EIA Directive. The front-end chapters provide the relevant Proposed Project context while the assessment chapters provide a description of the relevant environmental aspects, and likely significant impacts, with cumulative impacts from other developments in combination with the predicted impacts of the Proposed Project, and summary chapters provided thereafter;
- **Volume 3 – Appendices**: This provides the technical reports and information that support and are cross-referenced within Volume 2; and
- **Volume 4 – Photomontages & Glint and Glare Assessment**: This provides the photomontages that support Chapter 12 The Landscape, within Volume 2.

The overall structure of the EIAR, with a further breakdown of the structure of this Volume (Volume 2) is provided in Table 1.2.

**Table 1.2: EIAR Volume 2 Structure**

| Chapter | Chapter Title | Chapter Description |
|---|---|---|
| 1 | Introduction | Provides an overview of the purpose, structure and scope of the report. |
| 2 | Stakeholder Engagement | Details the informal consultation undertaken with stakeholders and their feedback on the proposed project. |
| 3 | EIA Methodology | Sets out the methodology undertaken in the EIAR. |
| 4 | Reasonable Alternatives Considered | Sets out the need for the Proposed Project. Describes and evaluates the reasonable alternatives studied by the developer. Sets out the justification for the option chosen with consideration of the effects of the Proposed Project on the environment. |
| 5 | Description of Development | Describes the design, scale and size of the Proposed Project. Provides an overview of the location and wider setting of the proposed project. |
| 6 | Population and Human Health | Provides an assessment of the receiving environment in terms of population and human health and potential impact on humans as a result of the proposed project. |
| 7 | Biodiversity | Describes the receiving environment in terms of existing species and habitats. Assesses potential impacts on biodiversity and proposes relevant mitigation measures. |
| 8 | Land, Soils & Hydrogeology | Provides a review of the land, soils and hydrogeology receiving environment and assesses potential impacts on soil and hydrogeology and impacts in relation to land take. Recommended mitigation measures are stated. |
| 9 | Surface water resources and Flooding | Describes the receiving water environment, the potential impact of the proposed Project on water quality and flooding; and recommends mitigation measures. |
| 10 | Air Quality | Provides an overview of the receiving air quality environment, describes the impacts on air quality related to the Proposed Project and recommends appropriate mitigation measures. |
| 11 | Noise and Vibration | Provides an assessment of the receiving noise environment and outlines sensitive receptors vulnerable to potential noise or vibration impacts that may arise as a result of the Proposed Project. |
| 12 | Landscape | Describes the receiving landscape and visual environment, potential impacts to the landscape character and viewpoints and recommends mitigation measures. |
| 13 | Archaeology, Architectural and Cultural Heritage | Provides an assessment of the Proposed Project, considering potential impacts to cultural heritage assets, such as architectural and archaeological heritage, and proposes mitigation measures. |
| 14 | Roads, Traffic and Transportation | Outlines the receiving traffic environment and describes potential impacts on local roads that may arise due to construction and operational traffic. |
| 15 | Material Assets and Waste Management | Describes existing services, waste and infrastructural service requirements by the Proposed Project. Describes potential impacts to utilities as a result of the Proposed Project. |
| 16 | Climate (Carbon and Resilience) | This chapter of the EIAR identifies, describes and presents an assessment of the eventual significant effects of the Proposed Project on climate. This chapter describes the receiving climatic environment, the vulnerability of the Proposed Project to climate change and recommends resilience measures with regard to the Proposed Project. |
| 17 | Major Accidents and Disasters | Identifies and assesses the likelihood and potential impacts to the environment and population arising from the vulnerability of the Proposed Project to risks of major accidents and / or natural disasters. |

| Chapter | Chapter Title | Chapter Description |
|---|---|---|
| 18 | Interactions of Effects | Provides an overview of potential interactions among environmental factors and their cumulative impact as a result of the Proposed Project. |
| 19 | Summary of Mitigation and Monitoring | Sets out the mitigation and monitoring measures proposed throughout the various chapters for ease of reference. |

## 1.11 Competency of EIAR Experts

Mott MacDonald is a multidisciplinary consultancy with over 20 years' experience of undertaking complex and challenging environmental impact assessments and of writing environmental impact assessment reports for a wide range of projects. These include some of the Ireland's largest infrastructure, engineering and development projects. Mott MacDonald maintains high professional standards amongst staff both individually and across technical areas of practice.

Mott MacDonald is a corporate member of the Institute of Environmental Management and Assessment and holds its EIA Quality Mark. The Quality Mark Scheme allows organisations that lead the co-ordination of statutory EIAs to make a commitment to excellence in their EIA activities and have this commitment independently reviewed. This Quality Mark Scheme is a clear indication that that Mott MacDonald can fully demonstrate the requirements for a 'competent expect' as outlined in the EPA's 'Guidelines on the Information to be contained in Environmental Impact Assessment Report' (2022).

Individually Mott MacDonald's technical staff are subject to annual performance reviews which evaluate their Continued Professional Development. As a business Mott MacDonald maintains technical "Practices" which are internal professional networks that span organisational and geographical boundaries. These help to maintain high professional standards across technical disciples as well as facilitating contribution to the wider development of the Environmental Consulting industry. Specialist consultants have also been commissioned to provide support in the preparation of the EIAR. The credentials and competencies of all respective EIAR contributors is provided in Appendix 1.1 of this EIAR.