



# Environmental Impact Assessment Report

## Volume 1 – EIAR Non-Technical Summary

Prepared by: AWN Consulting, April 2026

Prepared for: Kilshane Energy Limited

# TABLE OF CONTENTS

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<b>TABLE OF CONTENTS</b>	<b>1-1</b>
<b>LIST OF FIGURES</b>	<b>1-5</b>
<b>1. INTRODUCTION</b>	<b>1-6</b>
1.1 Proposed Development.....	1-6
1.2 Relevant Legislative Requirement for Environmental Impact Assessment .....	1-6
1.3 Format and Structure of this EIA Report .....	1-6
1.4 Description Of Effects .....	1-6
1.5 Additional Assessments .....	1-7
<b>2. DESCRIPTION OF THE PROPOSED DEVELOPMENT</b>	<b>2-8</b>
2.1 Introduction.....	2-8
2.2 Description of the Existing Development Site .....	2-8
2.3 Characteristics of the Proposed Development.....	2-9
2.4 Description Of Construction.....	2-11
2.4.2 Potential Impacts and Mitigation Measures During Construction and Commissioning.....	2-11
2.5 Operation Of the Proposed Development .....	2-12
2.5.1 Potential Impacts and Mitigation Measures During Operations.....	2-13
2.6 Related Development and Cumulative Impacts.....	2-13
<b>3. ALTERNATIVES</b>	<b>3-14</b>
3.1 Introduction.....	3-14
3.2 Do Nothing Alternatives.....	3-14
3.3 Alternative Project Locations.....	3-14
3.4 Alternative Layout/Design.....	3-14
3.5 Alternative Processes and Technologies.....	3-15
3.6 Alternative Mitigation .....	3-15
3.7 Alternative Future 400 kV Grid Connection .....	3-16
3.8 Conclusions .....	3-16
<b>4. POPULATION AND HUMAN HEALTH</b>	<b>4-17</b>
4.1 Introduction.....	4-17
4.2 Baseline Environment .....	4-17
4.3 Potential Impacts of the Proposed Development .....	4-18
4.3.1 Construction Phase .....	4-18
4.3.2 Operational Phase.....	4-19
4.4 Mitigation and Residual Effects (Post-Mitigation).....	4-20
4.4.1 Construction Phase .....	4-20
4.4.2 Operational Phase.....	4-20
4.5 Cumulative Impact of the Proposed Development .....	4-21
4.5.1 Construction Phase .....	4-21
4.5.2 Operational Phase.....	4-21
<b>5. LAND, SOILS AND GEOLOGY</b>	<b>5-23</b>
5.1 Introduction.....	5-23
This chapter of the EIAR has been prepared by AWN Consulting Ltd. and assesses and evaluates the likely significant impacts of the proposed development on the land, soil and geological aspects of the site and surrounding area. ....	5-23
5.2 Baseline Environment .....	5-23
5.3 Potential Impacts of the Proposed Development .....	5-23

5.3.1	Construction Phase .....	5-23
5.3.2	Operational Phase.....	5-23
<b>5.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation) .....</b>	<b>5-24</b>
5.4.1	Construction Phase .....	5-24
5.4.2	Operational Phase.....	5-24
<b>5.5</b>	<b>Cumulative Impact of the Proposed Development .....</b>	<b>5-24</b>
5.5.1	Construction Phase .....	5-24
5.5.2	Operational Phase.....	5-25
<b>6.</b>	<b>HYDROLOGY AND HYDROGEOLOGY .....</b>	<b>6-26</b>
<b>6.1</b>	<b>Introduction.....</b>	<b>6-26</b>
<b>6.2</b>	<b>Baseline Environment .....</b>	<b>6-26</b>
<b>6.3</b>	<b>Potential Impacts of the Proposed Development .....</b>	<b>6-26</b>
6.3.1	Construction Phase .....	6-26
6.3.2	Operational Phase.....	6-27
<b>6.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation) .....</b>	<b>6-27</b>
6.4.1	Construction Phase .....	6-27
6.4.2	Operational Phase.....	6-27
<b>6.5</b>	<b>Cumulative Impact of the Proposed Development .....</b>	<b>6-28</b>
6.5.1	Construction Phase .....	6-28
6.5.2	Operational Phase.....	6-28
<b>7.</b>	<b>BIODIVERSITY .....</b>	<b>7-29</b>
<b>7.1</b>	<b>Introduction.....</b>	<b>7-29</b>
<b>7.2</b>	<b>Baseline Environment .....</b>	<b>7-29</b>
<b>7.3</b>	<b>Potential Impacts of the Proposed Development .....</b>	<b>7-29</b>
7.3.1	Construction Phase .....	7-29
7.3.2	Operational Phase.....	7-30
<b>7.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation) .....</b>	<b>7-30</b>
7.4.1	Construction Phase .....	7-30
7.4.2	Operational Phase.....	7-30
<b>7.5</b>	<b>Cumulative Impact of the Proposed Development .....</b>	<b>7-30</b>
7.5.1	Construction Phase .....	7-30
7.5.2	Operational Phase.....	7-31
<b>8.</b>	<b>AIR QUALITY .....</b>	<b>7-32</b>
<b>8.1</b>	<b>Existing Environment.....</b>	<b>7-32</b>
<b>8.2</b>	<b>Impact Assessment.....</b>	<b>7-32</b>
8.2.1	Do Nothing Scenario .....	7-32
8.2.2	Construction Phase .....	7-32
8.2.3	Operational Phase.....	7-33
<b>8.3</b>	<b>Mitigation.....</b>	<b>7-33</b>
8.3.1	Construction Phase .....	7-33
8.3.2	Operational Phase.....	7-33
<b>8.4</b>	<b>Residual Effects .....</b>	<b>7-33</b>
<b>8.5</b>	<b>Monitoring .....</b>	<b>7-33</b>
<b>8.6</b>	<b>Cumulative Effects .....</b>	<b>7-34</b>
<b>9.</b>	<b>CLIMATE .....</b>	<b>9-35</b>
<b>9.1</b>	<b>Introduction.....</b>	<b>9-35</b>
<b>9.2</b>	<b>Existing Environment.....</b>	<b>9-35</b>
<b>9.3</b>	<b>Impact Assessment.....</b>	<b>9-35</b>
9.3.1	Do Nothing Scenario .....	9-35
9.3.2	Greenhouse Gas Assessment .....	9-35

9.3.3	Climate Change Risk Assessment .....	9-36
<b>9.4</b>	<b>Mitigation</b> .....	<b>9-36</b>
9.4.1	Construction Phase .....	9-36
9.4.2	Operational Phase.....	9-36
<b>9.5</b>	<b>Residual Effects</b> .....	<b>9-37</b>
<b>9.6</b>	<b>Monitoring</b> .....	<b>9-37</b>
<b>9.7</b>	<b>Cumulative Effects</b> .....	<b>9-37</b>
<b>10.</b>	<b>NOISE AND VIBRATION</b>	<b>10-38</b>
<b>10.1</b>	<b>Baseline Environment</b> .....	<b>10-38</b>
<b>10.2</b>	<b>Potential Impacts of the Proposed Development</b> .....	<b>10-38</b>
10.2.1	Construction Phase .....	10-38
10.2.2	Operational Phase.....	10-38
<b>10.3</b>	<b>Cumulative Impact of the Proposed Development</b> .....	<b>10-38</b>
10.3.1	Operational Phase.....	10-38
<b>11.</b>	<b>LANDSCAPE AND VISUAL ASSESSMENT</b>	<b>11-39</b>
<b>11.1</b>	<b>Introduction</b> .....	<b>11-39</b>
<b>11.2</b>	<b>Baseline Environment</b> .....	<b>11-39</b>
<b>11.3</b>	<b>Potential Impacts of the Proposed Development</b> .....	<b>11-40</b>
11.3.1	Assessment of Receptor Sensitivity .....	11-40
11.3.2	Construction Phase .....	11-41
11.3.3	Operational Phase.....	11-42
<b>11.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation)</b> .....	<b>11-43</b>
11.4.1	Mitigation Measures .....	11-43
11.4.2	Residual Impacts .....	11-44
<b>11.5</b>	<b>Cumulative Impact of the Proposed Development</b> .....	<b>11-45</b>
11.5.1	Landscape.....	11-45
11.5.2	Visual.....	11-45
<b>12.</b>	<b>ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE</b>	<b>12-47</b>
<b>12.1</b>	<b>Introduction</b> .....	<b>12-47</b>
<b>12.2</b>	<b>Baseline Environment</b> .....	<b>12-47</b>
<b>12.3</b>	<b>Potential Impacts of the Proposed Development</b> .....	<b>12-47</b>
12.3.1	Construction Phase .....	12-47
12.3.2	Operational Phase.....	12-47
<b>12.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation)</b> .....	<b>12-48</b>
12.4.1	Construction Phase .....	12-48
12.4.2	Operational Phase.....	12-48
<b>12.5</b>	<b>Cumulative Impact of the Proposed Development</b> .....	<b>12-48</b>
12.5.1	Construction Phase .....	12-48
12.5.2	Operational Phase.....	12-48
<b>13.</b>	<b>TRAFFIC AND TRANSPORTATION</b>	<b>13-49</b>
<b>13.1</b>	<b>Introduction</b> .....	<b>13-49</b>
<b>13.2</b>	<b>Baseline Environment</b> .....	<b>13-49</b>
<b>13.3</b>	<b>Potential Impacts of the Proposed Development</b> .....	<b>13-49</b>
13.3.1	Construction Phase .....	13-49
13.3.2	Operational Phase.....	13-49
<b>13.4</b>	<b>Mitigation and Residual Effects (Post-Mitigation)</b> .....	<b>13-50</b>
13.4.1	Construction Phase .....	13-50
13.4.2	Operational Phase.....	13-50
<b>13.5</b>	<b>Cumulative Impact of the Proposed Development</b> .....	<b>13-50</b>

<b>14. MATERIAL ASSETS - UTILITIES</b>	<b>14-52</b>
14.1 Introduction.....	14-52
14.2 Baseline Environment .....	14-52
14.3 Potential Impacts of the Proposed Development .....	14-52
14.3.1 Construction Phase .....	14-52
14.3.2 Operational Phase.....	14-53
14.4 Mitigation and Residual Effects (Post-Mitigation).....	14-53
14.4.1 Construction Phase .....	14-53
14.4.2 Operational Phase.....	14-54
14.5 Cumulative Impact of the Proposed Development .....	14-54
14.5.1 Construction Phase .....	14-54
14.5.2 Operational Phase.....	14-54
<b>15. MATERIAL ASSETS – WASTE MANAGEMENT</b>	<b>15-55</b>
1.1 Introduction.....	15-55
1.2 Potential Impacts and Mitigation Measures of the Proposed Development.....	15-55
1.2.1 Construction Phase .....	15-55
1.2.2 Operational Phase.....	15-55
1.3 Residual Effect of the Proposed Development.....	15-55
1.3.1 Construction Phase .....	15-55
1.3.2 Operational Phase.....	15-55
1.4 Cumulative Impact of the Proposed Development .....	15-56
1.4.1 Construction Phase .....	15-56
1.4.2 Operational Phase.....	15-56
15.1.1 Decommissioning Phase .....	15-56
<b>16. INTERACTIONS</b>	<b>16-57</b>

## LIST OF FIGURES

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Figure 2-1 Site Layout Plan

2-10

# 1. INTRODUCTION

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## 1.1 Proposed Development

This Non-Technical Summary (NTS) has been prepared to accompany the Environmental Impact Assessment (EIA) Report. This Environmental Impact Assessment Report (EIAR) has been prepared in respect of the Kilshane Phase 2 development (hereinafter referred as 'Proposed Development'), which comprises the construction of two additional gas turbines with a total output of 680 Megawatts (MW) to the already permitted Gas Turbine Power Generation Station at Kilshane Road, Kilshane, Finglas, Dublin 11. The applicant for the Proposed Development is Kilshane Energy Ltd (hereinafter referred as 'the Applicant').

## 1.2 Relevant Legislative Requirement for Environmental Impact Assessment

This EIA Report has been prepared in accordance with the most relevant guidance and legislation, including the following:

- ▶ EIA Directive (2011/92/EU) as amended by EIA Directive (2014/52/EU);
- ▶ Planning and Development Act 2000 (as amended);
- ▶ Planning and Development Regulations 2001 (as amended);
- ▶ *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* (Department of Housing, Planning and Local Government, 2018);
- ▶ *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022);
- ▶ *European Commission, Environmental Impact Assessment of Projects Guidance on Scoping* (Directive 2011/92/EU as amended) (European Commission, 2017);
- ▶ *European Commission, Environmental Impact Assessment of Projects Guidance on Screening* (Directive 2011/92/EU as amended) (European Commission, 2017); and
- ▶ *Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017)

## 1.3 Format and Structure of this EIA Report

This EIAR has been laid out using the grouped format structure, the report examines each environmental factor in a separate chapter (the chapters are listed in Table 1.2 of Chapter 1). These EIAR chapters have been prepared by suitably qualified expert(s) and have considered the construction and operational phases of the Proposed Development under the following headings:

- ▶ Assessment Methodology;
- ▶ Receiving Environment;
- ▶ Characteristics of the Proposed Development;
- ▶ Potential Impacts of the Proposed Development;
- ▶ Mitigation Measures;
- ▶ Monitoring or Reinstatement Measures;
- ▶ Residual Impacts of the Proposed Development; and
- ▶ Cumulative Impacts of the Proposed Development

## 1.4 Description Of Effects

The quality, magnitude and duration of potential impacts are defined in accordance with the criteria provided in the *Guidelines on Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022). This criterion is duplicated in Table 1.3 of Chapter 1.

## 1.5 Additional Assessments

The additional reports and/or assessments required under Legalisation or EU Directives other than the EIA Directive in respect of the Proposed Development are listed below.

- ▶ **Appropriate Assessment Screening Report** has been completed by Altemar pursuant to the Habitats and Birds Directive (92/43/EEC and 79/409/EEC).
- ▶ **Water Framework Directive Assessment** has been completed by AWN pursuant to the Water Framework Directive (2000/60/EC).
- ▶ **Landscape Plan** - prepared by RMDA.
- ▶ **Preliminary Construction Management Plan (CEMP)** prepared by Waterman Moylan.
- ▶ **Preliminary Construction Traffic Management Plan (CTMP)** prepared by Waterman Moylan.
- ▶ **Traffic and Transport Assessment (TTA)** prepared by Waterman Moylan.
- ▶ **Travel Plan** prepared by Waterman Moylan.
- ▶ **Resource Waste management Plan** prepared by AWN

The following will be required upon commissioning of the Proposed Development.

**Industrial Emissions Directive** - The Permitted Development is regulated by an existing EPA Industrial Emissions (IE) Licence reference P1208-01, which sets out limits and monitoring requirements for noise, air, and water emissions from the Kilshane site. It is anticipated that a licence review will be required to reflect the design changes at the site resulting from the Proposed Development.

## 2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

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### 2.1 Introduction

This chapter presents the description of the Proposed Development comprising information on the site, design, size and other relevant features of the proposed development. The scope of this chapter aligns with the relevant legislation and guidance which comprises the following:

- ▶ EIA Directive (2011/92/EU), as amended by the 2014 EIA Directive (2014/52/EU) (herein referred to as the EIA Directive);
- ▶ European Commission 'Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report' (2017); and
- ▶ EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (2022) (herein referred to as the EPA EIA Report Guidelines 2022).

This guidance advises that description of the existence of the project should define all aspects of the proposed lifecycle of the facility, including:

- ▶ Description of Construction;
- ▶ Description of Commissioning;
- ▶ Operation of the Project;
- ▶ Changes to the Project; and
- ▶ Description of Other Related Projects.

The description is not exhaustive, and as such the EIA Report should be read in conjunction with the full application package.

### 2.2 Description of the Existing Development Site

The Kilshane Energy site is located at Kilshane, Dublin 11, west of the N2 Primary Road and approximately 2 km north-west of the M50. The Proposed Development area exists at present is mostly greenfield and bareground, with tree lines existent along the Kilshane site boundary. The site's topography generally slopes from west to east. The Proposed Development redline area will extend across 5.22 hectares (ha) and will form part of a larger landholding associated with the Kilshane site. The overall ownership area for the Kilshane site, inclusive of the Proposed Development, amounts to 27.04 ha.

At present, the Proposed Development site remains an undeveloped greenfield; however, construction of the previously permitted Phase 1 is anticipated to commence in the near future. The permitted Kilshane Phase 1 will be constructed in advance of the Proposed Development associated with this application. Accordingly, the baseline for the 'existing infrastructure' will be taken as defined and approved under the Permitted Development, together with the proposed amendments currently under consideration. Existing infrastructure will include, but will not be limited to:

- ▶ A Gas Turbine Power Generation Station with an output of up to 293 Megawatts and with 1 no. Gas Turbine and a 28 m high Exhaust Stack partially enclosed by a 12 m high acoustic wall.
- ▶ A single storey Admin Building and Warehouse, a single storey Packaged Electronic/Electrical Control Compartment (PEECC), a single storey Continuous Emission Monitoring System (CEMS) Shelter
- ▶ Fuel Oil Tank and Raw/Fire Water Tank
- ▶ Miscellaneous plant equipment.
- ▶ Internal road networks
- ▶ Improved and realigned Kilshane Road (L3120) with the provision of new footpaths, off-road cycle ways, and a new roundabout with access to the Kilshane site.

- ▶ Private internal road network providing for vehicular, cyclist and pedestrian access to serve the development.
- ▶ 26 no. car parking spaces, including 1 no. disabled persons parking space and 2 no. EV electrical charging points, along with 20 sheltered bicycle parking spaces.
- ▶ Hard and soft landscaping works, tree planting and boundary treatments including 3 m high security fence along Kilshane Road and the perimeter of the subject site boundary.
- ▶ Adequate drainage systems including on-site foul sewer pumping station and underground surface water attenuation areas.

The nearest waterbody to the Proposed Development is the Huntstown Stream located to the south c. 30m from the site boundary. The nearest sensitive receptors to the Proposed Development site are the dwellings located approximately 210m - 320m to the north-west, north-east and east of the site.

### 2.3 Characteristics of the Proposed Development

The Proposed Development will be a continuation of the permitted fast start peaking Gas Turbine Power Plant and will provide two additional turbines for an increased energy production capacity with an output of 680 Megawatts (MW). The power produced by the proposed and permitted turbines will be exported to the EirGrid transmission network.

In line with the submitted site notice, the Proposed Development will include:

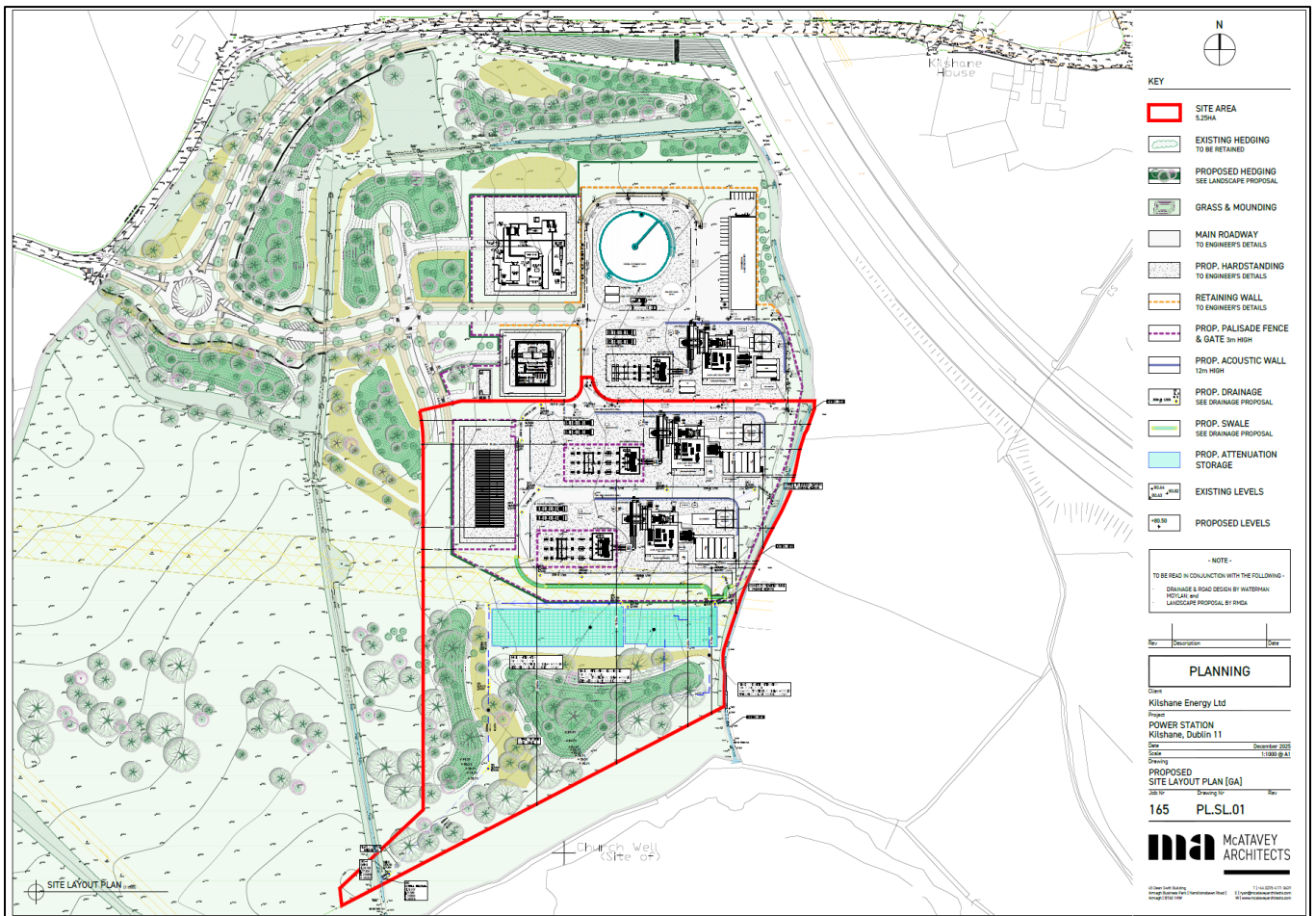
- ▶ Construction of 2 no. Gas Turbines, with an output of up to 340 Megawatts (MW) each, along with ancillary structures and equipment associated with each of the two turbines. Each of the turbines will have an exhaust stack with a height of c. 28m.
- ▶ Adjacent to each of the turbines, the development will also comprise 1 no. single storey Packaged Electrical and Electronic Control Centre (PEECC); fan cooler systems; 1 no. single storey Continuous Emission Monitoring System (CEMS) Shelter, and associated plant and equipment.
- ▶ Adjacent to each of the gas turbines, the development includes 2 no. Air Insulated Substations (AIS) to house transformers and electrical equipment within fenced compounds.
- ▶ The proposed development will be bound to its northern and part of its eastern boundary by acoustic fencing.
- ▶ Construction of a 400kV GIS building and associated electrical equipment located to the northwest of the site, within a fenced compound.
- ▶ Provision of hard and soft landscaping works, tree planting and boundary treatments.
- ▶ Attenuation storage will be located to the southeast of the site, alongside the existing permitted attenuation storage.

The proposals will be provided on two areas of stone surfacing. Access and service roads are proposed. Additional planting is proposed across the site and all associated works. The development includes underground services, parking, lighting, and associated site development and excavation works, above and below ground, necessary to facilitate the development.

The operation of the proposed turbines will play a role in stabilising electricity supply during periods of heightened demand or potential shortages. The energy produced by the Proposed Development, along with the Permitted Development, will play a vital role in preventing power disruptions and enhancing electricity supply security, particularly when renewable energy generation capacity is not available.

Figure 2-1 illustrates the proposed overall site layout.

**Figure 2-1 Site Layout Plan<sup>1</sup>**



As per the Engineering Assessment Report, the surface water drainage strategy established for Permitted Development will be maintained for Proposed Development, with the surface water runoff catered by ditches, swales for excess flows and upsizing the underground attenuation. Stormwater will be attenuated in a series of underground modular tanks located on the southern side of the site, which have been upsized to cater for the permitted and proposed developments.

The Proposed Development will be reliant on the permitted Phase 1 foul water network and pumping station as the permitted foul scheme has been designed with the capacity to cater future developments.

The previously permitted water supply infrastructure at the Kilshane site has also been sized and designed to accommodate future developments as part of the site's masterplan including the Proposed Development. As such, the permitted infrastructure has sufficient capacity to cater for the minor increase in water demand resulting from Proposed Development.

The Proposed Development will not include new carparking spaces, and parking availability will remain as per Permitted Development with 26 no. car parking spaces including 1 no. disabled persons parking space and 2 no. EV electrical charging points. Parking will be available by the permitted Administration/Warehouse building, outside the Proposed Development redline.

<sup>1</sup> McATAVEY ARCHITECTS, drawing no. PL.SL.01

## **2.4 Description Of Construction**

### *2.4.1.1 Construction Staffing, Working Hours and Duration*

It is anticipated that the construction of the Proposed Development will be completed during will be completed during 07:00 to 19:00 Monday to Saturdays inclusive, no works will take place Sundays or public holidays.

During the construction of Phase 1, the site will accommodate approximately 200 construction staff. Once Phase 2 construction commences, staffing levels are expected to increase by an additional 50 personnel, bringing the total number of construction staff on-site to 250 during the peak overlapping period.

The construction of the proposed Gas Turbine Power Generation Station at Kilshane is planned to commence in the first quarter of 2027 and is expected to be completed by the third quarter of 2029, spanning approximately 30 months. The development is anticipated to become operational in the fourth quarter of 2029.

The construction of the permitted Phase 1 development is expected to occur from 2025 to 2028. Therefore, the construction of the Proposed Development is expected to overlap with the construction of Phase 1 from the first quarter of 2027 until 2028.

### *2.4.1.2 Establishment of Construction Services*

The construction compound will provide office, portable sanitary facilities, equipment storage, parking etc for contractors for the duration of the works. The construction compound will be fenced off for health and safety reasons so that access is restricted to authorised personnel only. All areas under construction will be fenced for security and safety purposes and temporary lighting supplied, as necessary.

Traffic management during construction will be in accordance with the Preliminary Construction Traffic Management Plan (CTMP) prepared by Waterman Moylan and included with this application.

### *2.4.1.3 Material Sourcing, Transportation and Storage*

Key materials will include steel, other metals, concrete, piping, electrical cabling, and process equipment. Where possible it is proposed to source general construction materials from the Fingal area to minimise transportation distances. Aggregate materials such as sands and gravels will be stored in clearly marked designated receptacles/areas within a secure area in the construction compound to prevent contamination. liquid materials will be stored within temporary bunded areas, doubled skinned tanks or bunded containers to prevent spillage.

### *2.4.1.4 Landscaping and Reinstatement*

Once the majority of the construction works are completed the landscaping will be completed in accordance with the specification of the project landscape architect (RMDA) and to the agreement with the local authority. RMDA have provided a landscape plan and strategy for the site which is provided with the planning documentation.

Landscaping plans have been optimized to incorporate all cut materials back into the site for final reinstatement and regrading, minimizing soil removal and ensuring environmental protection during earthworks.

## **2.4.2 Potential Impacts and Mitigation Measures During Construction and Commissioning**

The main potential impacts during the construction and commissioning phase which require mitigation are:

- ▶ Management of run-off water in terms of silt runoff, potential for construction leaks and temporary dewatering (see Chapter 6 (Hydrogeology and Hydrology) for further information on potential impacts and mitigation measures) and Chapter 7 (Biodiversity);
- ▶ Impacts on human beings in terms of nuisances relating to the air quality of the environs due to dust and other particulate matter generated (see Chapter 8 (Air Quality) for further information);
- ▶ Impacts on human beings in terms of nuisances due to plant noise and vibration from equipment (see Chapter 10 (Noise and Vibration) for further information on potential impacts and mitigation measures);
- ▶ Effects on the road network (due to construction workers and other staff attending site (see Chapter 13 (Traffic and Transportation) for further information on potential impacts and mitigation measures); and
- ▶ The generation of construction waste materials from excavation works and other construction waste (see Chapter 15 (Waste Management) for further information on potential impacts and mitigation measures).

#### **2.4.2.1 Construction Environmental Management Plan**

Waterman Moylan have prepared an *Preliminary Construction Environmental Management Plan (CEMP)* (2025). This outlines and explains the construction techniques and methodologies which will be implemented during construction of the Proposed Development. The CEMP includes emergency response procedures in the event of a spill, leak, fire or other environmental incident related to construction. Prior to commencement of construction, the CEMP will be updated to incorporate mitigation measures outlined in the EIA report as well as any subsequent planning conditions. This is an active document which is continuously updated to manage risk during the construction programme.

The CEMP will be implemented and adhered to by the Construction Contractor and will be overseen and updated as required if site conditions change by the Project Manager, Environmental Manager and Environmental Clerk of Works where relevant. All personnel working on the Site will be trained in the implementation of the procedures.

#### **2.4.2.2 Resource Waste Management Plan**

Chapter 15 contains a detailed description of waste management relating to construction of the Proposed Development. A site-specific Resource Waste Management Plan (RWMP) is included as Appendix 15.1 of this EIA Report. This RWMP will be implemented to ensure best practice is followed in the management of waste from the Proposed Development

## **2.5 Operation Of the Proposed Development**

Once operational, the Proposed Development will provide for additional power generation capacity and will play a vital role in preventing power disruptions and enhancing electricity supply security, particularly when renewable energy generation capacity is not available. During operational phase, the Proposed Development will follow a detailed Operational Environmental Management Plan (OEMP) that will be submitted to the written agreement of the Planning Authority, in line with the planning conditions imposed for Permitted Development.

The operation will be monitored and maintained by suitably qualified nominated site personnel, ensuring the development operates effectively, efficiently and in accordance with Kilshane procedures and IED Licence requirements. Once operational, the Proposed Development will require an additional 10 workers.

The proposed turbines are expected to operate intermittently throughout the year, with the expected scenario: Assumes each unit operates for 100 hours per year and conservative/maximum hours scenario: Assumes continuous operation of all units (24/7/365). Its operation will be contingent on dispatch instructions from EirGrid, the Transmission System Operator (TSO), who will determine the specific hours of operation based on real-time system requirements.

The turbines will also require quarterly testing/maintenance and may also operate in an emergency in liquid fuel mode for no more than 500 hours per turbine, per year.

The plant is designed to operate 365 days a year if required, based on the technology and abatement system selected.

The Proposed Development will operate within EPA licensed emission limits ensuring no environmental exceedances are expected to occur as a result of the additional turbines.

### **2.5.1 Potential Impacts and Mitigation Measures During Operations**

Once operational, the greatest potential for impacts with respect to the Proposed Development are nuisances as result of operational noise and air emissions which are dealt in detail in Chapters 8 (Air Quality) and 10 (Noise and Vibration). It is anticipated that Proposed Development operations will not have significant effect on traffic and waste production and will generate limited changes to other environmental factors.

Chapters 3 to 16 of this EIA Report assess the potential impact of the Proposed Development on the receiving environment. Please refer to each specialist chapter respectively.

## **2.6 Related Development and Cumulative Impacts**

As part of the assessment of the impact of the proposed development, account has been taken of relevant related developments that are currently permitted, or under construction within the area surrounding the Proposed Development site. The potential for cumulative impacts arising from these related projects has been addressed within each specialist chapter of this EIA Report (Chapter 4 – 15) and a list of relevant developments considered for this assessment is presented in Section 2.10 in Chapter 2.

## 3. ALTERNATIVES

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### 3.1 Introduction

This chapter provides an outline of the reasonable alternatives examined during the design phase. It sets out the main reasons for choosing the development as proposed, taking into account and providing a comparison on the environmental effects.

### 3.2 Do Nothing Alternatives

There is an established statement of need for all the various elements of the Proposed Development in Ireland within a national, regional, and local strategic planning context. In the event that the Proposed Development does not proceed, the specific need for additional gas-fired power generation capacity, as established in the *Policy Statement on Security of Electricity Supply* (Department of Climate, Energy, and the Environment, 2021) to support a renewable energy transition in the state would still exist. If the Proposed Development does not proceed, the site will remain as undeveloped greenfield, resulting in a neutral impact on the environment. The adjacent lands within the site ownership boundary will be developed for gas-fired power generation as permitted. Considering the site's strategic location in the Greater Dublin Area and current zoning for Heavy Industry (H1) under the Fingal County Development Plan 2022-2028, it is likely that the site would be developed for industrial purposes in the future. Therefore, opting for the 'do-nothing' scenario would be underutilizing this strategically positioned site, would not result in the opportunity for backup gas-fired power generation to support a renewables transition, and would contravene existing plans and policies.

### 3.3 Alternative Project Locations

The location of the Proposed Development was decided by a number of preceding plans, policies, permitted developments, and circumstances. The Proposed Development is an extension of the permitted gas power station development at Kilshane (Reg. Ref. FW22A/0204). With respect to environmental considerations including noise and visual impact, few locations were appropriate for large gas turbine station installations. The permitted development site was chosen based upon its zoning for heavy industry, proximity to connection points, and its availability as real estate. As a proposed continuation of the Permitted Development, alternative locations for the Proposed Development were not considered to be feasible, as this would require the construction of significant additional supporting infrastructure which would not otherwise have been required. The continuation of the permitted development is an efficient and strategic use of lands under the applicant's ownership, providing additional generation capacity without the need to develop a new site for heavy industry use.

### 3.4 Alternative Layout/Design

The project design team undertook a comprehensive design process to determine an effective and efficient layout for the Proposed Development, which has regard for the operation requirements, planning requirements, and the environmental sensitivities of the site and surrounding context.

An alternative layout option which situated a larger number of turbines was initially chosen and progressed through a design phase and submitted for planning permission under FCC Reg. Ref. 23A/0232. However, it was ultimately reasoned that the requirement of the design for new ancillary infrastructure presented an inefficient use of land and material resources, and the application was ultimately withdrawn in favour of the alternative option to extend the permitted development.

Alternative layouts for the Proposed Development were initially curtailed by the size requirements of the proposed turbines and GIS substation, the need for the additional turbines to connect to associated permitted infrastructure, the need to provide sufficient attenuation storage in line with the Greater Dublin Strategic Drainage Study guidance, and the need to avoid the existing overhead electricity cables traversing the site.

The design process was also influenced by environmental criteria including the need to maintain a compact site footprint and keep the development minor in scale, to preserve as far as possible mature screening vegetation and other ecological features within the site, to maximize the screening provided by the permitted and proposed developments in combination, and to allow space for new screening mounds and associated landscaping.

The chosen proposed layout's location of the turbines to the directly to the south of the permitted development ensures a compact site footprint while allowing for the location of 2 no. sufficiently sized underground attenuation tanks within the site boundary area to the south of the turbines.

### **3.5 Alternative Processes and Technologies**

In terms of the Proposed Development processes, the various layout options considered will generally necessitate the same power requirements, and result in the same waste and environmental emissions. The Proposed Development is guided by the applicant's standard specifications and the flexibility to select alternative processes is limited for this type of development as opposed to a stand-alone development.

The use of the chosen gas-turbine technology was determined in the design and planning phases of the permitted development; as an extension of the permitted development the selection of different gas turbine technologies was not considered feasible. The proposed Open-Cycle Gas Turbine technology was ultimately chosen for the Permitted Development and subsequently the Proposed Development because it is compliant with all necessary regulations, minimising the environmental impact and offered the best chance of success in the capacity market auction. While natural gas will be the primary fuel, fuel oil will be stored and used on site as an emergency backup fuel source in the event of an interruption to the gas supply.

Sustainable Urban Drainage Solutions (SUDS) measures including underground attenuation tanks and bioswales will be implemented along with significant planting and retention and augmentation of existing ecological features.

### **3.6 Alternative Mitigation**

The EIA process for the Proposed Development involved a team of specialists, each with expertise in a specific aspect of the environment. For each aspect of the environment, each specialist has considered the existing environment, likely impacts of the Proposed Development and reviewed feasible mitigation measures to identify the most suitable measures appropriate to the environmental setting of the Proposed Development. In making a decision on the most suitable mitigation measure the specialist has considered relevant guidance and legislation.

Where relevant, a comparison of environmental effects was made, and the specialist has reviewed the possible mitigation measures available and considered the use of the mitigation in terms of the likely residual impact on the environment. The four established strategies for mitigation of effects have been considered: avoidance, prevention, reduction and offsetting (not required in this development). Mitigation measures have also been considered based on the effect on quality, duration of impact, probability and significance of effects.

### **3.7 Alternative Future 400 kV Grid Connection**

The Proposed Development will require a separate and additional 400 kV grid connection. It is therefore anticipated that a separate planning application for the associated grid infrastructure will be submitted by the applicant at a later date.

At this stage of project development, the detailed design and final alignment of the grid connection have not yet been confirmed. However, a preliminary cable alignment has been identified and is illustrated in Section 3.7 of Chapter 3. This alignment is assessed as the only technically feasible connection option currently available to facilitate the Proposed Development and, as such, is the only route assessed within this EIAR with respect to potential cumulative effects. Alternative routes were not considered reasonable due to technical and network constraints.

### **3.8 Conclusions**

Based on the assessment of reasonable alternatives (in relation to location, scale, design, technology, mitigation) relevant to the Proposed Development and its specific characteristics as set out in this chapter, the selected site is considered to be a suitable location for the Proposed Development from an environmental, strategic, and planning perspective.

In conclusion, it is considered that the proposed site has capacity for development and is highly suitable for the Proposed Development.

## 4. POPULATION AND HUMAN HEALTH

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### 4.1 Introduction

This chapter has been prepared by AWN to assess the likely significant impacts on Population and Human Health in respect of the Proposed Development.

Human health should be considered in the context of environmental pathways which may affect health such as air quality, noise, water and soil quality. All can contribute to negative effects on human health by facilitating the transport of contaminants or pollutants. An evaluation of the effects of these pathways on health, by considering the accepted standards of safety in dose, exposure or risk of air quality and noise levels for example, is considered appropriate, as these standards have been arrived at via scientific and medical research. Where these topics are dealt with in further detail elsewhere in this EIA Report, the relevant chapters have been cross referenced in this Chapter to provide the Planning Authority with a context for their determination.

### 4.2 Baseline Environment

#### 4.2.1.1 Population Health Sensitivity

In a desk-based assessment of Population Health Sensitivity, the use of Electoral Divisions (ED) was used to analyse the population statistics within the study area. The area selected for the assessment of the impact on human health has been defined as the EDs that are either entirely contained within or partially within 1 km of the proposed development site. The Proposed Development site is in the Local Authority Area of Fingal County Council (FCC), and in the electoral division (ED) of The Ward (267158) and the Dubber (ED 267066) are within 1 km of the site. These two EDs are entirely located within the Republic of Ireland, County Fingal.

Overall, the two EDs within the study area have seen an overall growth in population between 2016 and 2022, with both EDs presenting a higher growth percentage when compared to average National rates. The Pobal HP Deprivation Index shows both EDs being 'Marginally Above Average', and with a lower age dependency ratio when compared to ROI, indicating a greater 'independent' population within the Study Area. The data indicates that the majority of the population on working age, implying a greater degree of self-sufficiency and resilience to change. The information available for the study area shows that a large proportion of the population (46.78% to 55.12%) describes their health status as 'Very Good' and a small proportion (0.65% to 0.96%) as 'Bad' or 'Very Bad'. The data shows that both EDs have a lower % of individuals with a disability overall than the national average, indicating that for most of the population within the study area there are relatively limited restrictions on daily activity. Taking these factors into consideration, it can be concluded that the population in the study area exhibits a relatively low sensitivity to change and having a Low population sensitivity.

#### 4.2.1.2 Location and Character of the Local Environment

While a general study area of ED within 1 km from the site location is included for population statistics, the wider area of 2.5 km from the site location has been used to inform the baseline description of the area. The Proposed Development site fully comprised within lands zoned to provide for heavy industry. As outlined in the Fingal County Development Plan 2023 – 2029 this zoning objective is characterized as: *"Facilitate opportunities for industrial uses, activities and processes which may give rise to land use conflict if located within other zonings. Such uses, activities and processes would be likely to produce adverse impacts, for example by way of noise, dust or visual impacts. HI areas provide suitable and accessible locations specifically for heavy industry and shall be reserved solely for such uses"*. The nearest sensitive receptors to the Proposed Development are the dwellings located approximately 210m - 320m to the north-west, north-east and east of the site.

The area is predominantly a mix of industrial, commercial and agricultural lands, characterized by a dispersed settlement pattern with the majority of residential units being single, standalone structures spread across the landscape. There are a number of industries, warehouse developments and commercial developments within 2.5km from the Proposed Development. There are only a few educational centres within the study area. There are no hospitals and emergency services in the study area.

Due to the largely industrial, commercial and agricultural nature of the surrounding environment, the study area is not particularly characterized by any recreational facilities or public green infrastructure.

In terms of landscape amenity, the development site exists at present is mostly greenfield and bare ground with tree lines existent along the Kilshane site boundary. The site's topography generally slopes from west to east.

There are three sites within the study area listed in the Record of Protected Structures for Fingal County, all of which are also listed in the Sites and Monuments Record. According to Chapter 12, none of these will be impacted, directly or indirectly, by the Proposed Development.

There are no Architectural Heritage sites located within the proposed site or in close proximity to the site. Dunsoghly Castle (DU014-005001-) is located c. 0.9 kilometers (km) to the northeast and will not be impacted by the Proposed Development, directly or indirectly.

The lands in the immediate vicinity of the site are similar in character. The Huntstown Quarry is located in close proximity to the south. The greater area is also characterized by the presence of commercial and industrial developments, road network and a few scattered residential dwellings.

There are no protected Recreational Waters or Bathing Waterbodies within the Study Area and nearest waterbody is the Huntstown Stream located to the south c. 30m from the site boundary. There are no Groundwater Source Protection Areas or Group Schemes within the Study Area.

The Proposed Development site is not at significant risk of any major accidents, hazards of natural disasters.

## 4.3 Potential Impacts of the Proposed Development

### 4.3.1 Construction Phase

The main potential impacts on population and human health from the Proposed Development are related to employment, potential for spills/leaks, air emissions, noise, visual, and traffic impacts:

- ▶ Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services and creating employment opportunities with a ***not significant, short-term and positive*** impact.
- ▶ During the construction stage, landscape character will be affected by increased construction traffic and the visible presence of construction rigs and cranes from various locations. Overall, without mitigation measures, the impacts during construction due to changes on the landscape and visual intrusion is considered to be ***negative, short-term***, ranging from ***imperceptible to moderate*** depending on the distance of the Proposed Development.
- ▶ A reduction in soil quality via historical or unmitigated pollutants entering the soil has the potential to lead to negative impacts on human health during construction. In the absence of mitigation measures the potential impacts to human health during the construction phase are ***negative, not significant and short-term***.
- ▶ The key elements of construction of the proposed development with potential impacts on populations and human health from air quality impacts are dust soiling effects, dust (PM<sub>10</sub> and PM<sub>2.5</sub>) emissions, engine emissions from construction traffic and changes in traffic flows on nearby road links. In the

absence of mitigation, dust impacts on Human Health are predicted to be *direct, short-term, negative* and *slight*.

- ▶ Noise levels during construction phase are predicted to cause *direct, short-term, negative* and *not significant* impacts to human health as a result of the Proposed Development.
- ▶ As detailed in Chapter 13 (Traffic and Transportation), during construction temporary local disruption to pedestrian, cyclists, and vehicular traffic particularly during the construction of the upgraded junction and also due to increased construction traffic on the road network. It is considered that the predicted increases in traffic during the construction phase will have a *not-significant, negative* and *short-term* impact on human health.
- ▶ The Kilshane site is classified as a Lower Tier Seveso establishment and is subject to the provisions of the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, S.I. No. 209 of 2015. As the development site is COMAH regulated, no impacts are expected with respect to Human Health during construction phase. There is a negligible risk of a landslide event occurring at the site and the residual risk for all flood sources is deemed 'extremely low' to 'low'. The potential effect is therefore *imperceptible*, and unlikely, respect of Major Accident Hazards or Natural Disasters on Population and Human Health during the Construction Phase of the Proposed Development.

### 4.3.2 Operational Phase

The main potential impacts on population and human health from the Proposed Development are related to employment, potential for spills/leaks, air emissions, noise, visual, and traffic impacts:

- ▶ Once operational, the Proposed Development will provide for additional power generation capacity and will play a vital role in preventing power disruptions and enhancing electricity supply security, particularly when renewable energy generation capacity is not available. This will result in a *positive, slight* and *long-term* impact in the area during the operational phase.
- ▶ Visual impacts and amenity impacts perceived by individual persons are highly subjective and difficult to characterise. The landscape character of the subject lands will be notably changed from its current largely undeveloped character to that of built environment. Overall, it is anticipated that impacts on human health impacts due to landscape changes will be no greater than *slight, negative* and *long-term*, while impacts on human health due to visual intrusion will be no greater than *moderate, negative, long-term*
- ▶ With reference to Chapter 5 (Land, Soils and Geology) and Chapter 6 (Hydrology and Hydrogeology), during the operational phase of the Proposed Development there is no potential for impact on human health and populations due to changes in land, soil, and geology and no potential for unmitigated off-site flooding as a result of the increased hardstanding areas due to the proposed design and drainage infrastructure proposed. In the absence of mitigation, the potential impacts are *neutral, imperceptible* and *long-term*.
- ▶ As outlined in Chapter 8 (Air Quality), a detailed air dispersion modelling of emissions (NO<sub>x</sub>, CO, SO<sub>2</sub> and particulate matter as PM<sub>10</sub> and PM<sub>2.5</sub>) from the Proposed Development determined that pollutant concentrations will be in compliance with the relevant limit values. Impact will be *direct, long-term, negative, not significant*.
- ▶ As detailed in Chapter 10 (Noise and Vibration), the main potential noise impacts associated with the operation of the Proposed Development are noises related to power plant equipment and additional vehicular traffic on public roads. The introduction of the Proposed Development will result in a change from the existing noise levels no greater than 1 dB for all locations. The expected health effect due to noise from the proposed development is classified as *neutral, not significant* and *long-term*. There is no vibration source from the routine operations of the development that would cause impacts at nearby noise-sensitive locations.
- ▶ An assessment of the additional traffic movements associated with the Proposed Development during the construction and operational phases is presented in Chapter 13 (Traffic and Transportation). The traffic modelling results show that development traffic will representing *neutral* and *not-significant* alterations to the junctions resulting in a neutral impact on human health.

- ▶ COMAH related impacts are considered not significant as the Significant Modifications Assessment undertaken for the site, to be submitted to the Health and Safety Authority (HSA), concluded that the proposed modification does not constitute a Significant Modification. The Kilshane site is COMAH regulated, therefore no impacts are expected with respect to Human Health during operations. There are no other COMAH sites located within Proposed Development study area that could impact the development site. There is a negligible risk of a landslide event occurring at the site and the residual risk for all flood sources is deemed 'extremely low' to 'low'. The potential effect is therefore **neutral, imperceptible, long-term**, and unlikely with respect to Major Accident Hazards and Natural Disasters on Population and Human Health during Operational Phase of the Proposed Development.

## 4.4 Mitigation and Residual Effects (Post-Mitigation)

### 4.4.1 Construction Phase

The mitigation measures to address the potential impacts on Population and Human Health from the construction phase of the Proposed Development and post-mitigation residual effects include:

- ▶ With reference to Chapter 11 (Landscape and Visual Impact), there are limited construction-stage mitigation measures as the site is well established and heavily screened from surrounding receptors. In this regard, there is no requirement for site hoarding or additional screening to screen the construction stage effects as much of the construction stage works will be heavily screened by the existing surrounding vegetation. The anticipated impacts on human health from changes to the local landscape and visual intrusion are expected to be no greater than **negative, slight, and short-term** for landscape changes, and **negative, moderate, and short-term** for visual intrusion.
- ▶ All mitigation measures outlined within the Chapter 5 (Land, Soils, Geology) and Chapter 6 (Hydrology) will be implemented in accordance with Construction Environmental Management Plan (CEMP), as well as any additional measures required pursuant to planning conditions which may be imposed. Impacts on the land, soils, geology and hydrological environment will be **short-term, imperceptible and neutral**
- ▶ As outlined in Chapter 8 (Air Quality), best practice dust mitigation measures will be implemented throughout the duration of the construction phase. The dust mitigation measures proposed in Chapter 8 will reduce dust emissions and thus dust-related human health effects and residual impact will be **short-term, direct, negative, localised and not significant**.
- ▶ As outlined in Chapter 10 (Noise and Vibration), the application of noise and vibration limits and limits on the hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. Due to the short-term duration of the work, the noise and vibration limits in place, this phase of work will not give rise to any significant health effects. With mitigation, impacts to human health due to noise and vibration as a result of the Proposed Development effects are **direct, short-term, negative and not significant**.
- ▶ The development will adopt off-peak arrival and departure times for the construction staff to ensure construction flows do not overlap with the surrounding road network peak periods. Construction will likely have a neutral and not significant impact on pedestrians and cyclists. Due to the proposed mitigation measures, the effect of the proposed development will be temporary to short-term and minimised during the construction phase.

### 4.4.2 Operational Phase

The mitigation measures to address the potential impacts on Population and Human Health from the operational phase of the Proposed Development and post-mitigation residual effects include:

- ▶ With reference to Chapter 11 (Landscape and Visual), the main mitigation-by-avoidance measure employed in this instance is the siting of the development in a robust landscape where the zoning aligns and where it is surrounded by other commercial and industrial developments of a similar scale. The Proposed Development will also avail of landscaping and planting measures associated with the

permitted development to its immediate north including earthen berms and substantial areas of native planting. During the operational phase all views will remain within acceptable levels of impact, with no further mitigation required. As a result, the anticipated impacts on human health from changes to the local landscape and visual intrusion are expected to be no greater than *moderate, neutral to negative*, and *long-term* for landscape changes, and *negative, imperceptible to moderate* and *long-term* for visual intrusion.

- ▶ There are no source pathway linkages to potable water supplies or water amenities. As such the **implementation** of the design measures will continue to ensure that the residual impacts during the operational phase in respect of the environmental factor of Soils, Geology, Hydrogeology and Hydrology is *imperceptible-neutral*.
- ▶ No additional mitigation measures are proposed for the operational phase of the Proposed Development. Air dispersion modelling has determined that concentrations of all pollutants are in compliance with the relevant ambient air quality standards. and, therefore, will not result in a significant impact on human health. The impacts to human health are predicted to be *direct, long-term, negative* and *not significant* impact on human health.
- ▶ Noise from external plant will be minimised by purchasing low noise generating equipment and incorporating appropriately specified in line attenuators for stacks and exhausts where necessary. A 12m noise barrier is also included in the project design. With due consideration as part of the detailed design process, this approach will result in the site operating well within the constraints of the best practice guidance noise limits that have been adopted as part of this detailed assessment. No further mitigation is deemed required as detailed in Chapter 10 (Noise and Vibration). Residual human health impact will remain as will continue to be *neutral*, and *long-term*.
- ▶ As outlined in Chapter 13 (traffic and Transportation), a Travel Plan will be implemented and developed on an ongoing basis with the triple objectives of promoting sustainability, enhancing public transport and reducing dependency on the use of the private car. A Transport Co-ordinator will be appointed by the developer as the main point of contact and coordinator of Travel Plan activities for monitoring and achieving sustainable travel targets. it is anticipated that the effects of the proposed development both on the local road network and on human beings will continue to be *neutral, imperceptible* and *long-term*.
- ▶ Once operational, the Proposed Development will form part of a COMAH regulated site which will be subject to the provisions of the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, S.I. No. 209 of 2015. As a COMAH regulated site, any potential effect is imperceptible, and unlikely in respect of major accident hazards and human health during the operational phase of the Proposed Development. Therefore, no specific mitigation measures are required. There are no significant potential impacts on Human Health from Major Accident Hazards and/or Natural Disasters; therefore, there are no residual impacts

## 4.5 Cumulative Impact of the Proposed Development

### 4.5.1 Construction Phase

The implementation of mitigation measures within each chapter and detailed in Section 4.6.1 of Chapter 4, as well as the compliance of granted developments with their respective planning permissions, will ensure there will be minimal to no cumulative potential for the assessed environmental factors (Land, Soils and Geology, Hydrology and Hydrogeology, Air Quality, Noise and Vibration, Landscape and Visual Impact, and Traffic and Transportation) during the construction phase of the Proposed Development and no significant cumulative impacts to human health.

### 4.5.2 Operational Phase

The implementation of mitigation measures within each chapter and detailed in Section 4.6.1 of Chapter 4, as well as the compliance of granted developments with their respective planning permissions, will ensure there will be minimal to no cumulative potential for the assessed environmental factors (Land, Soils and Geology, Hydrology and Hydrogeology, Air Quality, Noise and Vibration, Landscape and Visual Impact,

and Traffic and Transportation) during the operational phase of the Proposed Development and no significant cumulative impacts to human health.

## 5. LAND, SOILS AND GEOLOGY

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### 5.1 Introduction

This chapter of the EIAR has been prepared by Awn Consulting Ltd. and assesses and evaluates the likely significant impacts of the proposed development on the land, soil and geological aspects of the site and surrounding area.

### 5.2 Baseline Environment

The Proposed Development site is c. 13.56 hectares and comprises partly developed and partly greenfield land located south west of the N2 flyover intersection of Kilshane road and Kilshane Cross in the townland Kilshane/Piperstown, Dublin 11. The site is bounded by the N2 to the east, a licensed facility for power generation (also operated by Kilshane energy limited, licence no. (P1208-01) to the North, Huntstown quarry to the South and mostly agricultural land to the West. The Kilshane site is zoned under Fingal County Development Plan 2023 - 2029 under "HI - Heavy Industry", with objective to provide for provide for heavy industry

Based on consultation of historical maps the land has always been utilised for agriculture and site investigations confirmed no evidence of residual contamination to be present. Site investigations carried out in 2021 confirmed that low permeability glacial clays (Limestone Till Carboniferous (TLs) overlying limestone bedrock at variable depths from 1.5 to 3.7 metres below ground level (mbgl).

The bedrock geology is dominated by Calcareous shale and limestone conglomerates part of the Tober Colleen Formation (Rock Unit code: CDTOBE). The Huntstown Quarry (Site Code DF022) to the south is the closest audited geological heritage site.

Based on the TII methodology (2009) criteria for rating site importance of geological features, the importance of the bedrock and soil features at this site is rated as 'High importance' with high significance or value on a local scale. This is due to the existence of an existing quarry in the immediate vicinity of the subject site (Huntstown Quarry) which is located c. 0.2 km to the south of the site.

### 5.3 Potential Impacts of the Proposed Development

#### 5.3.1 Construction Phase

In the absence of mitigation measures, the construction phase presents potential for impact on soil/bedrock associated with the following activities:

- ▶ Excavation and infilling.
- ▶ Accidental spills and leaks of hydrocarbons from construction vehicles, oil storage for construction vehicles or alkaline water from cement works.

Without the consideration and employment of mitigation measures the potential impacts during the construction phase on land, soils and geology are **short-term, slight** and **negative**.

#### 5.3.2 Operational Phase

The Proposed Development will be required to operate in compliance with the requirements of an IED License. All pipelines will be above ground and fully contained and there is no additional bulk fuel storage required on site (previously permitted). There is no planned discharge to ground and drainage of all work and trafficked areas will be to stormwater drainage. As such there is a low potential for an in direct discharge following an on site vehicle leak etc to reach the underlying soil or geology.

It is noted that the land is zoned as "HI - Heavy Industry", with objective to provide for heavy industry however there will be a loss of greenfield as a result of the development. Increase in hardstanding will result in a local reduction of recharge to ground but no measurable impact on the underlying groundwater flow regime.

Without the consideration and employment of mitigation measures the potential impacts during the operation phase on land, soils and geology are *long-term, imperceptible and neutral*.

## 5.4 Mitigation and Residual Effects (Post-Mitigation)

### 5.4.1 Construction Phase

In order to reduce impacts on the land, soils and geological environment, the contractor will be obliged to work in compliance with a Construction Environmental management plan (CEMP) which includes a number of mitigation measures to be adopted as part of the construction works on site:

- ▶ Control of soil excavation
- ▶ Fuel and chemical handling
- ▶ Control of water during construction
- ▶ Daily and weekly visual inspections of silttraps/settlement tanks and surface water drains
- ▶ Regular auditing of construction/ mitigation measures and log keeping of such measures.

The predicted impact on the underlying geological environment during the construction phase will be *short-term, imperceptible and neutral*, while the magnitude of impact is considered **negligible**.

### 5.4.2 Operational Phase

During operation, the site will be required to remain in compliance with an EPA IED licence. This requires containment measures and monitoring to be in place to minimise the potential for any accidental discharge to ground. Fuel oil storage for the proposed development is planned to be located within the permitted (Phase 1) facility with an increase in fuel storage capacity as amended by FW25A/0523E. All transfer fuel pipework will be above ground and fully contained.

Onsite hardstanding areas will discharge through site drainage and treated through petrol interceptor before attenuation, addressing the risk of accidental spills and impacts to the underlying geological environment. The hardstand area and drainage design reduces recharge to ground; however, green areas are retained and permeable paving installed where feasible.

The predicted impact on the land soils and geological environment during the operational phase will be *long-term, imperceptible and neutral*, while the magnitude of impact is considered negligible.

## 5.5 Cumulative Impact of the Proposed Development

### 5.5.1 Construction Phase

Chapter 2 Table 2 presents the expected construction timelines for all proposed and permitted development. It is noted that there is an overlap for construction of Phase 1 (permitted development) and Phase 2 (Proposed Development) at the Kilshane site. It is likely that there may also be an overlap with the construction of the additional 400kV grid which is required for the Phase 2 development to operate. The latter will likely be installed at a shallow level within existing roadways (manmade ground) and as such should have minimal cumulative impact on soils and geology.

During construction of this and other proposed and permitted developments, there will be removal of soil cover and installation of hardstand and some potential for localised accidental construction related oil spills

and or alkaline discharges from cement works. Increase in hardstand and installation of drainage systems will reduce recharge to ground. All developments will have to incorporate measures to protect soil and water quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2009 and amendments). Therefore, the cumulative impact for the construction phase is considered to be *short-term, negative* and *imperceptible*.

### **5.5.2 Operational Phase**

The planned and proposed developments outlined in Chapter 2 Table 2 are all required to operate according to the conditions of their planning permission and licence conditions i.e with no discharges to ground and in accordance with S.I. 9 of 2009 and amendments and as such there is no expected cumulative impact on soil quality as a result of development.

Overall there will be a cumulative increase in agricultural land loss and increase in hardstand as a result of development. However, this is inline with the zoning for these lands.

Therefore, the cumulative impact for the operation phase is considered to be *long-term, neutral* and *imperceptible*.

## 6. HYDROLOGY AND HYDROGEOLOGY

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### 6.1 Introduction

AWN Consulting has completed this chapter of the EIAR which assesses and evaluates the existing hydrogeological and hydrological environment and the likely effects of the Proposed Development on the surrounding hydrological and hydrogeological environments.

### 6.2 Baseline Environment

The Proposed Development lies within the Nanny-Delvin Catchment (Hydrometric Area 08) and the Broadmeadows sub-catchment (WFD name: Broadmeadow\_SC\_010, Id 08\_3). The Huntstown river (EPA code: 08H02) runs along the Southern boundary before flowing North East connecting to the Ward River (Ward\_030 WFD river waterbody, European Code: IE\_EA\_08W010300), approximately 4.4 km from the site, which discharges into the Broadmeadow water (European code: IE\_EA\_060\_0100) before continuing into Malahide Estuary (IE\_EA\_060\_0000) which hosts Natura 2000 Sites (SAC/SPA/pNHA), approximately 9.8 km from the site, and finally discharges into the Northeastern Irish sea (HA08) (European code: IE\_EA\_020\_0000).

The Ward River (Ward\_030) waterbody has been most recently classified as '*at risk*' of not achieving good status during the most recent cycle (risk cycle, 2019-2024) and has a WFD ecological surface water status of '*moderate*'. The Broadmeadow Transitional Waterbody (European code: IE\_EA\_060\_0100) has an ecological WFD status of '*moderate*' and was most recently classified as '*at risk*' of not achieving good status (risk cycle, 2019-2024). The Malahide Bay coastal waterbody (European code: IE\_EA\_060\_0000) has an ecological WFD status of '*moderate*' and was most recently classified as '*at risk*' of not achieving good status.

According to the flood risk assessment carried out as part of this application, the site is located within Flood Zone C (i.e., where the probability of flooding from rivers is less than 0.1% or 1 in 1000). The residual risks of any form of flooding are *low to extremely low*.

The hydrogeology of the Proposed Development is characterised as a *poor aquifer*, only productive for local zones, with the aquifer to the East and South of the site characterised as a *locally important* aquifer, moderately productive for local zones.

Site investigations carried out in 2021 confirmed that overburden clays overlying the bedrock were at variable depths from 1.5 to 3.7 metres below ground level (mbgl). The site-specific aquifer vulnerability is therefore described as '*Extreme*' (0-3 m of thickness).

The Groundwater Bodies (GWB) underlying the site are the Dublin and Swords GWB. Currently, the most recent WFD groundwater status for these water bodies (2019-2024) is '*Good*'. The WFD Risk Score is currently under review for Dublin GWB while the Swords groundwater basin was found not to be '*not at risk*' of not achieving WFD Objectives.

The direction of groundwater flow is assumed to be south to southeast, with the possibility of the direction being locally influenced by dewatering activities in the adjacent Huntstown quarry.

### 6.3 Potential Impacts of the Proposed Development

#### 6.3.1 Construction Phase

In absence of mitigation measures, the construction phase would present potential impacts associated with the following activities:

- ▶ Increased surface run-off and sediment loading in run-off.

- ▶ Accidental spills or leaks of hydrocarbons from construction vehicles or alkaline water from cement works impacting run-off.
- ▶ Soil excavation and removal.
- ▶ During excavations for the development, some shallow dewatering may be required.

Without the consideration and employment of mitigation measures the potential impacts during the construction phase on surface water and groundwater regimes are ***negative, slight and short-term***.

### 6.3.2 Operational Phase

The Proposed Development will be required to operate in compliance with the requirements of an IED License. Fuel oil storage for the Proposed Development is planned to be located within the permitted (Phase 1) facility with an increase in fuel storage capacity as amended by FW25A/0523E. All transfer fuel pipework will be above ground and fully contained. There is no planned discharge to ground, and stormwater (post attenuation and treatment through an interceptor) will discharge to the Huntstown stream (Ward catchment). As such there is a low potential for an in direct discharge following an on site vehicle leak etc to reach the surface water body.

In the absence of mitigation measures the potential impacts during the operational phase are ***neutral imperceptible and long-term***

## 6.4 Mitigation and Residual Effects (Post-Mitigation)

### 6.4.1 Construction Phase

In order to minimise the potential for impacts on the hydrological and hydrogeological environments, the contractor will be obliged to work in compliance with a Construction Environmental management plan (CEMP) which include a number of mitigation measures will be adopted as part of the construction works on site:

- ▶ Control of water during construction.
- ▶ Careful handling and storage of fuel and chemicals.
- ▶ Storage and inspection of soils.
- ▶ Daily and weekly visual inspections of silt traps/settlement tanks and surface water drains.
- ▶ Regular auditing of construction/ mitigation measures and log keeping of such measures.

The predicted impact on the hydrological and hydrogeological environments during the construction phase will be ***short-term, imperceptible, neutral*** the magnitude of the impact is considered ***negligible***.

### 6.4.2 Operational Phase

The Proposed Development will be required to operate in compliance with the requirements of an IED License. The design includes above ground fully contained fuel delivery pipeline and oil interceptors on the stormwater lines to manage any localised oil leaks from cars etc. Monitoring of all licenced discharge will be undertaken in compliance with licence requirements. The storage of fuels will be located within the existing permitted facility, and the fuel storage tank will be increased in capacity accordingly.

The predicted impacts on the hydrological and hydrogeological environment during the construction phase will be ***long-term, imperceptible, neutral***, while the magnitude of impact is considered ***negligible***.

## 6.5 Cumulative Impact of the Proposed Development

### 6.5.1 Construction Phase

The permitted and Proposed Development at the Kilshane site, along with any other proposed developments (including the proposed construction of the additional 400kV grid), will be required to incorporate measures to protect the hydrological and hydrogeological quality of the surrounding environments quality in compliance with legislative standards for receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and Amendments); European Communities Environmental Objectives (Groundwater) Regulations (S.I. 9 of 2010 and Amendments)). As a result, there will be minimal cumulative potential for change in surface water quality or the natural hydrological and hydrogeological regime. The cumulative impact is considered to be *short-term, neutral* and *imperceptible*.

### 6.5.2 Operational Phase

All developments are required to manage groundwater discharges in accordance with S.I. 272 of 2009 and Amendments. All developments will also be required to manage surface water discharges in accordance with receiving water quality (European Communities Environmental Objectives (Surface Water) Regulations (S.I. 272 of 2009 and Amendments)). There will be a localised reduction in recharge as a result of increase hardstand in the area but no measurable change on the groundwater flow regime. As such there will be no cumulative impact to groundwater or surface water quality and therefore there will be no cumulative impact on the Groundwater or Surface Waterbody Status. The cumulative impact is considered to be *long-term, neutral* and *imperceptible*.

## 7. BIODIVERSITY

### 7.1 Introduction

This section of the EIAR was carried out by Altemar Ltd. It assesses the biodiversity value of the Proposed Development area and the potential impacts of the development on the ecology of the surrounding area within the potential Zone of Influence (ZOI). It also outlines the standard construction, operational, and monitoring measures that are proposed to minimise potential impacts and to improve the biodiversity potential of the Proposed Development site.

### 7.2 Baseline Environment

A pre-survey biodiversity data search was carried out in June 2025 and revised in November 2025. This included examining records and data from the National Parks and Wildlife Service (NPWS), National Biological Data Centre (NBDC) and the Environmental Protection Agency (EPA), in addition to aerial, 6 & 25 inch maps and satellite imagery.

Field surveys were undertaken in compliance with relevant guidelines. Flora, breeding bird and bat surveys were carried out within the appropriate seasonal timeframes, and the mammal survey was undertaken within the sub-optimal season. Field surveys were carried out as outlined in Table 7.1.

**Table 7.1 Field Surveys and Survey Dates**

<b>Survey</b>	<b>Surveyor(s)</b>	<b>Date(s)</b>
Flora, invasive species, mammals, and bat roost suitability	Kalvin Townsend-Smyth (Altemar)	19 <sup>th</sup> June 2025
Breeding birds	Kalvin Townsend-Smyth (Altemar) & Jack Doyle (Altemar)	13 <sup>th</sup> , 19 <sup>th</sup> & 25 <sup>th</sup> June 2025
Bats	Kalvin Townsend-Smyth (Altemar)	19 <sup>th</sup> June & 10 <sup>th</sup> July 2025

### 7.3 Potential Impacts of the Proposed Development

#### 7.3.1 Construction Phase

In the absence of mitigation measures the overall development of the site is likely to have direct negative impacts upon the existing habitats, fauna and flora within the site. Direct negative effects will be manifested in terms of the removal of the site's internal habitats. The removal of the internal habitats will result in a loss of species of low biodiversity importance. Due to the proximity of the Huntstown stream to the Proposed Development site, there is a risk of water quality impacts resulting from the run-off of contaminated water (e.g. silt and petrochemicals) from the construction site. However, given the minimum hydrological distance from the Proposed Development site to downstream designated conservation sites within Malahide Estuary (c. 14 km), the scale of the Proposed Development, and the fact that only landscaping works involving planting will be undertaken within c. 65 m of the stream, any pollutants, dust or silt laden run off will either infiltrate through the soil, or be dispersed, diluted, and ultimately settle to negligible levels within the River Ward Catchment and the Broadmeadow River prior to reaching downstream designated sites. The area is not deemed to be a significant foraging area for terrestrial mammals or birds. The potential impacts of the proposed construction of the development are as follows:

- ▶ Designated Conservation Sites - Negligible Adverse / International / Negative Impact / Imperceptible / Temporary.
- ▶ Terrestrial Mammals - Medium Adverse / National / Negative Impact / Slight Effects / Temporary
- ▶ Flora - Low Adverse / Site / Negative Impact / Not Significant / Temporary
- ▶ Bats - Low Adverse / International / Negative Impact / Slight Effects / Temporary

- ▶ Aquatic Biodiversity - Low Adverse / Regional / Negative Impact / Slight Effects / Temporary
- ▶ Birds - Low adverse / Site / Negative Impact / Not Significant / Temporary

### 7.3.2 Operational Phase

Once constructed, the site would be seen as a stable ecological environment that has an overall benefit for biodiversity in the long-term as landscaping matures. The potential impacts of the operation of the Proposed Development are as follows:

- ▶ Designated Conservation Sites - Negligible Adverse / International / Negative Impact / Imperceptible / Long-term
- ▶ Terrestrial Mammals - Low Beneficial / National / Positive Impact / Slight Effects / Long-term
- ▶ Flora – Medium Beneficial / Site / Positive Impact / Moderate Effect / Long-term
- ▶ Bats – Low Beneficial / International / Positive Impact / Slight Effects / Long-term
- ▶ Aquatic Biodiversity – Negligible Adverse / Regional / Negative Impact / Imperceptible / Long-term
- ▶ Birds - Medium Beneficial / Site / Positive Impact / Slight Effects / Long-term

## 7.4 Mitigation and Residual Effects (Post-Mitigation)

### 7.4.1 Construction Phase

The mitigation measures proposed for the construction phase of the Proposed Development primarily target the risks relating to contaminated surface water runoff entering the River Ward, light pollution, and protected species establishing themselves within the site of the Proposed Development in advance of the works. These measures involve standard water pollution control measures, avoidance of light spill onto adjacent habitats, a pre-construction survey, and the procurement of a project ecologist to oversee the implementation of these measures. No significant adverse impacts on the conservation objectives of designated conservation sites / Natura 2000 sites / European Sites are likely in the absence of mitigation measures outlined.

Following the effective implementation of these mitigation measures, the overall residual effects resulting from the construction of the Proposed Development are expected to be ***low adverse, local, negative not significant*** and ***temporary***.

### 7.4.2 Operational Phase

During the operation phase of the Proposed Development, standard operational measures as outlined in the engineering report will be in place to protect surface water networks from pollution. The site will operate in compliance with an IED licence. No other mitigation measures are required for the operational phase of the Proposed Development.

Following the effective implementation of these mitigation measures, the overall residual effects resulting from the operation of the Proposed Development are expected to be ***low beneficial, local, positive, slight,*** and ***long-term***.

## 7.5 Cumulative Impact of the Proposed Development

### 7.5.1 Construction Phase

As part of the assessment of the impact of the Proposed Development, account has also been taken of cumulative projects, i.e. developments that are currently permitted or under construction within the surrounding area, but whose environmental impact are not yet fully realised within the existing environmental baseline. Following a review of projects located in proximity to the Proposed Development

It is concluded that no significant effects on designated conservation sites will be seen as a result of the Proposed Development alone or cumulatively with other projects. There will be loss of greenfield areas during construction which will have an impact up until landscaping is completed. The residual cumulative impact of the Proposed Development on biodiversity in combination with other planned or permitted developments during construction can therefore be considered to be *negative, not significant* and *short-term*.

### **7.5.2 Operational Phase**

Cumulatively there will be a loss of greenfield area locally as part of the development in the area. The proposed additional 400kV grid connection required for the Phase 2 development is expected to be along public roads with minimal impact on areas of biodiversity value. As the proposed developments and other permitted developments on greenfield sites will require landscaping with native species the operation of the developments is expected to have an overall long-term slight cumulative benefit for biodiversity. This is due to the primarily arable nature of the current land use and the native planting within the landscape plan that will mature over time.

In light of the cumulative impacts as identified in the Hydrology/Hydrogeology chapter and cumulative emission modelling undertaken in the Air chapter of the EIAR, it is concluded that there are no significant cumulative/in combination impact on the downgradient Natura 2000 network.

The residual cumulative impact of the Proposed Development on biodiversity in combination with other planned or permitted developments during operation can therefore be considered to be *neutral, not significant* and *long-term*.

## 8. AIR QUALITY

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The assessment of Air Quality is contained within Chapter 8 of Volume II.

### 8.1 Existing Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO<sub>2</sub>), particulate matter less than 10 microns (PM<sub>10</sub>) and particulate matter less than 2.5 microns (PM<sub>2.5</sub>) and are generally well below the National and European Union (EU) ambient air quality standards.

The assessment of baseline air quality in the region of the Proposed Development has shown that current levels of key pollutants are significantly lower than their limit values. Due to the size, nature and location of the Proposed Development, increased road traffic emissions resulting from construction and maintenance of the Proposed Development are expected to have a negligible impact on air quality.

### 8.2 Impact Assessment

#### 8.2.1 Do Nothing Scenario

In the Do-Nothing scenario, ambient air quality at the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

No construction works will take place and the identified impacts of fugitive dust and particulate matter emissions will not occur at the subject site. The proposed 2 no. additional turbines will not be installed and the associated emissions will not occur.

This Do-Nothing scenario is predicted to have a direct, long-term, negative and not significant effect on air quality.

#### 8.2.2 Construction Phase

An assessment of the potential dust impacts as a result of the construction phase of the Proposed Development was carried out based on the UK Institute for Air Quality Management 2024 guidance document '*Guidance on the assessment of Dust from Demolition and Construction*'. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health and ecological effects. The surrounding area was assessed as being of low sensitivity to dust soiling and of low sensitivity to dust-related human health effects.

The sensitivity of the area was combined with the dust emission magnitude for the site from earthworks activities and trackout (movement of vehicles) to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is at most a low risk of dust related impacts associated with the Proposed Development. In the absence of mitigation there is the potential for **direct, short-term, negative,** and **slight** impacts to air quality.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HGVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2022 guidance document '*Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106*'. As a result a detailed air assessment of construction stage traffic emissions has been scoped out from any further assessment and the construction stage traffic emissions will not have a significant effect on air quality.

### 8.2.3 Operational Phase

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. The change in traffic associated with the operational phase of the Proposed Development met the PE-ENV-01106 criteria requiring a detailed air dispersion modelling assessment. As a result a detailed air assessment of operational stage traffic emissions has been scoped out from any further assessment and the operational stage traffic emissions will not have a significant effect on air quality.

The operational assessment involved air dispersion modelling of pollutant emissions from the operation of an additional 2 no. turbines on natural gas, as well as emergency operation on diesel, as part of the Proposed Development. The assessment evaluated the impacts from nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), particulate matter (as PM<sub>10</sub> and PM<sub>2.5</sub>) and sulphur dioxide (SO<sub>2</sub>) emissions at off-site locations including nearby residential properties, and the impact of nitrogen oxides (NO<sub>x</sub>), SO<sub>2</sub> and nitrogen and acid deposition emissions at sensitive ecological receptors. The dispersion modelling has determined that concentrations of all pollutants are in compliance with the relevant ambient air quality standards. The effect of operational phase emission from the Proposed Development will be *direct, long-term, negative* and *not significant*.

## 8.3 Mitigation

### 8.3.1 Construction Phase

Detailed dust mitigation measures are outlined within Section 8.8 of Chapter 8 and also included in the Construction Environmental Management Plan to ensure that no significant nuisance as a result of construction dust emissions from demolition, earthworks, construction and trackout (movement of vehicles) occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction*' as well as other relevant dust management guidance, are implemented the impacts to air quality during the construction of the Proposed Development are considered *direct, short-term, localised, negative* and *not significant*, posing no nuisance at nearby sensitive receptors (such as local residences).

### 8.3.2 Operational Phase

No site-specific mitigation measures are proposed for the operational phase as impacts are predicted to be not significant.

## 8.4 Residual Effects

When the dust mitigation measures detailed in the mitigation section (Section 8.8) are implemented, the residual effect of fugitive emissions of dust and particulate matter from the site will be *short-term, direct, localised, negative* and *not significant* in nature and will pose no nuisance at nearby receptors.

The effect of operational phase emissions from the Proposed Development will be *direct, long-term, negative* and *not significant*.

## 8.5 Monitoring

Monitoring of the dust mitigation measures will be required as set out in Section 8.8 of Chapter 8 and the Construction Environmental Management Plan. The monitoring requirements will ensure that the dust mitigation measures are working satisfactorily.

The permitted development is regulated by an existing EPA Industrial Emissions (IE) Licence reference P1208-01, which sets out limits and monitoring requirements for air emissions from the Kilshane site. It is

anticipated that a licence review will be required to reflect the design changes at the site resulting from the Proposed Development. The additional turbines will be subject to the same monitoring requirements already in place for the permitted turbine, licenced under P1208-01.

## 8.6 Cumulative Effects

There is the potential for cumulative impacts to air quality should the construction phase of the Proposed Development coincide with that of other developments within 500m of the site. A review of proposed/permitted developments in the vicinity of the site was undertaken and relevant developments with the potential for cumulative impacts were identified.

There is at most a low risk of dust impacts associated with the Proposed Development. The dust mitigation measures outlined in Section 8.8 of Chapter 8 will be applied during the construction phase which will avoid significant cumulative impacts on air quality. With appropriate mitigation measures in place, the predicted cumulative impacts on air quality associated with the construction phase of the Proposed Development and the permitted cumulative developments are deemed *direct, short-term, localised, negative* and *not significant*.

Detailed air dispersion modelling of cumulative emissions from the Proposed Development and neighbouring facilities determined that pollutant concentrations will be in compliance with the relevant limit values. Therefore, emissions from the Proposed Development will have a *direct, long-term, negative* and *not significant* effect on air quality.

Overall, no significant impacts to air quality are predicted during the construction or operational phases of the Proposed Development

## 9. CLIMATE

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### 9.1 Introduction

The assessment of Climate is contained within Chapter 9 of the EIAR.

### 9.2 Existing Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and compliance with European Union's Effort Sharing Decision "*EU 2020 Strategy*" (Decision 406/2009/EC). The EPA estimate that Ireland had total GHG emissions of 53.82 Mt CO<sub>2e</sub> in 2024. The data indicate that from 2021- 2024 Ireland has used 79% (186 Mt CO<sub>2e</sub>) of the 295 Mt CO<sub>2e</sub> Carbon Budget for the five-year period 2021-2025. This leaves 21% of the budget available for 2025, requiring a substantial 17.5% annual emissions reduction for 2025 to stay within budget.

### 9.3 Impact Assessment

#### 9.3.1 Do Nothing Scenario

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area (including influences from potential new developments in the surrounding area, changes in road traffic, etc).

As the site is zoned for development, it is likely that in the absence of the proposed project a development of a similar nature would occur in the future. Therefore, the predicted greenhouse gas emissions associated with the construction and operation phases are likely to occur regardless of the specific proposed project. Climate change is being driven by broader, long-term global trends in greenhouse gas concentrations, which will continue irrespective of any localised development. This assessment focuses on the contribution of the proposed project to the overall emissions and considers mitigation measures to minimise its climate impact.

The proposed project fulfils a key target of the CAP25 of "at least 2 GW" of new flexible gas plant, intended to produce a "*more flexible energy system, reducing the strain on the power system, and ensuring that we maximise our renewables potential.*" The proposed project will provide 0.334 GW of this capacity. In the Do-Nothing, where the proposed project does not go ahead, this capacity is not provided and Ireland's ability to meet this CAP25 target as well as its trajectory to net zero by 2050 is impeded.

The effect of the Do Nothing on climate is therefore considered ***direct, long-term, negative and significant.***

#### 9.3.2 Greenhouse Gas Assessment

Calculation of the GHG emissions associated with the construction, operation and decommissioning of the Proposed Development was calculated using the online Transport Infrastructure Ireland Carbon Assessment Tool and information provided by the design team. GHG emissions associated with the Proposed Development are predicted to be a small fraction of Ireland's national 2024 GHG emissions, the ETS and non-ETS 2030 targets and the Electricity, Industry, Transport and Waste sector 2030 emissions ceilings. The Proposed Development will incorporate some mitigation measures which will aim to reduce climate impacts during construction and once the development is operational.

As per the TII 2022 PE-ENV-01104 guidance, the significance of the effect of GHG emissions on climate is assessed for the total GHG emissions across all Proposed Development stages, and is determined by two main factors - the extent to which the trajectory of GHG emissions from the project aligns with Ireland's

GHG trajectory to net zero by 2050, and the level of mitigation taking place. The proposed project is fully in line with national climate policy, as CAP25 specifically gives a key target of installing "at least 2 GW" of new flexible gas plant, intended to produce a *"more flexible energy system, reducing the strain on the power system, and ensuring that we maximise our renewables potential."* The proposed project will provide 0.334 GW of this capacity. In accordance with the TII guidance and the EPA guidelines (EPA, 2022), the significance of effect of GHG emissions during the construction, operational and decommissioning phases which is *direct, long-term, negative* and *slight*, which is overall *not significant*.

### 9.3.3 Climate Change Risk Assessment

A Climate Change Risk Assessment (CCRA) was conducted to consider the vulnerability of the Proposed Development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (coastal, pluvial, fluvial); extreme heat; extreme cold; drought; extreme wind; lightning; hail; fog; wildfire; and landslides. The Proposed Development is predicted to have at most low vulnerabilities to the various climate hazards and therefore the effect of climate change on the Proposed Development is considered *direct, long-term, negative* and *imperceptible*, which is considered overall *not significant* in EIA terms with regard to the construction and operational phase.

Overall, no significant impacts to climate are predicted during the construction or operational phases of the Proposed Development.

## 9.4 Mitigation

### 9.4.1 Construction Phase

A number of best practice mitigation measures are proposed for the construction phase of the Proposed Development to ensure that impacts to climate are minimised. These mitigation measures include a construction program, sourcing materials locally where feasible, determining material reuse and waste recycling opportunities and identifying and implementing lower carbon material choices and quantities during detailed design.

### 9.4.2 Operational Phase

The majority of the GHG emissions associated with the proposed project originate from the combustion of natural gas by the turbine during the operational phase.

While natural gas is the most likely fuel for the turbine at the time of this assessment, the turbine will also be capable of using biomethane as a fuel source in the future. Biomethane meets the same technical standards as natural gas, and as such is fully compatible with existing gas infrastructure and installations. Biomethane is considered a zero GHG emissions fuel (once it is produced according to the Renewable Energy Directive's life cycle sustainability criteria) and its availability on the market is due to increase in the future, driven by Gas Networks Ireland's (GNI) strategy for decarbonisation *Pathway to a Net Zero Carbon Network* (GNI, 2024) and the *National Biomethane Strategy* (Government of Ireland, 2024d). GNI's strategy is to fully decarbonise its gas network by 2045, phasing out natural gas entirely and delivering biomethane and hydrogen in its stead.

Substantial progress on the decarbonisation of the national gas network via biomethane and hydrogen replacement of natural gas is considered highly likely during the lifespan of the proposed project, and it is therefore expected that the use of natural gas and the associated GHG emissions will reduce throughout the operational phase relative to the development's opening year.

## 9.5 Residual Effects

The impact to climate as a result of a proposed project must be assessed as a whole for all phases. The proposed project will result in some impacts to climate through the release of GHGs. TII reference the ISEP GHG Guidance which states that the crux of assessing significance is “*not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050*”. The proposed project has proposed some best practice mitigation measures and is committing to reducing climate impacts where feasible. The proposed project is fully in line with national climate policy, as CAP25 specifically gives a key target of installing “at least 2 GW” of new flexible gas plant, intended to produce a “*more flexible energy system, reducing the strain on the power system, and ensuring that we maximise our renewables potential*.” The proposed project will provide 0.334 GW of this capacity. As per the TII and ISEP assessment criteria the residual effect of the proposed project in relation to GHG emissions is considered **direct, long-term, negative** and **slight**, which is overall **not significant** in EIA terms.

Design mitigation has been considered when assessing the vulnerability of the development to future climate change. In relation to climate change vulnerability, it has been assessed that there are no significant risks to the Proposed Development as a result of climate change. The residual effect of climate change on the Proposed Development is considered **direct, long-term, negative** and **imperceptible**, which is overall **not significant** in EIA terms.

## 9.6 Monitoring

There is no monitoring required for the construction or operational phases.

## 9.7 Cumulative Effects

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that “*for GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable*.”

However, by presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. Therefore, the assessment approach is considered to be inherently cumulative.

The cumulative impact of the Proposed Development in relation to GHG emissions is considered **direct, long-term, negative** and **slight**, which is overall **not significant** in EIA terms.

## 10. NOISE AND VIBRATION

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### 10.1 Baseline Environment

The baseline noise environment has been established through an environmental noise surveys conducted at the site in order to quantify the existing noise environment. The survey was conducted in accordance with ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

### 10.2 Potential Impacts of the Proposed Development

#### 10.2.1 Construction Phase

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities or An Bord Pleanála normally control construction activities by imposing limits on the hours of operation and/or applying noise limits for construction noise at noise-sensitive locations.

Reference has been made to BS 5228 2009+A1 2014 Code of practice for noise and vibration control on construction and open sites. Part 1 to set appropriate construction noise limits for the development site. Construction noise contours have been prepared on this basis using computer-based noise modelling.

Construction noise levels predicted at nearest sensitive properties are predicted to be below the threshold for significant impact during the general construction phase. The application of binding noise limits, hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact are minimised.

At noise sensitive locations in the surrounding area potential *negative, not significant* and *short-term* effects are likely.

#### 10.2.2 Operational Phase

The primary sources of outward noise in the operational context are long-term and will comprise plant noise from the proposed gas turbines

Detailed computer-based noise modelling of the site shows that the noise levels of the subject site are within the noise criteria. The effect is therefore *neutral, not significant* and *long-term*.

### 10.3 Cumulative Impact of the Proposed Development

#### 10.3.1 Operational Phase

Cumulative impact with related development and future developments have been assessed. The effect is *negative, not significant* and *long-term*.

# 11. LANDSCAPE AND VISUAL ASSESSMENT

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## 11.1 Introduction

This Landscape and Visual Assessment (LVIA) has been prepared to accompany a planning application for the proposed Kilshane Phase 2 Development. The LVIA report describes the landscape context of the Proposed Development and assesses the likely landscape and visual impacts of the Proposed Development on the receiving environment.

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

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

## 11.2 Baseline Environment

The study area is contained within a generally flat to low rolling setting. The terrain to the west and south of the site slopes towards the Tolka River valley in a general south-westerly direction, which is situated c. 4km from the site at its nearest point. Whilst several small streams flow throughout the northern and north-western portions of the study area, there are no notable rivers or watercourses within the study area. With regard to land use, the study area is a highly modified setting comprising numerous anthropogenic land uses. One of the most prominent of these is the existing Roadstone Huntstown Quarry, which occupies a large area of land to the immediate south of the Proposed Development. The existing Huntstown Power Station, situated approximately 600m southeast of the site boundary, also has a notable influence on the study area due to its relatively large built structures. In contrast to these highly anthropogenic land uses, the proposed site and its immediate surrounds are comprised of areas of pastoral farmland that provide a buffer space within the surrounding industry. Dublin Airport is also located just over 1.6 km east of the site, with the Airport logistics park located just over 700m to the east.

The most notable areas of vegetation in the surrounds of the site are the linear corridors of mature hedgerows that define the pastoral fields within the study area, whilst swathes of immature woodland often flank the major routes corridors that contain the site. Due to the highly industrialised nature of this landscape context, there is a limited number of residential receptors in the near surrounds of the site. The nearest residential receptor is situated at the bend of the L3120 local road, approximately 260m northwest of the site boundary. In terms of transport routes, the N2/ M2 corridor is located some 100m east of the site at its nearest point. This merges into the M50 motorway to the south of the site, which is located some 2 km from the site boundary at its nearest point. The regional road R135 passes to the east of the site in a general northeast to southwest direction. The local road L3120 (Kilshane Road) passes to the immediate north of the site, before continuing in a southerly direction to the west of the Proposed Development. In terms of tourism, heritage and recreation, due to its highly industrialised setting, the study area is not considered to be synonymous with recreation. Dunsoghly Castle, dating to 1450, is located approximately 1 km to the northeast of the site. While managed by the OPW, the castle is not currently accessible to the public. St Margaret's Cemetery is located some 2.3 km northwest of the site. A small pitch and putt golf course is located approximately 1.1 km to the north of the site.

## 11.3 Potential Impacts of the Proposed Development

### 11.3.1 Assessment of Receptor Sensitivity

#### 11.3.1.1 Landscape

The landscape of the study area constitutes a highly modified setting influenced by large-scale commercial and industrial developments. The site and its immediate surroundings are heavily influenced by the highly anthropogenic setting of the existing Roadstone Huntstown Quarry and Huntstown Power Station, whilst the active quarry also generates a high degree of HGV traffic along the surrounding road network. A broad expanse of business and technology parks also occurs in the south-western portion of the study area, whilst small industrial and commercial land use clusters also occur to the east of the site and include Dublin Airport Logistics Park and Horizon Logistics Park. Dublin Airport is a prominent land use in the wider study area, the westernmost extents of which occur within the eastern extent of the study area. The study area is also heavily influenced by the varied mix of major routes that contain the site, including the busy M50 motorway, the N2 National Primary Route and several other regional roads.

In terms of landscape designations, the relatively robust and non-distinctive character of the study area is reflected in the Landscape Character Assessment. The site is contained within the southwestern part of the 'Low Lying Agricultural' LCT which is designated a 'Modest' Landscape Value and 'Low' Landscape Sensitivity. The Proposed Development site is also zoned as 'HI-Heavy Industry', which reflects the utilitarian character of this landscape context. The principal zoning objective for this zoning is "*Provide for heavy industry*".

Overall, it is considered that this is an anthropogenic landscape context that is highly influenced by numerous utilitarian land uses and features. The study area is not considered to be highly unique or distinctive with regard to the physical landscape; instead, its character is heavily derived from its highly modified and industrial nature. This is a busy working landscape that encompasses one of the principal major route corridors in and out of the capital. There is no strong sense of scenic or recreational amenities nor is it considered to be highly susceptible to development. On balance of the reasons outlined above, the landscape sensitivity to this form of industrial development is deemed to be **Low**.

#### 11.3.1.2 Visual

As a result of its industrial context, views across the majority of the study area present with a high anthropogenic presence. Furthermore, large portions of the study area are visually contained due to dense roadside hedgerows and mature tree lines, notably along the N2 road corridor. The northern extent of the study area consists of a relatively typical agricultural landscape, with views extending across farmland and stacked hedgerow vegetation. As previously noted, there are no designated scenic routes or views located within the study area. Major routes are prominent features of this landscape context and also tend to be well contained and bound by highly anthropogenic land uses. As such, major routes within the study area tend to be classified with a **Medium-low** and **Low** receptor sensitivity, with areas classified as Medium-low less influenced from highly utilitarian built forms and land uses.

Whilst a pleasant pastoral aesthetic is noted throughout some parts of the northern extent of the study area, as noted above, the surrounding local and wider landscape to the south is heavily influenced by an array of anthropogenic features such as major transport routes, urban settlements, and industrial development. Overall, the sensitivity of visual receptors within the more typical working landscape context tends to range between **Medium** and **Medium-low**, with those of a Medium sensitivity representing more open views across the wider landscape.

## 11.3.2 Construction Phase

### 11.3.2.1 Landscape

During the construction phase there will be a far higher intensity of activity at the site than during the operational phase. This will consist of heavy goods vehicle movement to and from the site as well as construction machinery within the site. Nonetheless, the perceived intensification of HGVs is likely to be limited as HGV are a characteristic feature of the surrounding road network due to the presence of the existing Roadstone Huntstown Quarry and other large-scale commercial and industrial development in the surrounding area.

In terms of physical landscape effects, the construction phase of the Proposed Development will result in some notable modifications to the existing landcover and landform to facilitate the Proposed Development. These principally relate to large areas of soil stripping, removal of vegetation and excavation works required to facilitate the foundations of the proposed built elements of the Proposed Development. The larger proposed structures such as the exhaust stacks and air intake units will require some notable excavations and soil stripping, as will the two 12m high acoustic walls.

Construction stage activities are not uncommon in this landscape context which has undergone a high degree of change in the form of various types of development over the past decade. There is a high degree of intervening layers of mature vegetation as well as existing development located in the surroundings of the site, which will notably reduce the perceived effect of the construction stage effects at receptors beyond c. 500m to 1km from the site. Furthermore, construction-related activity and its effect on landscape character will be 'short-term' in duration.

It is considered that the magnitude of construction phase landscape impact is **High-medium** for the Site and its immediate environs, whilst beyond 200-400m it is less likely to be noticed and will have a 'Low' then '**Negligible**' effect over greater distances as it becomes a proportionately smaller component of the overall hinterland landscape fabric.

The **Low** landscape sensitivity judgement attributed to the site and the study area, coupled with a **High-medium** magnitude of landscape impact for the site and its immediate environs, is considered to result in a **Moderate-slight** overall significance of landscape impact within 200-400m of the site. However, beyond approx. 400m from the site, the significance of construction-stage impacts is likely to reduce from **Slight** and **Imperceptible**.

### 11.3.2.2 Visual

#### 11.3.2.2.1 Proposed Substation

During the construction phase, the main visual impacts will arise from the frequent movement of heavy goods vehicles (HGVs) and worker vehicles travelling to and from the site via the designated site entrance. In addition, construction machinery and equipment, some of which may extend above intervening vegetation and existing buildings, will be present within the site. The exhaust stacks and larger structures will likely require tower cranes for their construction, which will likely be visible during the construction phase. The lower lying proposed structures will likely be screened by surrounding vegetation, aside from some elevated areas including the N2 overpass to the north of the site. Stockpiles of stored construction materials will also be visible in certain areas, particularly during peak construction periods. However, aside from the site's immediate vicinity, a large part of this temporary activity within the site will remain screened and partially screened from view by the surrounding land uses and intervening vegetation. Furthermore, construction-related activity is temporary in nature and will cease once the development becomes fully operational. Thus, construction stage impacts are like to result in a visual effect of **Medium** in the immediate surroundings of the site.

Coupled with the **Medium-Low** and **Low** visual receptor sensitivities in the near surrounds of the site, the construction stage visual impacts in the immediate vicinity of the site will be no greater than **Moderate** and **Moderate-slight** and will reduce considerably beyond 500m-1000m from the site, where the Proposed Development will be heavily screened. As a result, construction stage visual impacts are not considered to be significant.

### 11.3.3 Operational Phase

#### 11.3.3.1 Landscape

With regard to the landscape character of the site, the Proposed Development will see the introduction of an intensive industrial development across current agricultural land use. Nevertheless, these agricultural fields are situated in an area zoned for heavy industry, with numerous examples of such industry visible throughout the study area. Furthermore, the busy N2/ M2 motorway corridor to the immediate east of the site adds movement and intensity to the central portion of the study area.

Nonetheless, there will be some permanent physical effects to the site's land cover, which are not readily reversible. These relate to the excavation of extensive parts of the site to facilitate the foundations of the buildings and all other infrastructure. Indeed, the Proposed Development will result in the loss of a modest area of agricultural land for a high-intensity energy infrastructure development. Some of the most notable impacts on the local landscape character will be generated from the overall scale of the built aspects of the development, some of which rise to a maximum height of 28m, in addition to the extensive nature of the Proposed Development, which will comprise several different pieces of infrastructure. However, the Proposed Development represents the intensification of the permitted energy development of Kilshane Phase 1 and is situated in an area zoned for such development.

It is also worth noting that the extensive landscaping associated with the permitted Kilshane Phase 1 development will notably offset some of the landscape impacts associated with the Proposed Development. This includes mounded berms and extensive planting of native tree species to the north of the Proposed Development will partially screen views from the L3120 and N2 corridor. The Proposed Development will also utilise an array of contemporary building materials and finishes that move away from the typical industrialised presentation of other older industrial and commercial developments within the wider landscape. This includes light tones on the taller built components such as the air intake units which will reduce the level of contrast when viewed against the sky.

Overall, whilst this is quite a sizable development, it will not appear incongruous in this aforementioned context. Once fully constructed, the Proposed Development will represent a notable increase in the intensity of industrial activities within the immediate surroundings of the site. Nevertheless, it will not appear as an inappropriate form of development, given the industrial nature of the surrounding landscape context.

For the reasons outlined above, it is considered that the magnitude of operational landscape impact is Medium for the site and its immediate environs, whilst beyond approx. 500m it is less likely to be noticed and will have a 'Low' then 'Negligible' effect over greater distances as it becomes a proportionately smaller component of the overall landscape fabric.

The **Low** landscape sensitivity judgement attributed to the study area, coupled with a **Medium** magnitude of landscape impact in the immediate vicinity (<500m) of the proposed extension development is considered to result in an overall significance of no greater than **Slight**, with the remainder of the 3km radius study area likely to experience **Slight** or **Imperceptible** landscape impacts.

### 11.3.3.2 Visual

A summary of operational phase visual impacts is provided in the table below.

<b>VP No.</b>	<b>VP Sensitivity</b>	<b>Residual Significance / Quality / Duration of Effect</b>
<b>VP1</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP2</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP3</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP4</b>	Medium-Low	Moderate / Negative / Permanent
<b>VP5</b>	Medium-Low	Moderate-Slight / Negative / Permanent
<b>VP6</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP7</b>	Medium-Low	Slight / Negative / Permanent
<b>VP8</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP9</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP10</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP11</b>	Medium-Low	Imperceptible / Neutral / Permanent
<b>VP12</b>	Medium	Imperceptible / Neutral / Permanent

## 11.4 Mitigation and Residual Effects (Post-Mitigation)

### 11.4.1 Mitigation Measures

#### 11.4.1.1 Construction Phase

With regard to landscape and visual there are limited construction-stage mitigation measures as the site is well established and heavily screened from surrounding receptors. In this regard, there is no requirement for site hoarding or additional screening to screen the construction stage effects as much of the construction stage works will be heavily screened by the existing surrounding vegetation.

#### 11.4.1.2 Operational Phase

The main mitigation-by-avoidance measure employed in this instance is the siting of the development in a robust landscape where the zoning aligns and where it is surrounded by other commercial and industrial developments of a similar scale. The Proposed Development will also avail of landscaping and planting measures associated with the permitted development to its immediate north. Indeed, these landscaping measures, which consist of the construction of earthen berms and substantial areas of native planting, will result in a notable visual buffer for the nearest surrounding receptors, particularly those to the west. It

should be noted that based on the current proposed timelines for both the consented and proposed projects, the consented landscape will have up to 4 years to establish prior to the projected operational phase of the Proposed Development. These planting measures, combined with the siting of the Proposed Development in a robust area that benefits from a high degree of existing screening, will considerably reduce the perceived presence of the Proposed Development within the surrounding local and wider landscape.

## 11.4.2 Residual Impacts

### 11.4.2.1 Construction Phase

The principal construction stage landscape and visual impacts are associated with the movement of heavy earth-moving machinery and the erection of tower cranes on-site in order to construct the large components of the Proposed Development. In addition, the temporary storage of excavated materials on-site and the gradual emergence of the Proposed Development will also generate landscape and visual impacts. Nevertheless, due to the contained nature of the site and mitigation measures associated with the Kilshane Phase 1 development, it is considered that both construction landscape and visual effects will be heavily diminished.

Overall, the construction stage landscape effect is deemed to be no greater than a Slight significance and **Negative** in quality, whilst the significance of construction stage visual impacts is deemed to be no greater than **Moderate** and of a **Negative** quality in the immediate surrounds of the site. Nonetheless, these impacts will reduce rapidly beyond the immediate site context, which is well contained by both perimeter vegetation and layers of intervening built development within the immediate surrounding landscape. The construction stage landscape and visual effects are classified as **short-term** in terms of duration. Overall, the residual construction stage effects are deemed **not significant**.

### 11.4.2.2 Operational Phase

#### Landscape

In terms of landscape impacts, there will be some permanent physical effects to the site's land cover, which are not readily reversible. These relate to the excavation of extensive parts of the site to facilitate the foundations of the buildings and all other infrastructure. Indeed, the Proposed Development will result in the loss of an area of agricultural land for a high-intensity energy infrastructure development. Nevertheless, these agricultural fields are situated in an area zoned for heavy industry, with numerous examples of such industry situated throughout the study area. Furthermore, the busy N2/ M2 motorway corridor to the immediate east of the site adds movement and intensity to the central portion of the study area. Overall, whilst this is quite a sizable development, it will not appear incongruous in this aforementioned prevailing modified landscape context.

In terms of impacts on landscape character, the proposed extension development will see the introduction of an intensive industrial development across current agricultural land use. Nevertheless, these agricultural fields are situated in an area zoned for heavy industry, with numerous examples of such industry visible throughout the study area. The Proposed Development represents the intensification of the permitted energy development of Kilshane Phase 1. Once fully constructed, the Proposed Development will represent a notable increase in the intensity of industrial activities within the immediate surroundings of the site. Nevertheless, it will not appear as an inappropriate form of development, given the industrial nature of the surrounding landscape context.

Overall, the Proposed Development does not conflict with landscape and visual policies and objectives within the current Fingal CDP and represents the intensification of energy infrastructure within the local landscape context. As a result, the significance of operational phase landscape effect is deemed **Moderate**, is of a **Negative-Neutral** quality and is **Permanent** in terms of duration. Therefore, the residual landscape effects are deemed **not significant**.

## Visual

In terms of Visual Impacts, the Proposed Development was assessed at 12 no. viewpoint locations throughout the study area, representing a range of viewing angles, distances, and visual receptors. The majority of views were contained in the near and immediate local surroundings of the development, as this is where the most potential for significant visual effects are likely to occur. The sensitivity of visual receptors for all but one viewpoint were deemed Medium-low, which reflects the robust nature of the study area. Medium sensitivity was attributed to VP12, which represents the heritage receptor of Saint Margaret's Cemetery.

In terms of residual visual effects, the significance of the visual effect ranged between Moderate and Imperceptible. Of the 12 viewpoints, 9 were deemed to have a residual visual effect of Imperceptible, which further reflects the contained nature of the site. The most notable residual effects will occur along the local road L3120 to the north of the proposed site. Indeed, whilst visibility from this local road is heavily contained in some areas, it also affords some open views of the Proposed Development. Viewpoint VP4 affords one of the clearest and nearest views of the Proposed Development, as a result of its elevated location where the L3120 crosses the N2 corridor. The upper portions of the exhaust stacks are clearly visible rising beyond the permitted development. Viewed in combination with the permitted development, there is a notable increase in built infrastructure in this view. However, despite its considerable scale, the Proposed Development is contained within the existing field pattern and is partially screened by existing mature vegetation in its immediate surroundings. Furthermore, this view is notably influenced by existing heavy industry, and as such, the introduction of a large industrial development does not greatly detract from any sense of scenic amenity in this location. Overall, the residual significance of effect was deemed 'Moderate' for this viewpoint.

On balance of the reasons set out above and within the visual impact appraisal, residual visual effects are in the lower order of magnitude as the development tends to be well screened and where visible, will not detract notably from the prevailing robust industrial character of the surrounding landscape. Thus, it is assessed that residual operational phase visual effects generated by the Proposed Development are *not significant*.

## **11.5 Cumulative Impact of the Proposed Development**

The main source of cumulative impact with regard to landscape and visual relates to the consented Phase 1 of the Kilshane Gas Turbine Power Generation Station development (FW22A/0204 / PL06F.317480).

### **11.5.1 Landscape**

In terms of landscape impacts, the combined proposed and permitted developments represent a further intensification of energy infrastructure development in this location. Indeed, the combined developments will constitute one of the most prominent single land uses in this local context. Nonetheless, both the proposed and its neighbouring developments are considered appropriate development types in terms of the current land use zoning and will not appear incongruous in this landscape context that comprises an array of energy infrastructure and other highly anthropogenic activity of a similar scale and nature such as the Huntstown Power Station to the south.

### **11.5.2 Visual**

With regard to cumulative visual effects, the permitted and proposed developments will generally be viewed together and as such perceived as one single development. When viewed from the L3120 and N2 overpass, the permitted structures will largely screen the lower lying elements of the Proposed Development, with only the exhaust stacks and air intake units visible. Furthermore, the proposed and consented developments will benefit from a high degree of existing screening by the surrounding dense vegetation and other built developments. The extensive landscaping associated with the permitted

Kilshane Phase 1 development will notably offset some of the visual impacts associated with the Proposed Development. This is most apparent from VP6, where mounded berms and extensive planting of native tree species along the western extent of the permitted development will entirely screen the proposed structures.

In addition to cumulative effects from Kilshane Phase 1, it is noted that the proposed Phase 2 development will require a separate / additional 400kV grid connection. Accordingly, it is anticipated that the applicant will submit an application for a new gridline in due course. While the exact route and design details have yet to be finalised, a preliminary alignment indicates a route along part of the L3120 local road and R135 and R121 Regional Roads to the north of the Proposed Development. As the future grid connection will follow the existing road network and will be buried underground, landscape and visual effects are anticipated to be highly localised. Therefore, no notable cumulative effects are anticipated to arise from this future development.

In summary, whilst there will be a notable intensification of energy infrastructure within the study area should the proposed and permitted developments be realised, it is not considered that there will be any significant cumulative impacts.

## **12. ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE**

### **12.1 Introduction**

This section assesses the predicted impacts of the Proposed Development on archaeological, architectural and cultural heritage.

### **12.2 Baseline Environment**

The baseline survey indicates that whilst the Proposed Development will not impact on any recorded archaeological or architectural heritage sites, it is located within a rich landscape which has substantial evidence in the form of recorded archaeological sites and findings from excavations of continuous human habitation from at least the Neolithic to the present day.

### **12.3 Potential Impacts of the Proposed Development**

#### **12.3.1 Construction Phase**

There are no recorded archaeological listed in the Sites and Monuments Record and / or the Record of Monuments and Places within the redline boundary for the Proposed Development.

There are a 25 recorded archaeological sites within the study area, none of which will be impacted directly or indirectly by the construction phase.

There have been a large number of archaeological excavations undertaken within the study area (including within the Proposed Development), many of which recorded archaeological remains from prehistoric to medieval and post-medieval in date.

The site of the Proposed Development has been subjected to geophysical survey and archaeological testing. Whilst these assessments identified archaeological remains to the immediate north of the Proposed Development, no archaeological feature were identified within the Proposed Development lands.

Potential impacts on archaeological and cultural heritage associated with the Proposed Development involves ground disturbance associated with the construction phase. Should archaeological remains survive below surface, then ground disturbance in these areas would remove sub-surface features.

There are three sites within the study area listed in the Record of Protected Structures for Fingal County, all of which are also listed in the Sites and Monuments Record. None of these will be impacted, directly or indirectly, by the Proposed Development.

In the absence of mitigation measures the potential impact of the construction phase of the Proposed Development on archaeological, cultural or architectural heritage during the construction phase is ***permanent, negative and not significant***.

#### **12.3.2 Operational Phase**

There are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operational phase of the Proposed Development.

## 12.4 Mitigation and Residual Effects (Post-Mitigation)

### 12.4.1 Construction Phase

A mitigation strategy for the Proposed Development has been stipulated by Fingal County Council in relation to a previous planning application (Planning reference no FW22A/0204).

- ▶ A suitably qualified archaeological consultant should be appointed to oversee the project from design through to planning and construction phase.
- ▶ Archaeological monitoring of the removal of topsoil across the Proposed Development should be undertaken by a suitably qualified archaeologist under licence to the National Monuments Service of the Department of Housing, Local Government and Heritage.
- ▶ Should archaeological or architectural heritage features, deposits or structures be uncovered during survey should be cleaned by hand, investigated and recorded.
- ▶ Archaeological excavation of features, deposits or structured identified, should be undertaken in advance of construction, in consultation with and under license to the National Monuments Service of the Department of Housing, Local Government and Heritage.

Applying these mitigation measures will ensure that the effect on the archaeology and architectural heritage will be *permanent, neutral* and *imperceptible*.

***Please note that the recommendations given here are subject to the approval of the National Monuments Service, Department of Housing, Local Government and Heritage.***

### 12.4.2 Operational Phase

As there are no potential impacts on archaeological, architectural and cultural heritage expected as a result of the operational phase of the Proposed Development, no mitigation is required.

## 12.5 Cumulative Impact of the Proposed Development

### 12.5.1 Construction Phase

There have been numerous licensed archaeological investigations within the study area, dating from 1998 to 2022, relating to development works. Archaeological features were identified in several of these. Future developments, including the additional turbines proposed as part of the Phase 2 development (Proposed Development) and the future separate / additional 400kV grid connection (subject to a separate application), may result in the uncovering of previously unrecorded archaeological features and therefore impact on them. Should any sub-surface features exist that will be potentially impacted on by the Proposed Development and / or any future proposed developments, they will be archaeologically recorded in advance of construction works in these areas, in consultation with and under license to the National Monuments Service of the Department of Housing, Local Government and Heritage.

The academic knowledge gained from the excavation of these features, has resulted in a net cumulative *permanent, significant, positive* impact.

### 12.5.2 Operational Phase

During operation there is no potential for cumulative impact as there will be no disturbance to ground.

## 13. TRAFFIC AND TRANSPORTATION

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### 13.1 Introduction

This chapter of the EIAR assesses the likely traffic and transportation impacts of the Proposed Kilshane Phase 2 Development on the surrounding area. It considers vehicular, pedestrian, and cycle access throughout the lifetime of the development, with particular focus on the construction and operational phases. The existing environment and proposed infrastructure are described, and the potential effects on the local road network are evaluated. Mitigation measures to prevent or reduce any significant adverse impacts are also outlined.

This chapter was completed by Fernando De Maio and Stephen Dent-Neville of Waterman Moylan Consulting Engineers.

### 13.2 Baseline Environment

The proposed Kilshane Phase 2 development is located within an area defined as “HI – Heavy Industry” under the Fingal Development Plan 2023–2029, which identifies it as suitable for industrial activity. The Subject Site forms part of a larger landholding pertaining to Kilshane Energy. The overall landholding is located Kilshane, Dublin 11, west of the N2 and approximately 2 km northwest of the M50. Surrounding land uses include agricultural fields, logistics hubs, and industrial facilities. The area is well connected by key transport routes such as Kilshane Road, the R135, N2, and M50.

### 13.3 Potential Impacts of the Proposed Development

#### 13.3.1 Construction Phase

There is potential for construction traffic to generate noise and dust effects on the surrounding road network. Construction deliveries to and from the site by heavy good vehicles will impact on noise levels, whilst dust will result from vehicles travelling along site roads and from general earthwork activities.

There is also potential for traffic congestion, particularly during the construction of the upgraded junction and also due to increased construction traffic on the road network which will also perform turning movements in areas that impact traffic.

A number of construction traffic movements will be undertaken by heavy goods vehicles, though there will also be vehicle movements associated with the appointed contractors and their staff. There is potential for construction traffic to have a *moderate negative* effect on the surrounding environment. However, these effects will be of *short-term* duration (i.e. one to seven years).

In addition, a summary of the comparison between the base year two-way traffic flows and the construction traffic flows at each studied junction revealed that Junction 1 and Junction 2 are expected to receive a two-way traffic increase below 5% in both the AM and PM peak hour, representing *neutral* and *not-significant* alterations to the junctions.

#### 13.3.2 Operational Phase

During the operational stage, there is potential for noise and dust emissions to affect the surrounding road network. Additionally, staff-related traffic, including inbound and outbound movements, will contribute to localised congestion, particularly during peak travel periods.

The Kilshane site will include a comprehensive provision of parking spaces, which is expected to accommodate all staff vehicles. Therefore, it is unlikely that staff will need to park outside designated areas, minimising the risk of off-site parking impacts.

These operational impacts are anticipated to result in *not significant, negative, long-term* effects on the surrounding road network.

In addition, a summary of the comparison between the base year two-way traffic flows and the operation traffic flows at each studied junction revealed that Junction 1 and Junction 2 are expected to receive a two-way traffic increase below 5% in both the AM and PM peak hour, representing *neutral and not significant* alterations to the junctions

## 13.4 Mitigation and Residual Effects (Post-Mitigation)

### 13.4.1 Construction Phase

During the construction phase, a range of mitigation measures will be implemented to minimise potential impacts on the surrounding road network and local environment. A Construction Stage Mobility Management Plan will be prepared and overseen by a designated Coordinator to promote sustainable transport among construction staff, including the use of public transport, cycling, and car sharing. Cycle parking, showers, and lockers will be provided on site, while car parking will be limited to senior staff.

A detailed Construction and Traffic Management Plan will also be agreed with the Local Authority prior to works on the site, outlining dedicated haul routes, controlled access and egress points, scheduling of deliveries, and traffic management procedures.

Measures to minimise nuisance will include the use of designated access routes, clear signposting, banksmen for vehicle movements, restricted working hours, and regular monitoring of construction traffic routes. Site control measures such as wheel washing, road cleaning, perimeter hoarding, and covered transport of materials will further reduce dust and debris. Noise impacts will be managed through restricted delivery hours, planning of vehicle movements to minimise queuing and reversing, and the use of quieter reversing alarms and lined transport vehicles.

During the construction phase, traffic impact will likely have a temporary impact on pedestrians and cyclists. Due to the proposed mitigation measures, the effect of the Proposed Development will be temporary and minimised during the construction phase due to the Construction Traffic Management Plan resulting in an overall *negative, not significant* and *short-term* impact on the road network and *neutral, not significant* and *short-term* impact at the junctions.

### 13.4.2 Operational Phase

During the operational phase, a Mobility Management Plan (Travel Plan) will be implemented to promote sustainable travel behavior among staff and reduce reliance on private car use. The plan will be managed by an appointed Transport Coordinator responsible for promoting sustainable modes of transport, monitoring progress, and reporting to both the developer and the Local Authority. Travel Survey will be undertaken to assess modal split and identify opportunities to further increase public transport use, cycling, walking, and car sharing.

With these measures in place, residual operational traffic impacts on the surrounding road network are expected to be minimal. During the operational phase, Junction 1 and Junction 2 are expected to receive a two-way traffic increase below 5% in both the AM and PM peak hour. The two-way traffic increase will create a long-term impact, however, is a not significant alterations to the junctions. Therefore, it is expected that this new traffic will represent a *neutral, not significant* and *long-term* impact.

## 13.5 Cumulative Impact of the Proposed Development

An analysis of the traffic impact of the Proposed Development was carried out. The TII document *Traffic and Transport Assessment Guidelines (2014)* states that impacts are considered significant where traffic generated by a development exceeds 10% on normal networks or 5% on congested networks.

Comparison of the base year two-way traffic flows, construction traffic flows and operational traffic flows showed that Junction 1 and Junction 2 are expected to experience a two-way traffic increase below 5% in both AM and PM peak hours, indicating *neutral* and *not-significant* impacts. Accordingly, no further traffic assessment was required for either the construction or operational phases.

Potential future and committed developments in the surrounding area were also identified, and their trip generation established. However, as the initial comparison already demonstrated increases below the 5% significance threshold, additional detailed assessment or traffic modelling incorporating growth factors and these cumulative trips was not required.

## 14. MATERIAL ASSETS - UTILITIES

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### 14.1 Introduction

This Chapter considers and assesses the effects of the Proposed Development on the material assets, including major utilities within and around the site during the construction and operational phases such as built services (i.e. gas, electricity, telecommunications, etc.). Although Water and Traffic are also considered material assets, these are assessed under separate chapters of this EIAR (Chapter 6: Hydrogeology and Hydrology and Chapter 13 – Traffic and Transportation), respectively). A full description of the development can be found in Chapter 2 – Description of Proposed Development of this EIAR.

### 14.2 Baseline Environment

The proposed Kilshane Phase 2 development is located within an area defined as “HI – Heavy Industry” under the Fingal Development Plan 2023–2029, which identifies it as suitable for industrial activity. The Subject Site forms part of a larger landholding pertaining to Kilshane Energy. The overall landholding is located Kilshane, Dublin 11, west of the N2 and approximately 2 km northwest of the M50. Surrounding land uses include agricultural fields, logistics hubs, and industrial facilities. The area is well connected by key transport routes such as Kilshane Road, the R135, N2, and M50.

### 14.3 Potential Impacts of the Proposed Development

#### 14.3.1 Construction Phase

Electricity will be required during the construction phase. In conjunction with the ESB, the provision of a temporary builders’ power supply will be provided. There is potential for temporary impacts to the local electricity supply network, by way of disruption in supply to the local area during electricity connection works for the Proposed Development. However, this is a potential impact which is likely to be *neutral, slight, and temporary*.

Gas supply will not be required during the construction phase of the Proposed Development. Therefore, the impact is deemed to be *neutral, imperceptible effect*.

Telecommunications will not be operational during the construction phase of the Proposed Development. There is potential for temporary impacts to local supply, by way of disruption during connections works. However, this is a potential impact which is likely to be *neutral, slight, and temporary*.

- ▶ There is a risk of contamination of the existing water supply during the construction of the development when the connection of the trunk watermain to the public water supply is being made.
- ▶ There is a risk of damage to watermain fittings due to high pressure in the existing watermain.
- ▶ There will be a minor water demand for the site office.
- ▶ The Proposed Development will not give rise to any significant long-term adverse impact. Negative impacts during the construction phase will be short-term only.

The construction of the Proposed Development has the potential to cause a *slight, adverse, temporary, and residual impact* on the receiving water supply network.

- ▶ There is a minor risk of ingress of ground water to the surface water network.

The construction of the Proposed Development has the potential to cause a *slight, adverse, temporary, and residual impact* on the receiving foul network.

### 14.3.2 Operational Phase

Stagnation of the water and siltation within the pump set may occur. Silt would be collected at a sump and removed periodically. This is a potential impact which is likely to be *neutral, slight, and temporary*.

The Proposed Development will result in an increase in water demand on the water distribution network. This increase in demand can be catered for in the existing network. Therefore, this impact is deemed to be *neutral, imperceptible, and long-term effect*.

No gas connection is being sought for the site. Therefore, the impact is deemed to be *neutral, imperceptible, and long-term effect*.

The Proposed Development will result in a slight increase in the demand and usage of electricity from the grid when the turbines are not operational. However, once in operation, the Proposed Development will export energy to the grid providing it with more electricity during shortages. Therefore, this impact is deemed to be *positive, imperceptible, and long-term effect*.

No gas connection is being sought for the site. However, the proposed two additional turbines will generate an increase in the natural gas consumption. Therefore, the impact is deemed to be *neutral, imperceptible, and long-term effect*.

Broadband bandwidth demand remains largely similar given that the Proposed Development will be reliant on the permitted installations of Phase 1. Therefore, the impact is deemed to be *neutral, imperceptible, and long-term effect*.

## 14.4 Mitigation and Residual Effects (Post-Mitigation)

### 14.4.1 Construction Phase

All possible precautions shall be taken to avoid unplanned disruptions to any services or utilities during the construction phase of the Proposed Development. It should be noted that a number of mitigation measures proposed in other EIAR chapters are also of relevance to Material Assets and should be referred to when reading this EIAR.

The construction phase mitigation measures include avoidance, reduction and remedy measures as set out within the Development Management Guidelines document. The design and construction of the necessary service infrastructure will be in accordance with relevant codes of practice and guidelines. This is likely to mitigate any potential impacts during the operational phase of the Proposed Development. However, routine maintenance of the site services will be required from time to time. As such, any mitigation measures will be advised by the relevant service provider.

Caution will be exercised with construction surface water runoff towards the existing ditches. Appropriate slit trenching and silt fences will be in place to filter surface water runoff.

The Contractors will maintain a protected Hazard Zone around the existing overhead 110kV transmission lines, extending 10m horizontally from the line of the outermost cable for the duration of the works. This Hazard Zone will include dedicated crossing points height limited to a maximum of 4.2m with a maximum width of 9m. The Hazard Zone will be protected by bollards spaced at no more than 6m apart with warning signs every 20m.

Within the Hazard Zone an Exclusion Zone will be maintained around the individual cables of 4.5m. This line must never be breached to avoid the risk of electrical arcing or flashover.

- ▶ All works will be carried out in accordance with ESB networks methods and standards.
- ▶ Live connections to the existing networks will only be made by ESB networks.

The contractor will prepare and implement a Construction Management Plan which will outline the requirements for the storage and handling of fuel, including the refuelling of vehicles in designated refuelling zones to minimise the risk of spillages, and the impact of spillages should they occur.

#### **14.4.2 Operational Phase**

Mitigation by design will include the surface water attenuated privately in an underground attenuation system in the southern part of the site. It will discharge to the existing ditches at a controlled greenfield runoff rate limited to 16.04l/s. The permitted Phase 1 drainage also includes Class 1 bypass interceptors and full retention petrol interceptors before surface water outfalls to the existing ditch. In addition, SuDS devices such as swales will reduce and slow down the rate of surface water runoff from the site. This will minimise peak flows in the downstream system during major storm events. Gullies and the pump set shall be regularly maintained to avoid blockages.

It is not envisaged that any other remedial or reductive measures will be necessary upon the completion of the development for electricity, gas and telecommunications.

### **14.5 Cumulative Impact of the Proposed Development**

#### **14.5.1 Construction Phase**

There are no environmental impacts envisaged as part of the proposed works provided all mitigation measures are fully implemented.

The 2 no. additional turbines proposed as part of the Phase 2 development will require a separate / additional 400kV grid connection. Accordingly, it is anticipated that the applicant will submit an application for a new gridline in due course. The proposed Phase 2 development will result in a slight increase in the demand and usage of electricity from the grid when the turbines are not operational. However, once in operation, the Proposed Development will export energy to the grid. Therefore, this future 400kV grid connection is deemed to have a *neutral, imperceptible, and long-term* effect.

#### **14.5.2 Operational Phase**

During the operational stage, there would be a minor increased load on the local Water, Storm and ESB network. However, it is anticipated that ongoing upgrades to local existing infrastructure, as well as the implementation of new infrastructure should alleviate any adverse impacts on the existing networks.

## 15. MATERIAL ASSETS – WASTE MANAGEMENT

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### 1.1 Introduction

AWN Consulting undertook the waste management assessment. The receiving environment is largely defined by Fingal County Council (FCC) as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

There will be waste materials generated from excavations, construction of the new development and from the operation of the new development.

### 1.2 Potential Impacts and Mitigation Measures of the Proposed Development

#### 1.2.1 Construction Phase

During the construction phase the mismanagement of waste, including the inadequate storage of waste, inadequate handling of hazardous waste, the use of inappropriate or insufficient segregation techniques, and the use of non-permitted waste contractors, would likely lead to negative impacts such as waste unnecessarily being diverted to landfill, litter pollution which may lead to vermin, runoff pollution from waste, fly tipping and illegal dumping of waste. In the absence of mitigation, the effect on the local and regional environment is likely to be *long-term, significant* and *negative*.

#### 1.2.2 Operational Phase

The potential impacts on the environment during the operational phase of the Proposed Development would be caused by improper, or lack of waste management. In the absence of mitigation, the effect on the local and regional environment is likely to be *long-term, significant* and *negative*.

### 1.3 Residual Effect of the Proposed Development

#### 1.3.1 Construction Phase

During the construction phase, typical construction waste materials will be generated which will be segregated on-site into appropriate skips/containers, within designated waste storage areas and removed from site by suitably permitted waste contractors as required, to authorised waste facilities, by appropriately licensed waste contractors. While the accurate keeping of waste records will be undertaken. All waste leaving the site will be recorded and copies of relevant documentation maintained.

This will all be overseen by the main Contractor, who will appoint a construction phase Resource Manager (RM) to ensure effective management of waste during the excavation and construction works. All construction staff will be provided with training regarding the waste management procedures on site.

A carefully planned approach to waste management and adherence to the site-specific Resource and Waste Management Plan (Appendix 15.1) and Chapter 15 during the construction phase, this will ensure that the effect on the environment will be *short-term, neutral* and *imperceptible*.

#### 1.3.2 Operational Phase

During operation, the development will generate small volumes of non-hazardous waste, primarily from staff and office activities. Waste will be segregated on-site into categories such as general waste, recyclables, confidential paper, and food waste, and stored in designated areas. Estimated total waste

generation is approximately 0.31 m<sup>3</sup> per week, based on the AWN Consulting Waste Generation Model and data from existing facilities.

Mitigation measures have been provided in Section 15.6.2 of the EIAR and are included as part of this submission. These measures outline a strategy for segregation at source, storage, and collection of wastes generated during the operational phase. Waste streams will include, but are not limited to, dry mixed recyclables, organic waste, glass, mixed non-recyclables, cardboard, plastic, WEEE, batteries, oils and filters, light bulbs, cleaning chemicals, and furniture.

Provided these measures are implemented and a high rate of reuse, recycling, and recovery is achieved, the predicted effect of the operational phase on the environment will be *long-term, neutral, and imperceptible*, in compliance with relevant waste management legislation and local bye-laws.

## 1.4 Cumulative Impact of the Proposed Development

### 1.4.1 Construction Phase

There are existing residential and commercial developments nearby, along with multiple permissions remaining in place within the area. In the event of overlapping construction phases or concurrent development, cumulative impacts could arise. However, due to the high number of permitted waste contractors operating within the Dublin area, as listed by the National Waste Collection Permit Office and the EPA, there is sufficient capacity to manage waste generated from multiple sites simultaneously, if required. Similar waste streams would be generated across these developments, allowing for consistent segregation and recycling practices.

Other developments in the area will also be required to manage waste in compliance with national and local legislation, policies and plans, which will mitigate against any potential cumulative effects. As such, the cumulative effect will be *short-term, imperceptible* and *neutral*.

### 1.4.2 Operational Phase

There are existing residential and commercial developments nearby, along with multiple permissions remaining in place within the area. All current and potential developments will generate similar waste types during their operational phases. Authorised waste contractors will collect waste materials segregated, at a minimum, into recyclables, organic waste, and non-recyclables. The availability of licensed waste contractors and recycling facilities in the Dublin region will ensure sufficient capacity to manage these waste streams, and an increased density of development may improve collection efficiencies.

Other developments in the area will also be required to manage waste in compliance with national and local legislation, policies, and plans, which will mitigate any potential cumulative impacts associated with waste generation and waste management. As such, the cumulative effect will be a *long-term, imperceptible* and *neutral*.

### 15.1.1 Decommissioning Phase

The Proposed Development will have an operational lifespan of 25 years, after which decommissioning will involve dismantling or demolition of structures and removal of associated infrastructure. Other developments in the area may also undergo decommissioning in the future, which could result in cumulative waste generation. However, all such activities will be required to comply with national and local waste legislation, ensuring segregation, reuse, and recycling wherever feasible. Licensed waste contractors and recycling facilities within the Dublin region provide sufficient capacity to manage waste from multiple projects concurrently. Therefore, the cumulative effect of decommissioning on waste infrastructure is predicted to be *short-term, not significant* and *neutral*.

## 16. INTERACTIONS

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This chapter of the EIA Report in accordance with the guidance, the potential interactions and inter-relationships between the environmental factors discussed in the preceding chapters. This covers both the construction and operational phase of the Proposed Development.

Directive 2011/92/EU, as amended by Directive 2014/52/EU, and section 171A of the Planning and Development Act, as amended, both provide that an EIA shall identify, describe and assess in an appropriate manner, in the light of each individual case, the interaction between the following factors:

- ▶ Human beings, fauna and flora population and human health;
- ▶ Biodiversity, with particular attention to species and habitats protected under directive 92/43/eec and directive 2009/147/ec;
- ▶ Land, soil, water, air and climate and landscape;
- ▶ Material assets, cultural heritage and the landscape.

In summary, the interactions between the environmental factors and impacts discussed in this EIAR have been assessed and the majority of interactions are neutral or negative interactions. Negative interactions are generally associated with the construction phase and will be short-term in nature. There are some long-term positive interactions associated with the operation of the Proposed Development.

There are no significant negative impacts predicted from the interactions of the constituent elements of the Proposed Development when viewed in the light of their associated mitigation measures.