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ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) FOR THE PROPOSED COUNNAGAPPUL WIND FARM, CO. WATERFORD

VOLUME 2 – MAIN EIAR

CHAPTER 1 - INTRODUCTION

Prepared for:
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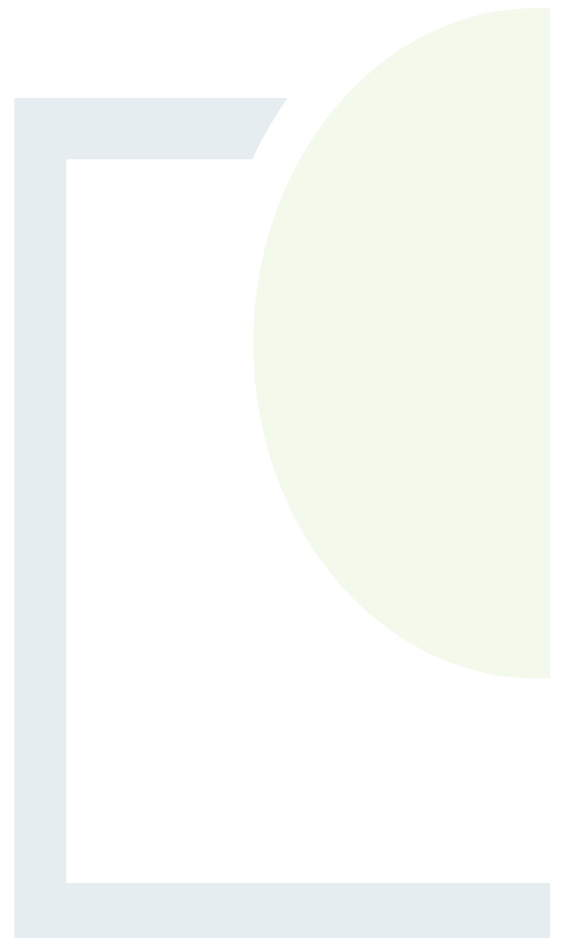


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1. INTRODUCTION

Fehily Timoney and Company (FT) has prepared this Environmental Impact Assessment Report (EIAR) on behalf of Coumna gappul Wind Farm Limited, a subsidiary of EMP Energy Limited (EMPower), who intend to apply to An Bord Pleanála for planning permission to construct a wind energy development in County Waterford, within the townlands of Bleantasourmountain, Carrigbrack, Coumna gappul, Glennaneanemountain, Kilkeany, Knocavanniamountain and Reanadampaun Commons.

A full description of the Proposed Development, including the turbine delivery route and grid connection route is provided in Chapter 2 – Development Description of this EIAR which should be read in conjunction with the figures presented in Volume IV of this EIAR: an overview of the Proposed Development is shown in Figure 2.1, general layouts of the proposed wind farm site (Site), grid connection (GCR) and turbine delivery route (TDR) are presented in Figures 2.2 to 2.4.

This EIAR takes into account the project as a whole, and all direct and indirect effects, the cumulative effects and their interactions, including all relevant ancillary and subsidiary elements of the overall development.

1.1 Applicant

The application for the Proposed Development is being made by Coumna gappul Wind Farm Limited, a subsidiary of EMP Energy Limited (EMPower). EMPower is an Irish based international wind and solar energy developer with over 700 MW in development in Europe and Africa. EMPower’s senior management team has a combined 95 years’ experience delivering projects from conception to operation across five continents. EMPower’s vision is to provide low carbon, ecologically non-invasive, affordable energy to facilitate Ireland’s expanding economy and sustainable energy targets.

1.2 Brief Description of the Proposed Development

The Proposed Development assessed in this EIAR comprises the following elements:

- The wind farm site (referred to in this EIAR as the ‘Site’);
- The grid connection (referred to in this EIAR as the ‘GCR’);
- The turbine delivery route (referred to in this EIAR as the ‘TDR’).

The Proposed Development location is described in detail in Chapter 2 - Development Description. The Site is located in County Waterford and includes lands in the townlands of Bleantasourmountain, Carrigbrack, Coumna gappul, Glennaneanemountain, Kilkeany, Knocavanniamountain and Reanadampaun Commons. The GCR is wholly located in County Waterford and is 22.47 km in length. The TDR is 73.2 km in distance, with a short section (10.5 km) located along the roads within south County Kilkenny and the remaining sections along roads within County Waterford.



The Proposed Development will comprise 10 turbines with a tip height of 185 m, and associated infrastructure including internal access tracks, hard standings, permanent meteorological mast, onsite substation, internal electrical and communications cabling, temporary construction compound, drainage infrastructure and all associated works related to the construction of the wind farm as well as measures designed to protect and enhance existing habitats and a connection to the National Electricity Grid (NEG).

It is proposed to connect the development via underground cable to the existing Dungarvan 110kV substation. The proposed grid connection for the Coumnagappul Wind Farm is approximately 22.47km in length and runs in a northerly direction from the existing Dungarvan 110kV Substation. The proposed connection route utilizes approximately 17,339m of public road, and approximately 5,031m of wind farm access track and a small section (100m) of private land.

Large components associated with the wind farm construction e.g. turbine blades and tower sections, will be transported to site via the identified turbine delivery route (TDR). The proposed access route to site is as follows:

- Loads would depart the port and join the N29 travelling north west;
- Loads will turn left and join the westbound N25;
- Loads will turn right onto the N72 and continue west;
- Loads will turn right onto the R672 and travel north west;
- Loads would turn right at Clooncogaile Cross Roads to join the unclassified road eastbound;
- Loads would turn left at Ford's Cross Roads to join the unclassified road northbound; and
- Loads would turn right at Bryan's Cross Roads to follow the original route on the L5119 eastbound to site.

The proposed development for which consent is being sought will consist of the following:

- Construction of 10 no. wind turbines with a blade tip height of 185 m, a hub height of 104 m and a rotor diameter of 162 m.
- Construction of permanent turbine foundations and crane pad hardstanding areas and associated drainage;
- Construction of 25.43 km of new internal access tracks and associated drainage infrastructure;
- Upgrading of 2,580 m of existing tracks and associated drainage infrastructure;
- Creation of 1 no. new construction and operation access to the wind farm Site;
- Creation of 1 no. new construction and operation access to the permanent meteorological mast;
- All associated drainage and sediment control including interceptor drains, cross drains, sediment ponds and swales;
- Installation of new watercourse crossings including a 15m single span bridge crossing, an open bottomed culvert and a piped culvert;
- Removal and replacement of existing culverted watercourse and drain crossings along the cable route;
- Construction of 1 no. permanent onsite 110kV electrical substation and associated compound including:
 - Welfare facilities;
 - Electrical infrastructure;



- Parking;
- Wastewater holding tank;
- Rainwater harvesting tank;
- Security fencing;
- All associated infrastructure, services and site works including excavation, earthworks and spoil management;
- Development of 1 no. on-site borrow pit (150m L X 100m W /X 14m D) and associated ancillary drainage which will also act at a peat /spoil deposition area;
- 2 no. temporary construction compounds and associated ancillary infrastructure including parking;
- Forestry felling of 5.4 ha (53,995 m²) to facilitate construction and operation of the proposed development;
- Installation of medium voltage electrical and communication cabling underground between the proposed turbines and the proposed on-site substation and associated ancillary works;
- Installation of 22.47 km of high voltage (110kV) and communication cabling underground between the proposed on-site substation and the existing Dungarvan Substation and associated ancillary works. The proposed grid connection cable works will include 6 no. existing watercourse and drain crossings, three of which will be crossed by Horizontal Directional Drilling. The grid also includes the installation of 30 no. pre-cast joint bays.
- Erection of 1 no. permanent meteorological mast to a height of 110m above ground level with a 4m lightning pole on top.
- Temporary enabling works to accommodate turbine delivery
 - Load bearing surfaces and temporary watercourse and drain crossings
 - Temporary removal of road signage, utility poles, bollards and fencing.

The Proposed Development will have a defined planning boundary which will include the turbines and the ancillary infrastructure listed above.

The associated project components subject to EIA but for which planning consent is not being sought within the current application are set out hereunder.

Certain temporary accommodation works associated with the Turbine Delivery Route and provision of passing opportunities along the local road network to facilitate the delivery of turbine components and haulage to Site including hedge or tree cutting, relocation of powerlines/poles, lampposts, signage and local road widening. For these locations, works associated with private lands and road infrastructure have been identified and assessed in the EIAR, however, permission for these works will be sought separately with the local Planning Authority (Waterford City and County Council), through consultation and agreement with ESB and also through road opening license as necessary.

1.2.1 Turbine Parameters used for EIAR Assessments

The Proposed Development will comprise 10 Vesta V162 turbines with fixed dimensions as follows:

- The blades of the Vestas V162 turbine are 81 m in length with a width (maximum chord length) of 4.3 m. The swept area of the blades is 20,612 m². The rotor diameter is 162 m.
- The turbines will have a hub height of 104 m and a tip height of 185 m.



- The Vesta V162 turbines has a flexible power output rating of 6.0 MW, 6.2 MW, 6.8 MW and 7.2 MW. The Proposed Development will have an Export Capacity ranging from 60.0 MW to 72.0 MW depending on the power rating employed.

1.2.2 Permission Period

A 10-year planning permission is being requested for this Proposed Development. That is, planning consent for the construction of the development would remain valid for ten years following the grant of permission. We note that the Wind Energy Development Guidelines (2006) state that:

“Planning Authorities may grant permission for a duration longer than 5 years if it is considered appropriate, for example, to ensure that the permission does not expire before a grid connection is granted. It is, however, the responsibility of the applicants in the first instance to request such longer durations in appropriate circumstances”.

A 10-year planning permission is considered appropriate for a development of this size to ensure all consents are in place.

The Applicant requests the grant of permission is on the basis of a 40-year operational life from the date of full operational commissioning of the wind farm. The anticipated minimum useful lifespan of wind turbines which are being produced for the market today is 35-40 years. The lifespan of wind turbines has been increasing steadily in recent years and allowing this duration will improve the overall carbon balance of the development, therefore maximising the amount of fossil fuel usage that will be offset by the wind farm. Leaving the wind turbines in-situ until the end of their useful lifespan would be optimum from an environmental viewpoint, particularly in relation to carbon savings.

Additionally, the civil infrastructure (e.g. foundations) will be designed in accordance with Eurocode 0: Basis of Structural Design and Eurocode 2: Design of Concrete Structures which require a structural reliability / design working life of 50 years.

After this 40-year operational life, the Developer will decide whether to replace or decommission the turbines. It should be noted that section 7.20 of the Wind Energy Development Guidelines (2006) includes for the following: “The inclusion of a condition which limits the life span of a wind energy development should be avoided, except in exceptional circumstances”.

A permanent planning permission is being sought for the Grid Connection and Substation as these will become an asset of the national grid under the management of EirGrid and will remain in place upon decommissioning of the wind farm.

1.3 Alternatives to the Proposed Development

The requirement in relation to alternatives in the EIA process is set out in Directive 2011/92/EU, amended by Directive 2014/52/EU, in Article 5 (1)(d), which states that an EIAR should include:

“a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment” Article 5(1)(f) of the EIA Directive requires that the EIAR contains “any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.”



The reasonable alternatives examined by the Applicant, which are relevant to the Proposed Development and its specific characteristics, including the site selection process, alternative design philosophies, alternative site layouts, the do-nothing alternative are set out in Chapter 3 - Site Selection and Alternatives.

1.4 Need for the Proposed Development

The proposed Coumragappul Wind Farm is necessary to produce renewable energy for the Irish national grid in order to transition Ireland to a low carbon economy. The Proposed Development will have an Export Capacity ranging from 60.0 MW to 72.0 MW depending on the power rating employed.

At a strategic level, the need for the Proposed Development is supported by International, European, and National environmental and energy commitments and policies. In Chapter 4-Policy of this EIAR, a detailed analysis of these commitments and policies is outlined. This is in the context of substantial and continuing failure by Ireland in meeting climate targets to date, as copper fastened in the EPA's Greenhouse Gas (GHG) emissions projections for the period 2022-2040 as published on June 02, 2023, which indicates that Ireland will fall short its climate targets. Despite this, increased renewable energy generation, from wind and solar, if delivered as planned in the Climate Action Plan 2023 (CAP23), can reduce Energy Industry emissions by 60 per cent and achieve over 80 per cent renewable electricity generation by 2030.

CAP23 provides a framework for delivering the Government's target of a 51% reduction (relative to 2018) in greenhouse gas (GHG) emissions by 2030. CAP23 follows the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a legally binding target of net zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030.

1.4.1 Climate Change

The scientific community and governments across the world are in agreement that the global climate is changing at a unnatural rate. This is due to human activities which have significantly contributed to natural climate change through our emissions of greenhouse gases. This interference is resulting in increased air and ocean temperatures, drought, melting ice and snow, rising sea levels, increased rainfall, flooding and other influences.

On the launch of the Climate Action and Low Carbon Development (Amendment) Bill (2021), the then sitting Taoiseach, Michéal Martin, remarked that:

“The impact of our actions on the planet is undeniable. The science is undisputed. Climate change is happening, and we must act.” (Government of Ireland, 2020)

The current CAP 23 sets out actions to cut emissions and make Ireland a zero-carbon economy by 2050. The Climate Action and Low Carbon Development (Amendment) Act 2021 establishes a legally binding framework with clear targets and commitments set in law, and ensure the necessary structures and processes are embedded on a statutory basis to ensure Ireland achieves its national, EU and international climate goals and obligations in the near and long term through a process of carbon budgeting, with the Irish government committed to “reducing emissions by 51% over 2018 – 2030.” The Climate Action Plan seeks a total installation of 9 GW of onshore wind capacity by 2030.

The EPA (June 2023) notes that in order to meet the ambitious CAP23 targets “... Ireland needs to fully implement the actions in the 2023 Climate Action Plan that have been defined; firm up the actions that currently don’t have associated policies and measures, such as diversification in agriculture; and identify and implement further policies and measures”.



The Proposed Development will have an Export Capacity (MEC) of electricity ranging from 60.0 MW to 72.0 MW depending on the power rating employed. This will result in the net displacement of approximately 79,417 - 95,365 tonnes of CO₂ per annum depending on the power rating employed as detailed in Chapter 7: Air and Climate. The proposed Coumna gappul Wind Farm will provide renewable energy to the national grid, offsetting the need for burning of fossil fuels. This is necessary to meet the challenges of future climate change and meet the CAP23 targets.

The proposed Coumna gappul Wind Farm will assist in mitigating the effects of climate breakdown and help Ireland achieve its climate neutral economy by no later than 2050, within the ‘National Climate Objectives’, as set out in the Climate Action and Low Carbon Development (Amendment) Act 2021.

1.4.2 EU Renewable Energy Targets and National Policy

As further detailed in Chapter 4 of this EIAR, Ireland has adopted binding agreements to reduce dependency on fossil fuels and increase energy production from sustainable sources, creating a requirement for the nation to transition to a low carbon economy.

This is supported by the latest Programme for Government (2020) ‘Our Shared Future’ which presents strong climate governance in rapidly reducing climate change in order to protect and improve public health and quality of life. The government are committed to rapid decarbonisation of the energy sector with an aim of providing the necessary actions to deliver national renewable electricity targets.

The 2030 Climate and Energy Framework (European Commission, 2014) adopted by the EU sets out a framework for the long-term perspective beyond 2020 targets. The 2030 Climate and Energy Framework sets out three key targets for the year 2030:

- At least 40% cuts in greenhouse gas emissions (from 1990 levels)
- At least 32% share of renewable energy
- At least 32.5% improvement in energy efficiency.

Further to this the European Commission in 2016 published its 2030 emissions targets break down for each Member State. While the overall EU target is a reduction of 40% on 1990 greenhouse gas emissions by 2030, every Member State negotiates an individual target. Ireland will have to reduce its emissions by 30% relative to its 2005 emissions.

The 2050 “Roadmap for a competitive low-carbon Europe” (European Commission, 2011) suggests that by 2050, the EU should cut greenhouse gas emissions to 80% below 1990 levels. This would require 40% emissions cuts by 2030 and 60% by 2040. This is in line with EU leaders’ commitment to reducing emissions by 80-95% by 2050. Ireland is likely to face equivalent mandatory targets from the EU.

Ireland has adopted these targets into the Climate Action Plan (2023) which includes a target to increase electricity generated from renewable sources to 80% by 2030. This will require more than doubling Ireland’s production of electricity from renewable sources, which stood at 36.5% in 2019 (SEAI, 2020). The 2030 target sets out the pathway to the goal of net zero greenhouse gas emissions by 2050.



To achieve 80% renewable energy production by 2030, substantial new development will be required. The CAP sets out targets as follows which rely heavily on wind energy technology:

- Electricity must reduce emissions somewhere between 62% and 81%, a difference of 19%.
- Increasing the share of electricity demand generated from renewable sources to up to 80% where achievable and cost effective, without compromising security of electricity supply.
- Expand and reinforce the grid – through the addition of lines, substations, and new technologies.

The binding EU targets have been transposed into Irish National Policy in the Climate Action Plan 2023 (CAP 23) which focuses a large amount of future electricity production on the wind energy sector. This demonstrates the significance of wind energy in the Irish energy context and highlights the need for the proposed Coumragappul Wind Farm in reaching both EU and national renewable energy targets.

1.4.3 Energy Security

Secure supplies of energy are essential for Ireland's economy and for maintaining safe and comfortable living conditions. Energy import dependency is a significant indicator of the country's energy security. Ireland is one of the most energy import-dependent countries in the European Union, importing 80% of its fuel in 2021 (SEAI, 2022). The largest share of energy imports in 2021 was oil, accounted for 65.4% of total energy imports, natural gas 24.1%, coal 7.7%, electricity 1.6% and renewables 1.2%. Import dependency has increased steadily since 2018 as the output from the Corrib gas field continues to decline.

Price volatility of fossil fuels may increase as carbon prices escalate in the future. The cost of carbon credits is included in all electricity trade, and the price of electricity generated by coal is particularly vulnerable due to the high carbon emissions per unit of electricity generated. Coal still generates a significant amount of Ireland's electricity with 7.7% of electricity produced by coal in 2021 (SEAI, 2022). However, the previous programme for government called for a review of options to replace coal with low carbon alternatives within a decade as reflected in the CAP (2019). Gas imports have increased due the decline in production of the Corrib gas field, and oil imports have remained steady (SEAI, 2022).

The Energy White Paper, Ireland's Transition to a Low Carbon Energy Future 2015-2030 (DoCENR, 2015) sets out a framework to guide policy and actions that the government intends to take in the energy sector. The paper notes that "There will be substantial increases in the cost of carbon in the short and medium term, through the EU Emissions Trading Scheme". The electricity produced by the proposed Coumragappul Wind Farm will reduce dependence on imported fossil fuels and add to financial autonomy and energy stability in Ireland, further emphasising the need for the proposed development.

Furthermore, the EU have rewritten the energy policy framework in the Clean Energy for all Europeans Package (2019). Member states must meet new commitments to improve energy efficiency and the take-up of renewables in their energy mix by 2030. For example, the new rules on the electricity market, which have been adopted, will make it easier for renewable energy to be integrated into the grid, encourage more inter-connections and cross-border trade, and ensure that the market provides reliable signals for future investment. This EU policy framework encourages energy security for all EU member states, emphasising a need for renewable energy and a move away from fossil fuels.



1.4.4 Competitiveness of Wind Energy and Economic Benefits of the Coumna­gappul Wind Farm

In addition to helping Ireland reduce environmentally damaging emissions and helping avoid significant fines from the EU, the Coumna­gappul Wind Farm will also contribute positively to the national and regional economy.

SEAI, in its report Energy in Ireland (SEAI, 2022), indicated that in 2021 wind energy:

- Generated 28% of all electricity;
- Avoided 4.0 million tonnes of CO2 emissions.

Additionally, a report published by Baringa in January 2019 states that:

“Our analysis indicates that the deployment of 4.1 GW of wind generation capacity in Ireland between 2000 and 2020 will result in a total net cost to consumers, over 20 years, of €0.1bn (€63 million to be exact), which equates to a cost of less than €1 per person per year.” (Baringa, 2019).

Notwithstanding the above financial costs and benefits, the Baringa report outlines that wind generation in Ireland avoids:

“33 million tonnes of power sector CO2 emissions. The total carbon emissions from electricity generation in 2017 was 11.7 Mt, so a saving of 33 Mt is equivalent to almost 3 years of total carbon emissions in the electricity sector today. 137 TWh of fossil fuel consumption at a saving of €2.7bn. In comparison, Ireland consumed 44 TWh (3814 ktoe) of fossil fuels for electricity generation in 2017, so a saving of 137 TWh is equivalent to 3 years of current fossil fuel consumption for electricity generation.”

In conclusion, the need for the Coumna­gappul Wind Farm development is a result of the need for action to fight against climate change by reducing consumption of fossil fuels. Ireland has accepted this need in entering into binding renewable energy targets with the European Union with an overall aim to become carbon neutral by 2050. The government has indicated that wind energy will play a key role in providing renewable electricity to the national grid. This will comprise of an increase of 9 GW of onshore wind capacity by 2030 (CAP23). The increase in domestic renewable energy of 60MW to 72MW as a result of the Coumna­gappul Wind Farm will also assist Ireland in improving resilience in energy security by reducing the requirement for import of fossil fuels.

1.4.5 Community Benefit

EMPower will set up a community benefit fund which will allocate funds from the wind farm to community groups in the area should the wind farm be granted planning permission and be successful under the Government’s RESS support programme.

If consented, the proposed Coumna­gappul Wind Farm will require an approximate €88 million investment and will provide sustainable, low carbon energy generation infrastructure to meet Ireland's growing demand. The development benefits to the local community would include significant investment in local infrastructure and electrical systems, local job creation, and a contribution of approximately €21 million in Waterford City and County Council rates over the project lifetime of 40 years.



If consented the Proposed Development will also provide a community fund calculated in accordance with the Renewable Electricity Support Scheme (RESS) Terms and Conditions at €2 per MW/h of electricity produced by the project. This is to be made available to the local community for the duration of the RESS (15 years). The average capacity factor of wind energy projects in Ireland is 28.3% (SEAI, 2019). Assuming this efficiency, and a capacity of c.68MW, the community benefit fund would amount to an average of €337,155 per annum. The actual fund will vary around this average from year to year, depending on each year's wind conditions. 40% of the fund will be allocated to not-for-profit community enterprises, with an emphasis on low carbon initiatives. The remainder of the fund will be directed towards local clubs, societies and other initiatives. It is envisaged that the communities nearest the Proposed Development will benefit most from the Community Fund.

It is proposed that an annual payment of €1,000 will be provided to each household within 1km of any proposed turbine. An annual payment of €500 will be provided to each household located between 1km and 2km of a turbine. It is proposed that these payments will be fixed and will not fluctuate.

1.5 Requirement for EIAR

Under Section 172 of the Planning and Development Act, 2000 (as amended), a planning application for a development which comes within a class of development specified under Schedule 2 of Part 5 of the Planning and Development Regulations must be accompanied by an Environmental Impact Assessment Report. The following are the relevant classes of EIA Development in Part 2 of Schedule 5:

- Class 3(i) "Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts."
- Class 10(dd) "All private roads which would exceed 2000 metres in length"
- Class 15 "Any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development, but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7".

The proposed development meets the mandatory threshold for EIA. Therefore, an EIAR has been prepared in accordance with the Planning and Development Act 2000 (as amended) and Planning and Development Regulations 2001 (as amended) and Directive 2011/92/EU as amended by Directive 2014/52/EU.

The European Union Directive 2011/92/EU (the EIA Directive) as amended by Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment, requires Member States to ensure that a competent authority (in this instance An Bord Pleanála) carries out an appraisal of the environmental impacts of certain types of project, as listed in the Directive, prior to development consent being given for the project.



1.5.1 Strategic Infrastructure Development

In relation to projects that may be deemed to be Strategic Infrastructure Development (SID), Part 1 of the Seventh Schedule of the Planning and Development Act 2000 (Act), as amended, specifies, inter alia, the following classes of development: “An installation for the harnessing of wind power for energy production (a wind farm) with more than 25 turbines or having a total output greater than 50 megawatts.” Once an SID determination request is made by a prospective applicant, An Bord Pleanála (the Board) must satisfy itself that the development meets one or more of the conditions set out in section 37A(2) of the Planning and Development Act 2000 as amended, namely:

- the development would be of strategic economic or social importance to the State or the region in which it would be situate,
- the development would contribute substantially to the fulfilment of any of the objectives in the National Planning Framework or in any regional spatial and economic strategy in force in respect of the area or areas in which it would be situate,
- the development would have a significant effect on the area of more than one planning authority.

Background

On 19th January 2021 the Applicant opened pre-application consultation under Section 37B of the Planning and Development Act, 2000 (as amended) with An Bord Pleanála for a development of 11 no. wind turbines in County Waterford. An initial pre-application consultation meeting was held with An Bord Pleanála on the 22nd April 2021 (ABP-309259-21).

A second pre-application consultation meeting was held with An Bord Pleanála on the 25th May 2022. It was noted to An Bord Pleanála's representatives that through the design refinement process the number of turbines had now reduced to 10 no. turbines and associated infrastructure, and that the Proposed Development would include the Vesta V162 turbine with a flexible power rating.

A third, and final meeting was held on the 18th November 2022. On the 19th December 2022 Fehily Timoney, on behalf of the Applicant, sought to close the consultation process with An Bord Pleanála.

On the 23rd May 2023, An Bord Pleanála decided that the Proposed Development falls within the scope of Strategic Infrastructure Development under Section 37A of the Planning and Development Act 2000 (as amended).

Copies of correspondence and meeting minutes are included in Appendix 1.1 Volume III.

1.6 EIAR Methodology and Structure

The Environmental Impact Assessment Report (EIAR) is a report of the effects, if any, which a proposed development, if carried out, would have on the environment. The EIAR provides the Competent Authority and the public with a comprehensive understanding of the project, the existing environment, the significant impacts of the project on the environment and the mitigation measures proposed.



Article 3 of the EIA Directive as amended states that an “environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:

“(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d)”

The effects referred to above shall include the expected effects deriving from the vulnerability of the project to risks of major accidents and /or disasters that are relevant to the project concerned.

1.6.1 EIAR Methodology

The EIAR has been prepared in accordance with Directive 2011/92/EU as amended by Directive 2014/52/EU (the EIA Directive). Schedule 6 of the Planning and Development Regulations 2001 (as amended) and Article 5 of the EIA Directive set out the information to be contained in an EIAR.

In addition, in the preparation of this EIAR, a scoping of effects of the Proposed Development was carried out to identify effects thought to be potentially significant, not significant or uncertain.

Consultation with the relevant private and public agencies ensured that likely significant effects were addressed. Details of the consultation carried out are outlined in Chapter 5: EIA Scoping and Consultation.

Schedule 6 of the Planning and Development Regulations 2001 (as amended) describes the information to be contained in an EIAR

1.

- a) A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development;
- b) A description of the likely significant effects on the environment of the proposed development;
- c) A description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment of the development;
- d) A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment.

2. Additional information, relevant to the specific characteristics of the development or type of development concerned and to the environmental features likely to be affected, on the following matters, by way of explanation or amplification of the information referred to in paragraph 1:



- a) A description of the proposed development, including in particular –
- i. A description of the location of the proposed development;
 - ii. A description of the physical characteristics of the whole proposed development, including, where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases;
 - iii. A description of the main characteristics of the operational phase of the proposed development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; and;
 - iv. An estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during construction and operation phases.
- b) A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects;
- c) A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge;
- d) A description of the factors specified in paragraph (b)(i) (I) to (V) of the definition of ‘environmental impact assessment’ in section 171A of the Act likely to be significantly affected by the proposed development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape;
- I. a description of the likely significant effects on the environment of the proposed development resulting from, among other things-
- i. the construction and existence of the proposed development, including, where relevant, demolition works,
 - ii. the use of natural resources, in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources,
 - iii. the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste,
 - iv. the risks to human health, cultural heritage or the environment (for example due to accidents or disasters),
 - v. the cumulation of effects with other existing or approved developments, or both, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources,
 - vi. the impact of the proposed development on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the proposed development to climate change, and;
 - vii. the technologies and the substances used, and;



- II. the description of the likely significant effects of the factors specified in paragraph (b)(i)(I) to (V) of the definition of ‘environmental impact assessment’ in section 171A of the Act should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the proposed development, taking into account the environmental protection objectives established at European Union level or by a Member State of the European Union which are relevant to the proposed development.
- e) A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information, and the main uncertainties involved;
- f) A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of an analysis after completion of the development), explaining the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset during both the construction and operational phases of the development;
- g) A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it. Relevant information available and obtained through risk assessments pursuant to European Union legislation such as the Seveso III Directive or the Nuclear Safety Directive or relevant assessments carried out pursuant to national legislation may be used for this purpose, provided that the requirements of the Environmental Impact Assessment Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for, and proposed response to, emergencies arising from such events

The assessment of environmental impacts has been conducted in accordance with the guidance set out in the following documents:

- *Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (EC, 2017)*
- *Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022)*
- *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (DoHPLG, 2018)*
- *Wind Energy Development Guidelines for Planning Authorities (DoEHLG, 2006)*
- *European Commission Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment, EU 2013*
- *European Commission notice: Guidance document on wind energy developments and EU nature legislation (2020).*



The EIAR firstly sets out the planning context, the background to the project, the need for the development, a description of the evolution of the project through the alternatives considered and a description of the proposed development. This sets the reader in context as to the practical and dynamic process undertaken, in order to arrive at the layout and design of the proposed development that will cause least impact on the environment.

Subsequent chapters deal with specific environmental topics for example, traffic & transportation, air quality & climate change, hydrology & water quality, noise, etc. These assessments involve specialist studies and evaluations. The methodology applied during these specific environmental assessments is a systematic analysis of the proposed development in relation to the existing environment. The broad methodology framework for these assessments is outlined below and is designed to be clear, concise and allow the reader to logically follow the assessment process through each environmental topic. In some instances, more specific topic related methodologies are outlined in the relevant chapters of the EIAR.

The broad methodology framework used in all chapters includes:

- Introduction;
- Methodology;
- Existing Environment;
- Potential Effects;
- Mitigation Measures;
- Residual Impacts.

Introduction

This section generally introduces the environmental topic to be assessed and the areas to be examined in the assessment.

Methodology

Specific topic related methodologies are outlined in this section. This will include the methodology used in describing the existing environment and undertaking the impact assessment. It is important that the methodology is documented so that the reader understands how the assessment was undertaken. This can also be used as a reference if future studies are required.

Existing Environment

An accurate description of the existing environment is necessary to predict the likely significant impacts of a proposed development. Existing baseline environmental monitoring data can also be used as a valuable reference for the assessment of actual impacts from a development once it is in operation.

To describe the existing environment, desktop reviews of existing data sources were undertaken for each specialist area. This literature review relied on published reference reports and datasets to ensure the objectivity of the assessment.

Desktop studies may also be supplemented by specialised field walkovers or studies in order to confirm the accuracy of the desktop study or to gather more baseline environmental information for incorporation into the EIAR.



The existing environment is evaluated to highlight the character of the existing environment that is distinctive and what the significance of this is. The significance of a specific environment can be derived from legislation, national policies, local plans and policies, guidelines or professional judgements. The sensitivity of the environment is also described.

Potential Effects

In this section, individual specialists predict how the receiving environment will interact with the proposed development. The full extent of the proposed development's potential effects and emissions before the proposed mitigation measures are introduced is outlined here. Potential impacts from the construction, operational and decommissioning phases of the proposed development are outlined. Interactions and cumulative impacts with other environmental topics are also included in this evaluation.

The evaluation of the significance of the impact is also undertaken. Where possible, pre-existing standardised criteria for the significance of impacts will be used.

Such criteria can include Irish legislation, international standards, European Commission and Environmental Protection Agency (EPA) guidelines or good practice guidelines. Where appropriate criteria do not exist the assessment methodology section states the criteria used to evaluate the significance.

Mitigation Measures

If significant impacts are anticipated mitigation measures are devised to minimise impacts on the environment. Mitigation measures by avoidance, by reduction and by remedy can be outlined.

Residual Effects

The assessment identifies the likely effects that will occur after the proposed mitigation measures have been put in place. These are described in detail and assessment of their significance undertaken.

1.6.2 EIAR Structure

The EIAR has been prepared using the “grouped format structure” as outlined in EPA guidance document (EPA, 2002). Using this structure there is a separate chapter for each topic, e.g. air quality and climate, biodiversity, hydrology. The description of the existing environment, the proposed development and the potential effects, mitigation measures and residual effects are grouped in the chapter. The grouped format makes it easy to investigate topics of interest and facilitates cross-reference to specialist studies.

The EIAR consists of the following chapters:

- Chapter 1 - Introduction
- Chapter 2 - Development Description
- Chapter 3 - Site Selection and Alternatives Considered
- Chapter 4 - Policy
- Chapter 5 - EIA Scoping and Consultation
- Chapter 6 - Population and Human Health
- Chapter 7 - Air Quality and Climate
- Chapter 8 - Noise and Vibration
- Chapter 9 - Biodiversity



- Chapter 10 - Ornithology
- Chapter 11 – Soils, Geology and Hydrogeology
- Chapter 12 – Hydrology and Water Quality & FRA
- Chapter 13 - Shadow Flicker
- Chapter 14 - Traffic and Transportation
- Chapter 15 - Archaeology, Architectural and Cultural Heritage
- Chapter 16 - Landscape and Visual Impact
- Chapter 17 - Material Assets, Telecommunications and Aviation
- Chapter 18 - Interactions of the Foregoing

The EIAR is structured as follows:

Volume 1 – Non-Technical Summary (NTS)

Volume 2 – Main EIAR

Volume 3 – Appendices to the Main EIAR

Volume 4 – Figures and Photomontages

It should also be noted, for the sake of completeness, that a separate Natura Impact Statement (NIS) has also been submitted with the planning application. The application is also supported by Planning Drawings.

1.6.3 Cumulative Effects

The potential cumulative impact of the Project has been assessed in accordance with Annex IV of the EIA Directive as amended which provides that the EIAR must contain a description of the likely significant effects of the project on the environment resulting from the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.

The assessment of projects cumulatively has four principal aims:

1. To establish the range and nature of existing projects within the cumulative effects study area of the Project (which will be topic-specific, e.g. for effects on hydrology the projects located within the same waterbody catchment are considered, for shadow flicker, projects which could have an effect within 10 rotor diameters of the Proposed Development are considered).
2. To summarise the relevant projects which have a potential to create cumulative effects.
3. To establish anticipated significant cumulative effects. Detailed cumulative impact appraisals are included in each relevant section of the EIAR.

The geographic extent of the cumulative assessment is considered on a case-by-case basis, in line with the Guidelines for the *Assessment of Indirect and Cumulative Impacts as well as Impact Interactions* (European Commission, 1999).



The material for the cumulative assessment was gathered through a search of relevant County Councils' Online Planning Registers, the An Bord Pleanála website and the EIA Portal. Relevant EIA documents, planning application details and planning drawings were reviewed, which served to identify the locations of existing and approved projects and projects pending a decision from the planning authority, or An Bórd Pleanála. The relevance of the projects was considered on a case-by-case basis in each chapter as necessary depending on the interaction and likelihood of in combination impacts.

1.7 Scoping and Consultation

The scoping and consultation process was carried out in accordance with the EIA Directive and in accordance with the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022). Further details are contained in Chapter 5 - EIA Scoping and Consultation.

Meetings with Waterford City and County Council

A meeting was conducted online between the Applicant and Waterford City and County Council on 8th September 2021. This was an introductory meeting and was accompanied by a PowerPoint presentation which provided an overview of the Proposed Development.

On 22nd September 2022, the Applicant held a further meeting with Waterford City and County Council which focused primarily on changes to the Wind Energy Strategy within the newly adopted Waterford City and County Development Plan 2022-2028. Regarding the Wind Energy Strategy, the prospective applicant said the site was previously designated as a '*preferred*' area for wind energy development within the 2011-2017 Development Plan but this designation has changed to a 'no go area' within the new Waterford City & Council Development Plan 2022-2028. The prospective applicant said these 'no go areas' are not defined within the new Energy Strategy, but the previous strategy did provide a definition which they are using as a guide and will demonstrate within the EIAR that the proposed development is fit for purpose in this specific location. It was noted that the key justification would be landscape and visual given the location on the foothills of the mountains and ability to utilise the natural horseshoe valley.

1.8 Competent Experts and Quality of the EIAR

Article 5(3) of the amended EIA Directive states that, in order to ensure the completeness and quality of the EIAR, (a) the developer shall ensure the EIAR is prepared by competent experts; (b) the competent authority shall ensure that it has, or has access to, sufficient expertise to examine the EIAR, and (c) where necessary, the competent authority shall seek from the developer any supplementary information, in accordance with Annex IV (the information to be contained in the EIAR), which is directly relevant to reaching a reasoned conclusion on the significant effects of the project on the environment.

The EPA (2022) 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' notes that the amended Directive does not offer a definition of what would be considered competent expertise, and that the assessment may often require a range of experts to cover the full range of the complexity of an environmental factor.

The list of the experts who have contributed to an EIAR, showing which parts of the EIAR they have worked on, their qualifications and experience is presented hereunder in order to allow an assessment of the competency of the team that prepared the EIAR.



1.8.1 Contributors to the EIAR

Fehily Timoney and Company (FT) is a consultancy based in Cork, specialising in civil and environmental engineering, and environmental science. FT is well established as a leading consultancy in wind farm development in Ireland. The company has established a professional team specialising in wind farm development. This team has the support of many in-house engineers, scientists and planners.

FT was retained by the Applicant to undertake the detailed environmental assessment and prepare the EIAR for the Proposed Development, as well as preparing the application for consent for submission to An Bord Pleanála.

Specialist and competent experts that contributed to and are responsible for each EIAR chapter/topic are outlined in Table 1-1. Curricula Vitae of contributors are presented in Appendix 1.2 of Volume III of this EIAR wherein the competence, experience and relevant qualification(s) for each expert is detailed.

Table 1-1: Contributors to the EIAR

| EIAR Topic | Company | Name and Qualifications |
|---|----------------|--|
| Chapter 1 – Introduction | Fehily Timoney | Anthony Ryan, BA, MPlan (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 2 – Description of the Development | Fehily Timoney | Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Author) |
| Chapter 3 – Site Selection and Alternatives | Fehily Timoney | Anthony Ryan, BA, MPlan (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 4 – Policy | Fehily Timoney | Anthony Ryan, BA, MPlan (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 5 – EIA Scoping and Consultation | Fehily Timoney | Anthony Ryan, BA, MPlan (Author) Sinead Lynch, MEng (Co-Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 6 - Population and Human Health | Fehily Timoney | Killian Whyte, BSc, HDipSP, MSc (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 7 – Air Quality and Climate | Fehily Timoney | Sinead Lynch, MEng (Author) Jim Hughes, BA, EIA/SEA Dip, MSc (Reviewer) |
| Chapter 8 – Noise and Vibration | Fehily Timoney | John Cullen, P. Grad. Dip, BAgSc (Author) Maureen Marsden, Meng (Reviewer) |



| EIAR Topic | Company | Name and Qualifications |
|--|----------------|--|
| Chapter 9 – Biodiversity | Fehily Timoney | David Daly, BSc., MSc. (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) Surveyors: (refer to Chapter 9 – Biodiversity for further details) <ul style="list-style-type: none"> • Bill Brazier, B.Sc. (Hons) in Applied Freshwater & Marine Biology • David Daly, BSc., MSc. • Karen Banks, BSc. (Hons) • Ross Macklin Ph.D., B.Sc. (Hons) |
| Chapter 10 – Ornithology | Fehily Timoney | David Daly, BSc., MSc. (Chapter Author) Appendices Authors: <ul style="list-style-type: none"> • Fiona McKenna (BSc.) • Úna Williams (BSc. MSc.) • Monica Kane (MSc. BSc.) • Ken Fitzgerald (BSc) Ornithologists/ Surveyors: (refer to Chapter 10 – Ornithology for further details) <ul style="list-style-type: none"> • John N. Murphy • Eric Dempsey, • Michael O’Clery, • Austin Cooney, • Éinne Ó Cathasaigh • Ger McGrath. Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |
| Chapter 11 – Soils, Geology and Hydrogeology | Fehily Timoney | Aaron Clark, BSc, MSc (Author) Tom Calyton, MEng. (Reviewer) |
| Chapter 12 - Hydrology and Water Quality | | Roberto Mione, MEng, MIEI (Author) Pablo Delgado, CEng MIEI, BE Civil Engineering, PGDip Project Management, PGDip Hydraulic Networks, PGDip Environment Infrastructures, Hdip Hydraulic Transient Analysis. (Reviewer) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |



| EIAR Topic | Company | Name and Qualifications |
|---|--------------------------|--|
| Chapter 13 – Shadow Flicker | TNEI Services Ltd | Colum Breslin BSc. MSc. (Co-author) Jim Singleton, BSc, Dip, AMIOA (Co-author, Reviewer) |
| Chapter 15 – Traffic and Transportation | Fehily Timoney | Leigh Doyle, MEng (Co-Author) Sinead Lynch, MEng (Co-Author) Trevor Byrne, BSc, MSc, MIEI (Author) |
| Chapter 15 - Archaeology, Architectural and Cultural Heritage | John Cronin & Associates | Tony Cummins, BA, MA (Author) John Cronin, BA, MRUP, MUBC (Reviewer) |
| Chapter 16 – Landscape and Visual | Macro Works | Richard Barker BA PG Dip MLA (Co-author and Reviewer) Jamie Ball BALA, MILI (Author) |
| Chapter 17 – Material Assets, Telecommunications & Aviation | Fehily Timoney | Sinead Lynch, MEng (Author) Jim Hughes, BA, EIA/SEA Dip, MSc (Reviewer) |
| Chapter 18 – Interactions of the Foregoing | Fehily Timoney | Anthony Ryan, BA, MPlan (Author) Rita Mansfield, BSc. Applied Ecology; H. Dip Environmental Protection and Pollution Control (Reviewer) |

1.9 Difficulties Encountered

There were no difficulties encountered during the preparation of this EIAR.

1.10 Availability of Information

A copy of the EIAR may be viewed online on the dedicated project information portal website; coumnagappulwindfarmSID.ie.

A paper copy of the EIAR can be viewed, during office opening hours at the following addresses:

An Bord Pleanála, 64 Marlborough Street, St. Rotunda, Dublin 1, D01 V902.

The Offices of Waterford City and County Council, Menapia Building, The Mall, Waterford City.

Paper copies can be provided at the cost of printing, by writing to:

EMPower, Head Office, 2 Dublin Landings, North Wall Quay, North Dock, Dublin D01 V4A3



1.11 Glossary of Key Terms and Abbreviations

| Key Terms | Definition |
|---|---|
| The Applicant | Coumna gappul Wind Farm Limited |
| Baseline | Existing status of the receiving environment within the Study Area. |
| Blue Line Boundary | Denotes one or more areas of land within the ownership or control of The Applicant for the Proposed Development. |
| Borrow Pit | An area of excavation within the Site which will be used to extract rock for the purposes of construction of the Proposed Development and will be used for the management of spoil. |
| Chartered Institute of Ecology and Environmental Management (CIEEM) | The Chartered Institute of Ecology and Environmental Management is the professional membership body representing and supporting Ecologists and Environmental professionals in the UK, Ireland and abroad. Previously known as Institute of Ecology and Environmental Management (IEEM). |
| Collision Risk Modelling (CRM) | Method used to predict the potential number of bird collisions that might be caused by the operation of a wind farm. |
| Community Benefit Scheme | A fund that is unique to the Project and whose design is typically driven by the community that administers and avail of it. It can include for example: Contributing to the improvement of local recreational amenities Supporting local projects that benefit the wider community; Engaging with local communities in enhancing sustainable energy awareness, use and efficiency. |
| Competent Authority | Organisation that has the obligation to carry out Appropriate Assessment and or Environmental Impact Assessment. In this case, An Bord Pleanála. |
| Construction Phase | The period during which project infrastructure is being installed. |
| The Council | Refers to Waterford City and County Council. |
| Decommissioning Phase | The period during which project infrastructure is being removed at the end of the operational lifetime of The Project. |
| Department for Transport, Tourism and Sport (DTTAS) | The Irish government department responsible for Transport, Tourism and Sport with a mission to support economic growth and social progress. |
| Department of Agriculture, Food and the Marine (DAFM) | The Irish government department responsible for agriculture, food and the marine. |
| Department of Communications, Climate Action and Environment (DCCAIE) | The Irish government department responsible for communications, climate action, environment, broadcasting, energy, natural resources and postal services. The department must ensure that all of its policies are in line with EU and global obligations. |
| Department of Communications, Marine and Natural Resources (DCMNR) | Previous name of the Department of Communications, Climate Action and Environment. |



| Key Terms | Definition |
|---|---|
| Department of Housing, Planning, and Local Government (DHPLG) | The Irish government department responsible for housing, planning and local government. |
| Design Parameters | Set of parameters by which The Project is defined, and which will be used to form the basis of assessments in the EIAR. |
| The Proposed Development | Refers to all elements of the application for planning permission for the Proposed Development (Coumna gappul Hill Wind Farm), the details of which are set out within Chapter 2: Development Description. These elements include the wind turbines, all site infrastructure (access tracks, substation(s), temporary construction / storage compounds, permanent meteorological mast, borrow pit(s) etc.) including the works required within the Redline Boundary to accommodate the Grid Connection. |
| Development Consent | Planning permission from An Bord Pleanála for the development to proceed. |
| Development Phase | This relates to the development of The Project through commercial, environmental, technical and engineering consideration prior to construction. |
| EIAR Scoping Report | The EIAR Scoping Report sets out the proposed scope of work and methods to be applied in the development of the Environmental Impact Assessment Report (EIAR). |
| EirGrid | State-owned electric power Transmission System Operator (TSO) in Ireland |
| Electricity Supply Board Networks (ESBN) | Licensed owner and operator of the electricity distribution system and onshore transmission asset owner in the Republic of Ireland, responsible for carrying out operations, maintenance, repairs and construction on the national electricity grid. |
| Electromagnetic Field (EMF) | This is a property of space caused by the motion of an electric charge. A stationary charge will produce only an electric field in the surrounding space. If the charge is moving, a magnetic field is also produced. An electric field can be produced also by a changing magnetic field. |
| Environmental Impact Assessment (EIA) | A systematic means of assessing a development projects likely significant effects undertaken in accordance with the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU). It is an assessment carried out by the Competent Authority. |
| Environmental Impact Assessment Report (EIAR) | A report prepared by the Developer to describe the likely significant effects of a project and submitted with an application for Development Consent. |
| Environmental Protection Agency (EPA) | National agency responsible for protecting and improving the environment of Ireland. |
| European Commission (EC) | The executive body of the European Union responsible for proposing legislation, enforcing European law, setting objectives and priorities for action, negotiating trade agreements and managing implementing European Union policies and the budget. |
| European Directive | A "directive" is a legislative act that sets out a goal that all EU countries must achieve. However, it is up to the individual countries to devise their own laws on how to reach these goals. One example is the EU Consumer Rights Directive (Directive 2011/83/EU), which strengthens rights for consumers across the EU, for example by eliminating hidden charges and costs on the internet, and extending the period under which consumers can withdraw from a sales contract. |



| Key Terms | Definition |
|--|---|
| Fehily Timoney and Company (FT) | Planning and Environmental Consultants responsible for leading preparation of the EIAR for The Project |
| Felling Licence | A licence granted by the Minister for Agriculture, Food and the Marine provides authority under the Forestry Act 2014 to fell or otherwise remove a tree or trees. |
| Geographical Information System (GIS) | A digital system that captures, stores, analyses, manages and presents data linked to geographic location. It links spatial information to a digital database. |
| Grid Connection Route (GCR) | The proposed route of connecting the Proposed Development to the national grid at the Dungarvan Substation. |
| High Voltage Direct Current (HVDC) | A High Voltage Direct Current (HVDC) electric power transmission system (also called a power superhighway or an electrical superhighway) uses Direct Current for the bulk transmission of electrical power. For long-distance cables, HVDC systems are preferred as being less expensive and suffering lower electrical losses. For underwater power transmission, HVDC avoids the need to charge and discharge the cable capacitance each cycle. HVDC typically uses voltages between 100 kV and 1,500 kV. |
| Landscape and Visual impact assessment | A tool used to identify and assess the likely significant effects of change resulting from the Project on the landscape as an environmental resource in its own right and on views and Visual Amenity experienced by human & other receptors. |
| Maximum Export Capacity (MEC) | The Maximum Export Capacity (MEC) is the value (in MW, MVA, kW and/or kVA) provided in accordance with the User's Grid Connection Agreement or DSO Demand Customer's DSO Connection Agreement. This is the maximum capacity that can be exported to the Electricity Transmission/Distribution System by a project. |
| National Parks and Wildlife Service (NPWS) | The National Parks and Wildlife Service manages the Irish State's nature conservation responsibilities. The activities of the NPWS include the designation and protection of Natural Heritage Areas, Special Areas of Conservation and Special Protection Areas. |
| Natura Impact Statement (NIS) | This is a report prepared to inform Appropriate Assessment (AA) of Natura 2000 sites as required under the EU Habitats Directive which presents information on the assessment and the process of collating data on a project and its potential significant effects on Natura 2000 site(s). |
| Natura 2000 sites | Sites both onshore and offshore which are designated for conservation and protection under the EU Habitats Directive and Bird Directive. |
| Nutrient Sensitive Areas (NSAs) | Areas of protected habitats and species as defined in the Nitrates Directive. |
| Permanent Met Mast | Refers to a proposed 110m permanent Meteorological Mast to be located on The Site. |
| Project Substation | A compound containing electrical transforming equipment to ensure the wind farm export power operates within safety and performance parameters to enable connection to the National Irish grid. If needed, the substation will transform voltage from high to low, or the reverse by means of the electrical transformers before it is connected onto the Irish electricity grid. |
| Operations and Maintenance (O&M) | O&M is the activity that follows commissioning to ensure the safe and economic running of The Project. The objective of this activity is to make sure The Project achieves the best balance between running cost and electricity output. |



| Key Terms | Definition |
|---|--|
| Operational Phase | The period over which the wind farm is generating, and any works are for maintenance purposes. |
| Prescribed Bodies | A public body or institution declared by the Minister as set out in the Planning & Development Act 2000 (as amended). These are bodies that should be notified by a Planning Authority or Competent Authority of applications for Consent that may fall within their remit. |
| The Project | The Project refers to the development works within the Redline Boundary and any other construction materials or work which derive from outside the Redline Boundary e.g. accommodation works required for Turbine Delivery or haulage. |
| Ramsar site | A wetland site designated to be of international importance under the Convention on Wetlands, known as the Ramsar Convention. |
| Receptor | Environmental component that may be affected, adversely or beneficially, by The Project. |
| Red Line Boundary | Refers to the proposed Development planning boundary extents. |
| Renewable Energy Support Scheme (RESS) | Set up by Department of the Environment, Climate and Communications (DECC), the RESS aims to promote the generation of electricity from renewable sources by providing financial support to renewable energy projects in Ireland. |
| River Basin Management Plan | A national plan that sets out the actions (Programme of Measures and Areas for Action) that Ireland will take to improve water quality and achieve 'good' ecological status. |
| Roadmap for a competitive low-carbon Europe | With its Roadmap for moving to a competitive low-carbon economy in 2050, the European Commission is setting out a plan to meet the long-term target of reducing domestic emissions by 80 % to 95% by mid-century as agreed by European Heads of State and governments. |
| The Site | Refers to the lands upon which the wind farm and substation will be developed and does not include the grid connection. |
| Special Area of Conservation (SAC) | Areas defined in the European Union's Habitats Directive (92/43/EEC) for protection of one or more special habitats and/or species terrestrial or marine. |
| Special Protection Area (SPA) | Sites classified in accordance with Article 4 of the EC Birds Directive (2009/147/EC). They are classified for rare and vulnerable birds (as listed on Annex 1 of the Directive), and for regularly occurring migratory species. |
| Species | A group of interbreeding organisms that seldom or never interbreed with individuals in other such groups, under natural conditions; most species are made up of subspecies or populations. |
| Suspended sediment concentration | Suspended sediment generally consists of flocculated material and is often a mixture of inorganic particles (clays and silts), bacterial and algal communities, organic particles (detritus and extracellular polymers), and interfloc spaces (pores) that allow for the flow through or retention of water. |
| Study Area | The physical area defined for each EIAR topic includes the potential spatial and temporal considerations of the effects on relevant receptors. The Study Area for each EIAR topic is intended to cover the area within which an effect can be reasonably expected relative to that topic. |
| Turbine Delivery Route (TDR) | The proposed turbine delivery route (TDR) from Waterford Port (Belview) to the Site. |



| Key Terms | Definition |
|--------------------------------------|---|
| Water body | A discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water, designated for the purposes of implementing the Water Framework Directive (WFD). |
| Wind Turbine Generator (WTG) | Wind Turbine Generators (WTG) or “WTGs” are unit(s) generating electricity from wind. These electricity generating machines typically comprise a tower, rotor with three blades connected at the hub, nacelle and ancillary electrical and other equipment... |
| Zone of Influence (ZOI) | The area of the receiving environment which may experience both positive or negative effects as a result of a project. |
| Zone of Theoretical Visibility (ZTV) | A map, digitally produced, showing areas of land and or sea within which different elements of a project is theoretically visible. |

| Abbreviation | Term in Full |
|--------------|---|
| AA | Appropriate Assessment |
| CA | Competent Authority |
| CAA | Civil Aviation Authority |
| CAP | Climate Action Plan |
| CAS | Controlled Airspace |
| CDP | County Development Plan |
| CEMP | Construction Environmental Management Plan |
| CIA | Cumulative Impact Assessment |
| CIEEM | Chartered Institute of Ecology and Environmental Management |
| cSAC | candidate Special Areas of Conservation |
| DAFM | Department of Agriculture, Food and the Marine |
| dB | decibel |
| DECC | Department of the Environment, Climate and Communications, formerly Department of Communications, Climate Action and Environment (DCCA) |
| DoHLGH | Department of Housing, Local Government and Heritage, formerly Department of Housing, Planning, and Local Government (DHPLG). |
| DoT | Department of Transport |
| DoD | Department of Defence |
| EC | European Commission |
| EIA | Environmental Impact Assessment |
| EIAR | Environmental Impact Assessment Report |
| EIS | Environmental Impact Statement |
| EMF | Electromagnetic Field |



| Abbreviation | Term in Full |
|--------------|--|
| EPA | Environmental Protection Agency |
| ESB | Electricity Supply Board |
| ESBN | Electricity Supply Board Networks |
| EU | European Union |
| EU DCF | EU Data Collection Framework |
| EUNIS | European Nature Information System |
| FT | Fehily Timoney and Company |
| FWPM | Freshwater pearl mussel |
| GIS | Geographic Information System |
| GLVIA3 | Guidelines for Landscape and Visual Impact Assessment, Third Edition |
| GPS | Global Positioning Systems |
| GSI | Geological Survey Ireland |
| GW | Gigawatt |
| HDD | Horizontal Directional Drilling |
| HGV | Heavy Goods Vehicles |
| HV | High Voltage |
| IAA | Irish Aviation Authority |
| IAC | Irish Air Corps |
| ICAO | International Civil Aviation Organisation |
| IEEM | Institute of Ecology and Environmental Management |
| IEMA | Institute of Environmental Management and Assessment |
| IFI | Inland Fisheries Ireland |
| INNS | Invasive and Non-Native Species |
| IROPI | Imperative Reasons of Overriding Public Interest |
| IWeBs | Irish Wetland Bird Survey |
| IWT | Irish Wildlife Trust |
| JNCC | Joint Nature Conservation Committee |
| km | Kilometre |
| kV | KiloVolts |
| LSE | Likely Significant Effects |
| LVIA | Landscape and Visual Impact Assessment |
| MEC | Maximum Export Capacity |
| MW | Megawatts |
| NATS | National Air Traffic Service |



| Abbreviation | Term in Full |
|--------------|---|
| NBDC | National Biodiversity Data Centre |
| NDP | Project Ireland 2040: National Development Plan 2018 – 2027 |
| NECP | Ireland’s National Energy and Climate Plan |
| NGO | Non-government Organisation |
| NHA | Natural Heritage Areas |
| NIAH | National Inventory of Architectural Heritage |
| NIS | Natura Impact Statement |
| NMI | National Museum of Ireland |
| NMS | National Monuments Service |
| NPF | National Planning Framework |
| NPWS | National Parks and Wildlife Services |
| NREAP | National Renewable Energy Action Plan |
| O&M | Operation and Maintenance |
| OPW | Office of Public Works |
| P&D | Planning and Development Act 2000 |
| pNHA | proposed Natural Heritage Areas |
| SAC | Special Area of Conservation |
| SNH | Scottish Natural Heritage |
| SPA | Special Protection Area |
| SPM | Suspended Particulate Matter |
| TII | Transport Infrastructure Ireland |
| VP | Vantage Point |
| WCCC | Waterford City and County Council |
| WFD | Water Framework Directive |
| WTG | Wind Turbine Generator |
| ZoI | Zone of Influence |
| ZTV | Zone of Theoretical Visibility |



1.12 References

An Bord Pleanála (2023) Online Planning Search.

Available at: <http://www.pleanala.ie/>.

European Commission (1999), Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

Available at: <https://ec.europa.eu/environment/archives/eia/eia-studies-and-reports/pdf/guidel.pdf>

European Commission (2017), Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report.

Available at: https://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf

EPA (June 2023) Greenhouse Gas Emissions Projections 2022-2040

EPA (2017), Guidelines on the Information to be contained in Environmental Impact Assessment Reports.

Available from: <https://www.epa.ie/>

EPA (2015), Advice Notes for Preparing Environmental Impact Statements.

Available at: <https://www.epa.ie/>

Department of Environment, Heritage and Local Government (2006), Wind Energy Development Guidelines.

Available at: <https://www.gov.ie>

Department of Housing, Local Government and Heritage (2017), EIA Portal.

Available at: <https://www.housing.gov.ie/planning/environmental-assessment/environmental-impact-assessment-eia/eia-portal>

Department of Housing, Planning and Local Government (2018), Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.

Available at: <https://www.opr.ie/wp-content/uploads/2019/08/2018-Environmental-Impact-Assessment-1.pdf>

[Department of Housing, Planning and Local Government \(2019\), Draft Revised Wind Energy Development Guidelines.](#)

Available at: <https://www.gov.ie>

European Commission (2013), Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment.

Available at: <https://ec.europa.eu/environment/eia/pdf/EIA%20Guidance.pdf>

[Government of Ireland \(2000-2021\), Planning and Development Acts 2000-2020.](#)

Available at: <http://revisedacts.lawreform.ie/eli/2000/act/30/revised/en/html>

Government of Ireland (2001-2021), Planning and Development Regulations 2001-2020.

Available at: <http://www.irishstatutebook.ie>



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