

1.0 INTRODUCTION

TOBIN Consulting Engineers (hereafter referred to as TOBIN) has prepared this Environmental Impact Assessment Report (EIAR) on behalf of Springfield Renewables Limited (hereafter referred to as the Developer, or Springfield), a co-development company supported by Coillte Cuideachta Ghníomhaíochta Ainmnithe (Coillte) and ART Generation. Springfield intends to apply to An Bord Pleanála for planning permission to construct the proposed Castlebanny Wind Farm in County Kilkenny. The proposed wind farm is located between the settlements of Mullinavat, Inistiogue and Ballyhale, which are located approximately 4.1km southwest, 5.7km northeast and 1.9km northwest of the site of the proposed wind farm respectively. The proposed wind farm will have an electrical output of between 105-126 MW.

For the purposes of this EIAR, the proposed project includes the main wind farm, the electrical grid connection, temporary road upgrade works at a number of locations to allow delivery of oversized loads to the wind farm and the forestry replanting, with the latter being assessed cumulatively due to the remote location. The proposed development refers only to the elements of this for which planning permission is being sought as part of this application. A full description of the proposed development and indeed the proposed project are provided in Chapter 2 (Description of the Proposed Development).

Each chapter of this EIAR may define a different study area to which its own assessment refers, but the general EIAR study area' (which comprises all elements of the proposed project with the exception of the offsite forestry replanting lands) is shown in Figure 1-1 and incorporates an area of approximately 1,472 hectares (ha). The boundary of the main wind farm site (which excludes the grid connection, the offsite forestry replanting lands and the temporary public road upgrade works associated with the Turbine Delivery Route) is shown in Figure 1-2, and measures approximately 1,434ha.

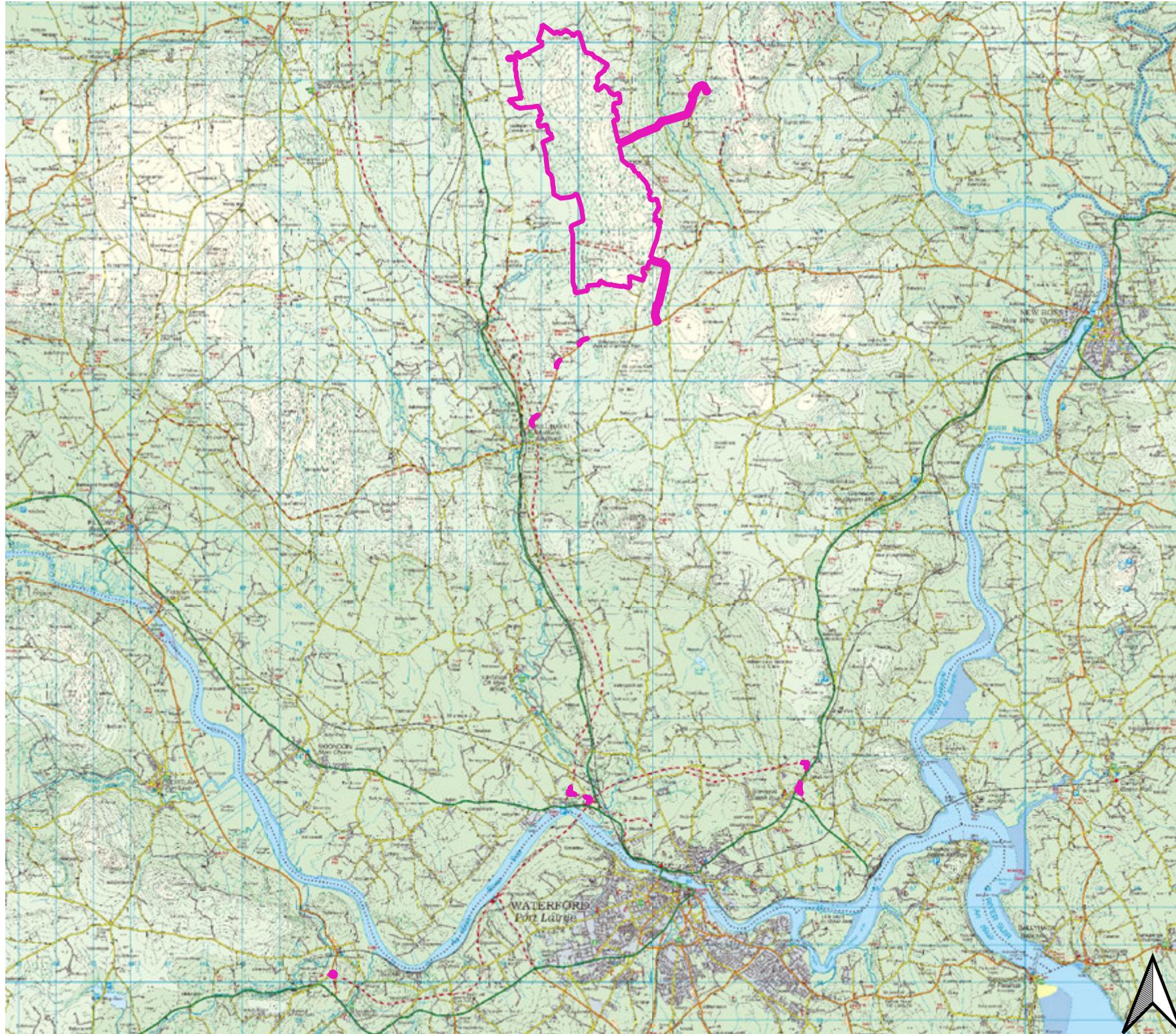
1.1 BACKGROUND TO ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

Environmental Impact Assessment (EIA) is the process that examines the potential environmental effects of a proposed development. Where potential significant effects are identified, appropriate measures for the prevention and/or mitigation of impacts are prescribed. The EIA process consists of the preparation of an EIAR, the carrying out of consultations, the examination by the competent authority of the information presented in the EIAR and any supplementary information provided, followed by the reasoned conclusion by the competent authority on the significant effects of the project on the environment arising from the examination of the information presented. The EIAR is a statement of the effects, if any, that the proposed development would have on the environment and is used to inform the EIA process. This EIAR has been prepared by TOBIN Consulting Engineers on behalf of the Developer.

The proposed Castlebanny Wind Farm development is subject to the EIA process as it falls within the project class definitions specified in Schedule 5 of the *Planning and Development Regulations, 2001* (S.I. No. 600 of 2001), as amended. Schedule 5 sets out a comprehensive list of project types and development thresholds which are subject to EIA. Specifically, Part 2 Category 3(i) states that EIA is required for the following project type:

“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”.





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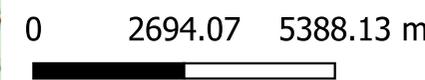
EIAR Study Area 

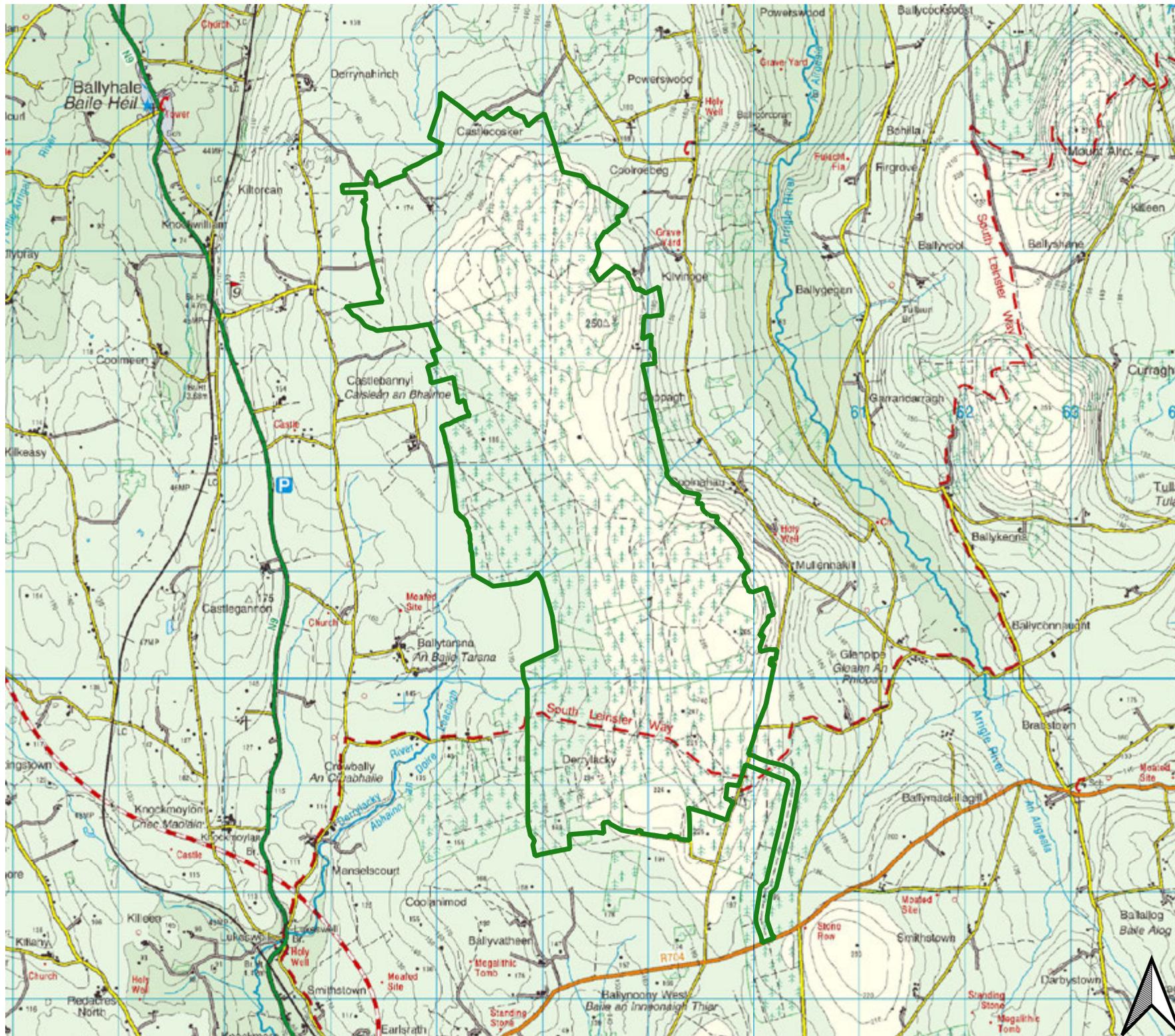
Map by: JS
Checked by: ST
Rev: 1

Client: Springfield Renewables Ltd.
Job: Castlebanny WF



Figure: 1-1
Title: Proposed EIAR Study Area Boundary





Legend

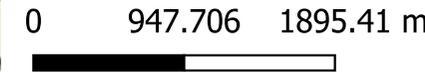
Wind Farm Site Boundary 

Map by: JS
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 Rev: 1

Client: Springfield Renewables Ltd.
 Job: Castlebanny WF



Figure: 1-2
 Title: Proposed Wind Farm Site Boundary



EIA is an increasingly important element of European Union (EU) environmental policy. The first EIA Directive was adopted in 1985 (*Directive 85/337/EEC*) and, following the adoption of amending Directives in 1997, 2003 and 2009, a codified Directive was adopted in 2011 (*Directive 2011/92/EU*). *Directive 2014/52/EU* amends the 2011 codified Directive but does not replace it. This EIAR has been prepared in accordance with the requirements of the codified *Directive 2011/92/EU* as amended by *Directive 2014/52/EU* (hereafter referred to as the ‘amended Directive’).

Further information on the legislative context for EIA is provided in Chapter 4 (Policy, Planning and Development Context).

1.2 THE APPLICANT

The applicant for permission is Springfield, a co-development company supported by Coillte and ART Generation.

Coillte manages approximately 7% of Ireland’s land and operates three businesses, with the core business being commercial forestry. Coillte is responsible for harnessing the wind energy in the vicinity of Coillte forests and aims to build responsible projects that are good for the environment, for Irish society and positively benefit the neighbouring community. Coillte has now been involved in the development of 4 operational wind farms on their lands with a capacity of 240 megawatts in conjunction with 3 joint venture partners and has an aspiration to develop a further 1 gigawatt (GW) over the next ten years.

ART Generation is a wholly Irish owned renewable energy company based in Co. Kilkenny It is a well-established energy development company with responsibility for managing the development, construction and operation of projects throughout Ireland including Foyle Windfarm in Co. Kilkenny. ART Generation most recently developed three wind farms in the counties of Kilkenny and Tipperary.

1.3 THE NEED FOR THE PROPOSED DEVELOPMENT

In terms of setting out the need for the proposed Castlebanny Wind Farm, and renewable wind energy in general, it is important to place this proposed development in an international, national, and local policy context from the perspectives of environment, energy and planning. The overarching European and National Policy in terms of decarbonising our economy and reducing our reliance on fossil fuels to generate electricity are set out comprehensively in Chapter 4 (Policy, Planning and Development Context).

Some of the key national policy targets and objectives described in Chapter 4 are summarised here as are some brief statistics and research on renewable energy use, which gives context to the current dependency on imported fossil fuels in Ireland, and therefore which demonstrate the need for the proposed development both in general and at this particular location.

From a National perspective, the Government’s *Climate Action Plan* published in 2019 is the key document which provides a roadmap for Ireland to meet its European Union (EU) target to reduce carbon emissions by 30% between 2021 and 2030. The Plan sets out a target of 70% of electricity to be produced by renewable energy sources by 2030 with an indicative contribution of up to 8.2 Gigawatts (GW) (i.e. 8,200 MW) to be provided from increased onshore wind



capacity. At present in Ireland, there is an installed wind capacity of 4,235 MW¹ which leaves a gap of 3,965 MW of wind energy capacity to be installed in order to meet the 2030 targets.

The Sustainable Energy Authority of Ireland (SEAI) *Renewable Energy in Ireland – 2020 Update* (SEAI, April 2020) states that 33% of electricity generated in 2018 was from renewable sources and that 28% of all electricity generated was from wind alone. The latest Monthly Energy Data² from the SEAI for the period January-April 2020 indicates that wind contributed 3,904 gigawatt hours (GWh) to the overall indigenous generation total of 9,725 GWh for the period which represents a contribution of 40% of total domestic energy generation in GWh. Also in the period January to February 2020, wind accounted for 49% of electricity demand with February 2020 proving to be a record-breaking month with 56% of demand met by wind energy. This is the highest monthly total since records began; beating the previous record of 47% set in February 2019³.

Energy security comprises many diverse factors, including import dependency, fuel diversity, the capacity and integrity of the supply and distribution infrastructure, energy prices, physical risks, supply disruptions and emergencies. According to information published by the SEAI in 2019⁴, indigenous production accounted for 32% of Ireland’s energy requirements in 1990. However, since the mid-1990s, import dependency had grown significantly, due to the increase in energy use together with the decline in indigenous natural gas production at Kinsale since 1995 and decreasing peat production. Ireland’s overall import dependency reached 90% in 2006. It varied between 85% and 90% until 2016 when it fell to 69%. It fell further, to 66%, in 2017, but increased to 67% in 2018. It is estimated that in 2015 the cost of all energy imports to Ireland was approximately €3.14b in 2016 due mainly to reduced gas imports. It has since increased, to €5 billion in 2018. This trend reflects the fact that Ireland is not endowed with significant indigenous fossil fuel resources (as well as natural gas from the Corrib gas field) and has only in recent years begun to harness significant quantities of renewable resources. For example, in 2017 approximately €439 million in fossil fuel imports were avoided, of which €226 million was avoided by wind generation.

This dependence on fuel imports makes Ireland highly susceptible to price fluctuations in the international supply market and vulnerable to volatile international trade wars and political decisions. The Government White Paper entitled *Ireland’s Transition to a Low Carbon Energy Future 2015-2030* sets out a framework to guide Ireland’s energy policy development. The White Paper states “*Renewable energy will also play a central role in the transition to low carbon energy. No single renewable energy technology – existing or emerging – will alone enable Ireland to overcome the low carbon challenge. Rather, a diverse range of technologies will be required along the supply chains for electricity, heat and transport*”. In this context, the addition of up to 126 MW of installed wind energy capacity from the proposed Castlebanny Wind Farm will improve our security of supply and reduce our reliance on energy imports.

Carbon pricing also plays a role in establishing a need for the proposed development. The Government has said that advice from the Climate Change Advisory Council is that carbon pricing is essential to delivering on the country’s climate targets and that, as agreed by the Joint Oireachtas Committee on Climate Action, the government are committed to increasing the

¹ <https://www.iwea.com/about-wind/facts-stats> (Accessed 9th Dec 2020)

² <https://www.seai.ie/data-and-insights/seai-statistics/monthly-energy-data/electricity/> (Accessed on 12 June 2020)

³ <http://www.eirgridgroup.com/newsroom/record-wind-levels-feb-20/>

⁴ SEAI, *Energy In Ireland – 2019 Report*, 2019.



price of carbon to €80 per tonne by 2030⁵. Delivering Budget 2020 on 8 October 2019, Minister for Communications, Climate Action and Environment, Richard Bruton T.D. said *"The independent Climate Change Advisory Council have said that increasing the price of carbon is essential if we are to hit our climate targets. However, carbon pricing is just one part of the solution. As set out in the Climate Action Plan, we must also scale up our production of renewables, increase the level of retrofitting, electrify transport and introduce changes to make our land use more sustainable."* Accordingly, a €6 increase in the price of carbon was introduced in Budget 2020. It was also announced in Budget 2021 that the carbon tax will increase by €7.50 from €26 per tonne to €33.50 per tonne

It should be noted that there is a considerable economic benefit to the development of wind farms nationally and specifically at this location. In the National context, a Pöyry report published in March 2014 entitled *The Value of Wind Energy to Ireland* (Pöyry, March 2014). The report stated that the sector could support 22,510 jobs in the construction stage and double the amount of existing jobs in the operational phase by 2030. It also projected an investment of €4.8 billion in the time period from 2020 to 2030. The potential local economic impact in the Kilkenny area will also be positive by bringing employment to the area during the construction works. Further information on the local economic impacts of the proposed project are discussed in Chapter 5 (Population and Human Health). A 2018 report by Baringa⁶ discusses the potential financial costs and savings of the use of renewable electricity for the end customer when compared to a fossil fuel use scenario. The report found that although there were some additional costs in certain areas associated with the use of renewable energy, there were also savings that could be made, and overall there was a potential to make significant cost savings to the end customer by 2030 when compared to a purely fossil fuel scenario.

The development of renewable energy is a natural step in the evolution of locally generated electricity. Electricity generation has brought significant economic gain to many areas in Ireland over the years. Ireland is now on a path of decarbonisation and the energy that we are using is changing from fossil fuels to renewables, such as wind. The potential to extract local, economic and societal gains is a major benefit associated with the development of renewable energy projects. All renewable projects that are developed over the coming years will attract a significant community benefit fund for the local area which will bring significant opportunities for local communities.

Additional information on the community benefit proposals for the proposed Castlebanny Wind Farm are discussed in Chapter 2 (Description of the Proposed Development) of this EIAR.

It should be noted that the Board has confirmed, in closing the pre-application consultation process under Section 37 of the Planning and Development Act, 2000, as amended, that the project: *"would be strategic infrastructure within the meaning of section 37A of the Planning and Development Act, 2000, as amended"* and as such a direct application is being made to the Board for permission for the proposed development under section 37E of the Planning and Development Act 2000 as amended.

⁵ <https://www.dccae.gov.ie/en-ie/news-and-media/press-releases/Pages/-Budget-2020,-Giving-Ireland-a-Sustainable-Future.aspx> (Accessed on 12 May 2020)

⁶ <https://www.iwea.com/images/files/70by30-report-final.pdf>



1.4 SITE LOCATION AND BACKGROUND

The main wind farm site (Figure 2-1) which extends to approximately 1,434 hectares (ha), of which approximately 1200 ha are currently commercial forest owned by Coillte, is in the southern portion of County Kilkenny between the villages of Ballyhale to the northwest, Inistioge to the northeast and Mullinavat to the southwest. The current planning application site boundary extends to 271.2ha (See drawing 10730-2000 in Appendix 2-1 of this EIAR).

The main wind farm site is approximately 7.3km long in the north/south direction and is approximately 2.7km wide in an east/west direction at the widest point. The remaining approximately 234 ha are largely third-party lands and comprise a mix of agricultural grassland, arable crops and forestry.

Coillte forestry within the site comprises different stages of coniferous plantation forestry including recent clear-fell, second rotation, immature, semi-mature and mature forestry. Species planted include Sitka Spruce with some Noble Fir and Douglas Fir throughout and a small area of Lodgepole Pine on the western side of the site.

The topography of the main wind farm site can generally be described as gently sloping, rising from approximately 145m OD on the eastern and western sides to a high point of 250m OD in the north and 265m OD in the south. The site is surrounded by the R704 to the south and local roads to the east, north and west while the South Leinster Way traverses the southern part of the site. The Arrigle River (which form part of the River Barrow and River Nore Special Area of Conservation) runs south-north near the eastern boundary of the site. Several tributaries of the Arrigle and the Derrylacky River encroach on the periphery of the site.

In general terms, the area surrounding the main wind farm site can be described as rural with dispersed settlement type. There are two commissioned wind farms located south/southeast of the main wind farm site namely; Ballymartin Windfarm and Rahora Windfarm. .

The proposed electrical grid connection for the wind farm will extend from a new onsite 110 kV substation on the wind farm site which will be looped into the existing Great Island/Kilkenny 110kV overhead transmission line which runs north-south approximately 2.3km to the east of the main wind farm site boundary. This connection will be made between the proposed onsite substation and the proposed Cable Interface Towers via underground cabling. The Cable Interface Towers will comprise two no. new steel lattice masts at the location of the existing 110kV overhead transmission line. The route of the proposed grid connection passes through the townlands of Castlebanny (proposed substation also located here), Cappagh, Coolnahau, Garrandarragh, Ballygegan and Ballyvool (location of proposed connection with existing 110kV overhead line), Co. Kilkenny.

Temporary road upgrade works are required at a number of locations to allow delivery of oversized loads to the wind farm and these are in the townlands of Ballynoony West, Garrandarragh, Granny, Kilmurry, and Rathpatrick, Co Kilkenny, and Ballyduff East, Co. Waterford.

Further information on the proposed site is provided in Chapter 2 (Description of the Proposed Development) of this EIAR. Information on the proposed offsite replanting lands is provided in Appendix 2-5 to this EIAR, and it is assessed cumulatively within each chapter.



1.5 SUMMARY OF THE PROJECT DESCRIPTION

Springfield intend to apply for a ten-year planning permission for the following:

- Erection of 21 no. wind turbines with an overall blade tip height of up to 185m and all associated foundations and hard-standing areas in respect of each turbine;
- Improvement of existing site entrance with access onto the R704 regional road, vertical realignment of the R704 in proximity to this entrance, and creation of two new site entrances on the L7451 to form a new crossing point;
- Improvements and temporary modifications to existing public road infrastructure to facilitate delivery of abnormal loads and turbine delivery and construction access at two locations on the R704 in the townland of Ballynoony West;
- Construction of 2 no. temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- Installation of 1 no. permanent meteorological mast up to a height of 100m;
- 3 no. borrow pits;
- Construction of new internal site access roads and upgrade of existing site roads, to include passing bays and all associated drainage;
- Construction of drainage and sediment control systems;
- Construction of 1 no. permanent 110kV electrical substation including:
 - 2 no. control buildings containing worker welfare facilities and equipment store;
 - All electrical plant and infrastructure and grid ancillary services equipment;
 - Parking;
 - Security Fencing;
 - Wastewater holding tank;
 - Rainwater harvesting equipment;
 - All associated infrastructure and services including site works and signage;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation;
- All works associated with the connection of the proposed wind farm to the national electricity grid, which will be via a loop-in 110 kV underground cable connection approximately 4km in length to the existing overhead 110 kV line in the townland of Ballyvol, Co. Kilkenny, with two new 16m high steel lattice loop-in/out masts at the connection point;
- All related site works and ancillary development including berms, landscaping, and soil excavation;
- Ancillary forestry felling to facilitate construction and operation of the proposed development and any onsite forestry replanting;
- Development of a permanent public car park with seating/picnic tables at the end of the construction phase of the development on the footprint of the southern temporary construction compound; and
- Permanent recreational facilities including marked walking and cycling trails along the site access roads, and associated recreation and amenity signage and outdoor fitness equipment.
- A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm is being sought.

Given the recent advances in turbine technology, and the anticipated lifespan of wind turbines, this is considered to be the optimal operational life for the proposed development. The duration of this operational life allows the proposed turbines to be used to generate



clean renewable energy until they have reached the end of their life, rather than being removed prematurely.

All elements of the proposed development, including the elements which form part of the overall project but are not part of the current planning application such as forestry replanting and all works required on public roads (with the exception of the two locations on the R704 in the townland of Ballynoony West) to accommodate turbine delivery, have been considered and are addressed as part of this EIAR.

Further information on the proposed project is provided in Chapter 2 (Description of the Proposed Development).

1.6 LEGISLATIVE CONTEXT AND DEVELOPMENT GUIDELINES

The proposed wind farm project will comprise 21 no. wind turbines and will have an electrical output of between 105 - 126MW and is a project meeting the criteria for Strategic Infrastructure Development (SID) as set out in the 7th Schedule of the Planning and Development Act 2000, as amended. As such, the planning application for the proposed development is submitted to An Bord Pleanála in accordance with Section 37E of the Planning Act. Correspondence from the Bord confirming the SID status of the application is included in Appendix 1-1.

The electrical infrastructure proposed, including the grid connection to the existing 110 kV line, is an integral component of the Section 37 wind farm development application. The loop-in grid connection infrastructure proposed serves no other purpose other than to export renewable electricity generated from the project to the national grid and is part of the installation for the harnessing of wind power for energy production.

The proposed development is subject to EIA and to the requirements inter alia set out in the following legislative provisions:

Part X of the Planning and Development Act 2000, as amended; and
The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

The above legislative provisions are detailed further in Chapter 4 (Policy, Planning and Development Context).

A Natura Impact Statement (NIS) has also been prepared for the proposed development. The purpose of the NIS is to inform the planning authority in its undertaking of an Appropriate Assessment (AA) of the proposed development, as required under Article 6(3) of the *Habitats Directive (92/43/EC)*. An AA is required of the implications for the European site concerned of any plan or project not directly connected with or necessary to the management of that site but likely to have a significant effect thereon, either individually or in combination with any other plans or projects prior to its approval, and to take into account the cumulative effects which result from the combination of that plan or project with other plans or projects (in-combination effects) in view of the European site's conservation objectives. The NIS, which is accompanied by an Appropriate Assessment Screening Report, is provided separately with the planning application.



The following EIA Guidelines have been taken into consideration in the preparation of this EIAR:

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

European Commission (EC), *Guidance on Scoping* (2017);

European Commission (EC), *Guidance on Screening* (2017);

Environmental Protection Agency (EPA), *Guidelines on the Information to be contained in Environmental Impact Statements* (2002);

EPA, *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements* (2003);

EPA, *Draft Advice Notes on Preparing Environmental Impact Statements* (September 2015); and

EPA, *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (August 2017).

In the context of wind energy development, the following guideline documents have been consulted:

Department of the Environment, Heritage and Local Government (DoEHLG), *Wind Energy Development Guidelines* (2006);

DoHPLG, *Draft Revised Wind Energy Development Guidelines* (December 2019);

Irish Wind Energy Association, *Best Practice Guidelines for the Irish Wind Energy Industry* 2012;

Irish Wind Energy Association, *Community Engagement Strategy* March 2018; and

European Commission, *Guidance document on wind energy development and EU nature legislation* (November 2020).

It is relevant to note that the DoHPLG and the Department of Communications, Climate Action & Environment (DoCCA) launched a public consultation on the proposed revisions to the Wind Energy Development Guidelines (Draft 2019 WEDGs) on 12 December 2019. The final date for receipt of submissions under the public consultation was 19 February 2020. As set out on the Department website⁷, *“To enable focused input into the technical aspects of the revised Guidelines, the Department is interested in your views prior to finalisation”*.

As such, the proposed Draft 2019 WEDGs are still under review and may be subject to change before finalisation.

Nonetheless, the provisions set out in the Draft 2019 WEDGs have been considered in the design of the proposed development in terms of noise, shadow flicker, visual amenity setback, environmental assessment, consultation obligations, community dividend and grid connections. Application of the Draft Guidelines is discussed in more detail in each of the individual Chapters in this EIAR. At the time of writing, the relevant guidelines remain those published in 2006. It is possible that a version of the draft guidelines may be finalised during the consideration period for the current proposed development. Towards this end, it is anticipated that the proposed design of the Castlebanny wind farm will be capable of adhering to the new guidelines as required.

⁷ <https://www.housing.gov.ie/guidelines/wind-energy/public-consultation-revised-wind-energy-development-guidelines> (Accessed on 12 May 2020)



1.6.1 Information To Be Contained In An Eiar

The minimum information that must be contained in an EIAR is set out in Part X of the *Planning and Development Act, 2000*, as amended, and Schedule 6 of the *Planning and Development Regulations, 2001*, as amended. They are also set out in the European Union Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (the ‘EIA Directive’) as amended by Directive 2014/52/EU. The structure and content of this EIAR fully complies with these legislative requirements. This EIAR has also been prepared in accordance with the *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*, published by the EPA in August 2017 as well as the *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* published by the DoHPLG in August 2018 and all others listed in Section 1.6 above.

This EIAR contains information on the scale and nature of the proposed development, a description of the existing environment, impact assessment of the proposed development, mitigation measures to reduce or negate potential effects on the receiving environment and residual effects (if relevant).

This EIAR is arranged in four volumes, as follows:

- Volume I: Non-Technical Summary (NTS);
- Volume II: Main Environmental Impact Assessment Report;
- Volume III: Appendices; and
- Volume IV: Photomontages.

Volume I: Non-Technical Summary

This document provides an overview and summary of the EIAR using non-technical terminology. It is a standalone document and is intended to offer a clear and concise summary of the existing environment, characteristics of the development and mitigation measures for the development.

Volume II: Environmental Impact Assessment Report

To allow for ease of presentation and consistency when considering the various elements of the environment, a systematic structure will be adopted for the main body EIAR. This structure is known as a ‘*Grouped Format*’. The structure is used for each particular environmental aspect, as provided below.

Chapter 1 – Introduction: this chapter of the EIAR provides an introduction and a brief background to the project and the legislative requirements under which the document is prepared. It describes the EIA consultation and scoping procedures, the structure of the EIAR, the study team and contributors to the EIAR.

Chapter 2 – Description of the Proposed Development: provides a detailed description of the proposed development, which includes details of the site layout and infrastructure. It details the construction procedures and the materials required, the operational and maintenance phases, in addition to the decommissioning and rehabilitation procedures.

Chapter 3 – Reasonable Alternatives: provides a description of the reasonable alternatives, in terms of project design, technology, location, size and scale, which were considered by the Applicant and the Project Team in the preparation of the EIAR.



Chapter 4 – Policy, Planning and Development Context: considers the proposed development works in terms of legislative context and in relation to strategic, national, regional and local planning policies and objectives, in order to ascertain whether it is consistent with the relevant legislation and with the proper planning and sustainable development of the area.

The remaining chapters in the EIAR are as follows:

- Chapter 5: Population and Human Health
- Chapter 6: Biodiversity: Flora & Fauna
- Chapter 7: Biodiversity: Ornithology
- Chapter 8: Land, Soils and Geology
- Chapter 9: Hydrology and Hydrogeology
- Chapter 10: Shadow Flicker
- Chapter 11: Material Assets – Aviation and Telecommunications
- Chapter 12: Noise and Vibration
- Chapter 13: Landscape and Visual Impact
- Chapter 14: Air Quality & Climate
- Chapter 15: Cultural Heritage
- Chapter 16: Traffic and Transport
- Chapter 17: Interactions of the Foregoing
- Chapter 18: Schedule of Mitigation Measures

Each of the chapters (Chapters 5 – 16) provides an examination of specific environmental aspects and uses the following standard approach and headings:

Introduction – this section specifies the content and background of the subsequent assessment.

Methodology – this section describes the study methodology employed in carrying out the assessment.

Existing Environment – this section provides a description of the existing environment (without the proposed development) into which the proposed development will be located, specifically in the context of the relevant environmental aspects under consideration. This section will also identify any other proposed developments (with decisions pending from the relevant planning authority) or existing and approved projects in the vicinity which are relevant to the assessment.

Potential Effects – this section provides a description of the direct, indirect, and cumulative effects, which the proposed development may have on the environment. This is carried out with reference to the existing environment and characteristics of the proposed development, while also referring to the magnitude, duration, consequences, and significance of the proposed development during the construction, operational and decommissioning phases.

Mitigation Measures – this section includes a description of any remedial, or mitigation measures that are either practicable or reasonable having regard to the potential effects. It will also outline, where relevant, monitoring proposals to be carried out should consent be granted in order to demonstrate that the project in practice conforms to the predictions made.

Residual Effects – this section describes the degree of environmental impact that will occur after the proposed mitigation measures have been put in place.



Volume III: Appendices

Supporting documentation and references, referred to in the Main EIAR (Volume II) are included in this volume (with the exception of photomontages).

Volume IV: Photomontages

This volume consists of a set of photomontages identifying the visibility from a variety of locations towards the Castlebanny Wind Farm site as described in Chapter 14 (Landscape and Visual Impact Assessment).

1.6.2 Description Of Likely Significant Effects

As per the *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (August 2017), the main purpose of an EIAR is to identify, describe and present an assessment of the likely significant impacts of a project on the environment. The description of the likely significant effects on the environmental factors 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 project.

Annex III of the amended EIA Directive uses the following criteria to consider such impacts:

- the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected);
- the nature of the impact;
- the transboundary nature of the impact;
- the intensity and complexity of the impact;
- the probability of the impact;
- the expected onset, duration, frequency, and reversibility of the impact;
- the cumulation of the impact with the impact of other existing and/or approved projects; and
- the possibility of effectively reducing the impact.

The classification and description of effects in this EIAR follows the terms provided in Table 3-3 of the 2017 EPA Draft Guidelines and are duplicated in Table 1-1 below for reference. As per the Guidelines, the terms listed in Table 1-1 can be used to consistently describe specific effects, but all categories of terms do not need to be used for every effect.

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

Table 1-1: Description of Effects (extract from EPA Draft Guidelines (August 2017))

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral	Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.



	<p>Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).</p>
<p>Describing the Significance of Effects 'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.</p>	<p>Imperceptible An effect capable of measurement but without significant consequences.</p>
	<p>Not significant An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>
	<p>Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>
	<p>Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.</p>
	<p>Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</p>
	<p>Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.</p>
	<p>Profound Effects An effect which obliterates sensitive characteristics.</p>
<p>Describing the Extent and Context of Effects Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.</p>	<p>Extent Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.</p>
	<p>Context Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)</p>
<p>Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.</p>	<p>Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.</p>
	<p>Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.</p>
<p>Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.</p>	<p>Momentary Effects Effects lasting from seconds to minutes</p>
	<p>Brief Effects Effects lasting less than a day</p>
	<p>Temporary Effects Effects lasting less than a year</p>
	<p>Short-term Effects Effects lasting one to seven years</p>
	<p>Medium-term Effects Effects lasting seven to fifteen years</p>
	<p>Long-term Effects Effects lasting fifteen to sixty years</p>
	<p>Permanent Effects Effects lasting over sixty years</p>
	<p>Reversible Effects Effects that can be undone, for example through remediation or restoration</p>



	<p>Frequency of Effects Describe how often the effect will occur. (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)</p>
Describing the Types of Effects	<p>Indirect Effects (a.k.a. Secondary Effects) Impacts on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway.</p>
	<p>Cumulative Effects The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.</p>
	<p>'Do-Nothing Effects' The environment as it would be in the future should the subject project not be carried out.</p>
	<p>'Worst case' Effects The effects arising from a project in the case where mitigation measures substantially fail.</p>
	<p>Indeterminable Effects When the full consequences of a change in the environment cannot be described.</p>
	<p>Irreversible Effects When the character, distinctiveness, diversity or reproductive capacity of an environment is permanently lost.</p>
	<p>Residual Effects The degree of environmental change that will occur after the proposed mitigation measures have taken effect.</p>
	<p>Synergistic Effects Where the resultant effect is of greater significance than the sum of its constituents, (e.g. combination of SO_x and NO_x to produce smog).</p>

1.7 STUDY TEAM AND CONTRIBUTORS TO THE EIAR

TOBIN Consulting Engineers have been engaged by Springfield to coordinate and prepare this EIAR for the Castlebanny Wind Farm and to submit it to An Bord Pleanála as part of the planning application for statutory consent. The relevant inputs of the various contributors and competent experts of the Project Team are provided in Tables 1-2 and 1-3.

Table 1-2: List of Company Contributors to the EIAR

Company	Name	Contribution to the EIAR
TOBIN Consulting Engineers	<p>(EIAR Chapter number for which primary author)</p> <p>Damien Grehan John Staunton (1, 2, 11, 14, 17) Siobhán Tinnelly Mark McCarthy (1) Alan Kelly Kathy McNally (3, 4) Robert Hunt (5, 10) John Dillon (8, 9) Michelle Wong (8, 9) Michael Nolan Fergal Healy Laura Gaffney (16) Niamh O'Connell (18)</p>	<p>Project Direction and Management, Scoping and Consultation, Co-Ordination, Preparation of Figures, and the following Chapters:</p> <ul style="list-style-type: none"> • Introduction • Description of the Proposed Development • Reasonable Alternatives • Policy, Planning and Development Context • Population and Human Health • Land, Soils and Geology • Hydrology and Hydrogeology • Shadow Flicker • Material Assets – Aviation, Telecommunications • Air Quality & Climate



		<ul style="list-style-type: none"> Traffic and Transport Interactions of the Foregoing Schedule of Mitigation Measures <p>TOBIN has also prepared the planning application and planning drawings</p>
AWN Consulting	Aoife Kelly Dermot Blunnie	Noise and Vibration
Macroworks	Richard Barker Jamie Ball	Landscape and Visual Impact
Moore Group	Declan Moore William Anderson Nigel Malcom	Cultural Heritage
Blackthorn Ecology	Dr George F. Smith Dr Caroline Shiel Dr Chris Smal	Biodiversity: Flora & Fauna / Appropriate Assessment Screening and Natura Impact Statement
Triturus Environmental, Ltd.	Dr. Ross Macklin	Biodiversity: Flora & Fauna / Appropriate Assessment Screening and Natura Impact Statement
Independent Consultant	Dr. Tom Gittings	Ornithology / Collision Risk Model
Oran Ecology	James Owens	Forestry Replanting Report and associated Appropriate Assessment Screening and Natura Impact Statement
Pager Power Ltd..	Michael Watson Michael Sutton Danny Scrivener	Technical Input on Aviation
Independent Consultant	Captain Fintan Richard Ryan	Technical Input on Aviation
Ground Investigations Ireland	Eoin Byrne Conor Finnerty	Site Investigations
Ciaran Reilly & Associates	Dr Ciaran Reilly	Peat Stability Risk Assessment
Western Forestry Co-op	Marina Conway Joseph McManus Kevin Dunne	Forestry Report

Table 1-3: List of Competent Experts Contributing to the EIAR

Company/Individual	Competent Experts	Qualifications	No. of Years' Experience
TOBIN Consulting Engineers	Damien Grehan	Honours Degree in Engineering (1992), University College Dublin (UCD) Masters' Degree in Engineering Science (1994), UCD Chartered Engineer	25
TOBIN Consulting Engineers	Dr John Staunton	BSc. in Environmental Science, National University of Ireland Galway (NUIG) PhD. Environmental Science, NUIG	12
TOBIN Consulting Engineers	Siobhán Tinnelly	Postgraduate Diploma in Management, Irish Management Institute (IMI), 2017 MSc. Applied Hydrogeology, University of Newcastle-upon-Tyne, 2013 Post Graduate Diploma in Environmental Engineering, Trinity College Dublin, 2004 B.A. (Mod) Natural Sciences (Env. Science), Trinity College Dublin, 1996-2000 Professional Geologist, P.Geo. Institute of Geologists of Ireland (IGI)	20



TOBIN Consulting Engineers	Alan Kelly	Postgraduate (PG) Diploma in Environmental Planning (2003), Queens University Belfast (QUB) BA in Human and Physical Geography (2001), NUIG Chartered Member of the Irish Planning Institute	16
TOBIN Consulting Engineers	Mark McCarthy	Masters in Urban and Regional Planning, Heriot Watt University, Edinburgh, 2005 BA in Public Administration, university of Limerick, 2003 Chartered Member of the Irish Planning Institute	15
TOBIN Consulting Engineers	Robert Hunt	BEng (Hons) in Civil Engineering, University of Dundee MSc. in Environmental Engineering, QUB Associate Certificate in Environmental Management Chartered Engineer	11
TOBIN Consulting Engineers	Kathy McNally	BSc. in Spatial Planning	3
TOBIN Consulting Engineers	John Dillon	BSc. in Environmental Science (2001), NUIG MSc. and Diploma in Environmental Engineering (2003), Imperial College London Professional Geologist (PGeo)	16
TOBIN Consulting Engineers	Michelle Wong	BSc. (Hons) Environmental Geoscience, University of Birmingham, 2009 MSc. Hydrogeology, University of Birmingham, 2010 PGeo and EurGeol (awaiting certification)	10
TOBIN Consulting Engineers	Michael Nolan	City & Guilds in Computer Aided Design (2001), Griffith College Dublin	16
TOBIN Consulting Engineers	Fergal Healy	BA in History and Geography, NUIG MSc. in Resource Management and Sustainability, NUIG/University of Limerick CPD Cert in Geographical Information Systems (GIS), Dublin Institute of Technology (DIT)	3
TOBIN Consulting Engineers	Laura Gaffney	BEng (Ord) in Civil Engineering (2005), Galway-Mayo Institute of Technology (GMIT); BEng (Hons) in Civil Engineering (2007), Queens University Belfast (QUB); Masters' Degree in Environmental Engineering (2011), QUB Chartered Engineer	9
TOBIN Consulting Engineers	Niamh O'Connell	BSc. (Hons) in Chemistry of Pharmaceutical Compounds (2018), University College Cork; MSc. In Environmental Sustainability (in progress as of January 2020), University College Dublin	2
Western Forestry Co-Op	Marina Conway	B(Agr)Sc. Forestry (1996), University College Dublin; M(Agr)Sc. (2006), University College Dublin; HETAC Postgraduate Cert. Water Pollution Control, Institute of Technology Sligo. Native Woodland Scheme (Forest Service, Ireland). Cert. Upland Forest Design (Forestry Commission UK)	24
Western Forestry Co-Op	Joseph McManus	BSc in Forestry, Professional Member of the Society of Irish Foresters	6



Western Forestry Co-Op	Kevin Dunne	BSc in Forestry, Professional Member of the Society of Irish Foresters	2
Oran Ecology	James Owens	BSc. in Forest Management, Galway-Mayo Institute of Technology (GMIT)	8
AWN Consulting	Aoife Kelly	BSc. Environmental Health, Food Safety, Environment, Quality, Health and Safety, (2007), Dublin Institute of Technology Certificate of Competence in Workplace Noise Risk Assessments, (2009), Institute of Acoustics PhD. Occupational Noise, (2012)	13
AWN Consulting	Dermot Blunnie	BEng (Hons) in Sound Engineering (2007), University of South Wales PG Diploma in Acoustics and Noise Control (2010) Institute of Acoustics MSc. in Applied Acoustics (2013) University of Derby	11
Macroworks	Jamie Ball	BA Hons (Landscape Architecture) 1998	12
Macroworks	Richard Barker	PG Diploma in Forestry (1996) BA in Environmental Studies (1995) Master's Degree in Landscape Architecture (2003) Corporate Member of the Irish Landscape Institute	21
Moore Group	Declan Moore	BA in Archaeology and English (1991) NUIG Certificate in Management Studies (1994)	30
Moore Group	William Anderson	BA Hons, Art History/Archaeology (University of East Anglia, 2001); MA, Archaeology (Leiden University, 2004); PhD, Archaeology (University of Melbourne, 2011)	17
Moore Group	Nigel Malcom	B.Sc. Biological Sciences, Murdoch University, Perth, Western Australia, 1992	18
Blackthorn Ecology	Dr. George F. Smith	BSc in Biology (1993) University of Notre Dame MSc Ecology (1997) University of Tennessee, Knoxville PhD, Botany (2003), Trinity College Dublin Chartered Ecologist Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM),	17
Independent Consultant	Dr. Caroline Shiel	BSc in Zoology (1989) University College Galway PhD in Zoology (1998) University College Galway	22
Independent Consultant	Dr. Chris Smal	B.Sc. Ecological Science, University of Edinburgh 1974. Ph.D. Zoology. University College Galway. 1978 Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)	42
Triturus Environmental, Ltd.	Dr. Ross Macklin	BSc in Applied Biology (2004) University College Cork PhD in Zoology (2017) University College Cork Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)	15



Independent Consultant	Dr. Tom Gittings	BSc. in Ecology (1988), University of East Anglia PhD. in Zoology (1994), UCC	24
Pager Power Ltd.	Michael Watson	BEng Hons (Enhanced) Electronic Computer and Communications Engineering 2(i) Microsoft Certified Solution Developer (MCSO) Qualified Private Pilot (PPL - Aeroplanes)	30
Pager Power Ltd.	Michael Sutton	BSc in Business Analytics (2018), University of Southampton MSc Computer Science with Data Analytics (in progress as of January 2020)	2
Pager Power Ltd.	Danny Scrivener	BSC Hons Environmental Science	8
Independent Aviation Expert	Captain Fintan Richard Ryan	Masters in Engineering (UCD), Chartered Engineer, 20 years as a pilot (5 as senior captain), 9000 flight hours, "Accredited Accident Investigator" for The International Federation of Airline Pilots' Association	20+
Ciaran Reilly & Associates	Dr Ciaran Reilly	BEng in Civil, Structural and Environmental Engineering, NUIG	14
Ground Investigations Ireland	Eoin Byrne	Engineering Geologist BA Earth Science	3
Ground Investigations Ireland	Conor Finnerty	Technical Director Geotechnical Engineer BA BAI (Engineering) CEng MIEI	16

1.8 SCOPING AND CONSULTATION

The EIAR Scoping and consultation activities were carried out in accordance with all relevant guidance documents as set out in Section 1.6.

Scoping is a process of deciding what information should be contained in an EIAR and what methods should be used to gather and assess that information. The purpose of scoping for the EIAR is to provide a framework for the approach to be taken by the individual specialists in carrying out their evaluations, identifying environmental aspects for which potential significant environmental impacts may arise. It also provides a framework for the consultation process and sets out the intended structure of the Final EIAR.

1.8.1 Consultation With An Bord Pleanála

The first pre-application consultation meeting was held with An Bord Pleanála via web conference on the 28th May 2020, with the second held on the 29th July 2020. The purpose of the first meeting was to introduce the Castlebanny wind farm development to the Bord in order to provide the Bord with the necessary information to enable it to decide on the strategic infrastructure development status of the project. The meeting was attended by Coillte and TOBIN representatives. The meeting discussion was centred around the following key points:

- Introduction to the Project Team
- Background to the Castlebanny Wind Farm Project
- SID Determination
- Policy
- EIAR Methodology
- Key Environmental Considerations
- Environmental and Consultation Activities to date
- Project Deliverables and Timelines.



At the meeting, the Bord detailed the pre-application consultation process. A presentation was given providing information on the site and the proposed development. The Bord provided some guidance on key topics to be included in the EIAR and some points that they wanted to see addressed therein. A discussion followed about consultation that had been carried out and specific details of the proposed development.

The second meeting was held via web conference on the 29th July 2020, with representatives of the Bord, Coillte and TOBIN in attendance. The main points discussed were as follows:

- Climate Impact Assessment
- Landscape Assessment
- Appropriate Assessment
- Consultations
- Application Pathway
- Project Duration.

In addition, topics discussed during the first meeting were revisited. The Bord emphasised the importance of calculation of the volume of carbon offset by the proposed wind farm, taking account of the carbon lost throughout all stages of the site development, operation and decommissioning of the turbines. The Bord also outlined that it would be open to considering alternative fixed term duration for the wind farm, noting that recent approvals were for 30 year duration.

The Bord confirmed on 16th December 2020 that the proposed development constitutes strategic infrastructure development and that a planning application should be made directly to the Board.

1.8.2 Consultation With Statutory And Non-Statutory Bodies

An EIAR Scoping Report was prepared and submitted to relevant statutory and non-statutory bodies in February 2020 (either by email or post) for review and comment. A copy of the EIAR Scoping Report is provided in Appendix 1-2. The EIAR Scoping Report was accompanied by a cover letter introducing the proposed development and inviting comments or observations within a period of six weeks from the date of the letter. A copy of the Scoping Report, with a standard cover letter is provided in Appendix 1-2 and all responses received from consultees are provided in Appendix 1-3.

The list of consultees and record of consultation is provided in Table 1-4.

Table 1-4: List of Consultees and Record of Consultation

Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
Kilkenny County Council – Director of Services	27 th March 2020	9 th October 2020	The response to the consultation led to the organisation of a preplanning meeting with the Director of Services and a Senior Planner with members of the project team. This was held on the 9 th of September 2020, in which an overview of the proposed project was presented. Among other topics, the status of the County Development Plan for Kilkenny was discussed, which is likely to be released in December 2020. In particular, the prospective applicant sought to provide information on the Recreation plan and the Community Engagement Process.	N/A
Kilkenny Council – Planning Department	27 th March 2020	4 th November 2020	A teleconference was held via Microsoft Teams with members of the planning department (KCC) on the 4 th November 2020. A presentation was given outlining the project purpose, impact assessments carried out and application process under SID guidelines. The main point of interest during the consultation was the visual impact. A selection of photomontages and Zone of Theoretical Visibility maps were examined. Additionally, the consultation process was outlined, with emphasis on the work carried out by the Community Liaison Officer (CLO), as well as the content available on the project website. KCC suggested the use of their local offices at Thomastown and Ferrybank for public access to planning application information for the proposed windfarm.	Considered during planning application preparation
Kilkenny County Council – Area Engineer	13 th October 2020	15 th October 2020	A call took place on the 15 th October between Laura Gaffney (TOBIN) and Stan Cullen (KCC), highlighted constraints to be taken into account for considering construction haulage routes. The key road was identified to be the R704, in terms of the impact assessment. A survey was proposed to examine the local road network if required, but preference will be for regional and national roads. The turbine delivery route identified approximately 12 pinch points, which may require a Road Opening License and will be subject to an Abnormal Load License. Detailing at junctions will be required to account for drainage, demountable signage and other impacts. Similarly, the Construction	N/A



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			Programme was discussed, examining impacts due to concrete pouring, borrow pits and civil works at the site	
Kilkenny County Council – Roads Department	16 th October 2020	16 th and 20 th October 2020	A response was provided by email on the 16 th from Seamus Foley, emphasising the importance of traffic impacts in both the construction and decommissioning stages of the windfarm. Discussion of traffic counts with respect to Covid-19, suggested volumes at present may not be fully representative of pre-Covid-19 volumes and encouraged use of suitable judgement to estimate numbers. A call took place on the 20 th of October between Laura Gaffney (TOBIN) and Seamus Foley (KCC). During the call it was agreed there would be no requirement for junction assessments. Requests were made by TOBIN for information from KCC regarding suitable traffic counts for the R704. KCC requested a Road Safety Audit of the proposed site entrance.	Considered in preparation of Chapter 16 (Traffic and Transport)
Department of Communications, Climate Action and Environment	20 th February 2020	12/03/20	Response received from GSI. Recommended reference to GSI Geohazard maps. Confirms there are no County Geological Sites in the vicinity of the proposed wind farm. Recommends identifying areas for integrated constructed wetlands as part of flood risk management and using the GSI's groundwater map viewer. Recommends consulting the geotechnical database of the GSI.	Considered in preparation of Chapter 8 (Land, Soil and Hydrology)
Department of Culture, Heritage and the Gaeltacht (Development Applications Unit)	20 th February 2020	22 April 2020	The Department notes in respect of archaeology that it will await the submission of the Cultural Heritage and Archaeological Impact Assessment before commenting further. However, it does advise that it is the published policy of the Department that large-scale development be subject to archaeological monitoring during the course of groundworks.	Considered in preparation of Chapter 15 (Cultural Heritage)
Department of Housing, Planning and Local Government	7 th February 2020	7 th February 2020	The Department provided a summary of the current status of its review of the 2006 Wind Energy Development Guidelines and also confirmed that under Section 30 of the Planning and Development Act 2000, as amended, it is precluded from commenting directly on any particular projects or planning applications.	N/A



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
Department of Agriculture, Food and Marine	20 th February 2020	N/A	No response	N/A
Transport Infrastructure Ireland (TII)	21 st February 2020	9 th March 2020	<p>TII acknowledged receipt of the scoping report and provided the following comments:</p> <p>The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety, and operational efficiency of that network.</p> <p>The scheme promoter should note locations of existing and future national road schemes and develop proposals to safeguard proposed road schemes. Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes.</p> <p>In relation to grid connection and cable routing, proposals should be developed to safeguard proposed road schemes as TII will not be responsible for costs associated with future relocation of cable routing where proposals are catered for in an area of a proposed national road scheme. In that regard, consideration should be given to routing options, use of existing crossings, depth of cable laying, etc.</p> <p>Clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits, and other licences may be required in connection with the proposed haul route. Consultation with relevant companies may also be required. All structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.</p> <p>Where appropriate, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines.</p> <p>TII Standards should be consulted to determine the requirement for Road Safety Audit (RSA) and Road Safety Impact Assessment (RSIA).</p>	Considered in project design and preparation of Chapter 16 (Traffic & Transportation)
An Taisce - The National Trust for Ireland	20 th February 2020	N/A	None	N/A



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
Fáilte Ireland	20 th February 2020	21 st April 2020	<p>Fáilte Ireland acknowledged receipt of the scoping report and provided a copy of Fáilte Ireland’s EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects for reference. The following comment was also provided:</p> <p>“we recommend [these guidelines] should be taken into account in preparing the EIAR. The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.”</p>	Considered in preparation of Chapter 5 (Population & Human Health).
The Heritage Council	20 th February 2020	N/A	None	N/A
Southern Regional Assembly	20 th February 2020	21 st February 2020	The Southern Regional Assembly acknowledged receipt of the scoping report and advised that it had been referred to the Regional Planning Division. No further comment received.	N/A
Inland Fisheries Ireland	20 th February 2020	21 st February 2020	<p>IFI provided a brief specific commentary on the wind farm and also provided more generic type comments which are relevant to wind farm developments in the wider context.</p> <p>The specific comments related to the protection of the aquatic resource and associated riparian habitat noting that the Mullenhakill stream (and others) cross the proposed site and which feed into the Arrigle river, part of the River Barrow and River Nore SAC. IFI would like to see a detailed design and works methodology for a potential crossing of the Arrigle for the grid connection.</p> <p>The following generic comments were also provided: All watercourses must be assessed in detail in terms of aquatic biodiversity. Changes in river morphology should be avoided. Electrofishing surveys will be required for all waters. The presence of salmonid species, crayfish and lamprey species will be of particular concern. IFI are concerned about soils, their structure and types around all the turbines, turbine pads, associated access roads and site development. The potential for soil movement and landslides should be assessed.</p>	Considered in project design and preparation of Chapter 6 (Biodiversity: Flora & Fauna), Chapter 7 (Ornithology), Chapter 8 (Land, Soil and Hydrology), Chapter 9 (Hydrology & Hydrogeology), Appropriate Assessment Screening Report and Natura Impact Statement



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			<p>Particular attention should be paid to the hydrology of any site where excavations, including excavations for road construction are being undertaken.</p> <p>Attention should be paid to drainage during both the construction phase and the operational phase. This includes waters being pumped from foundations or other excavations. It is particularly important during the construction phase that sufficient retention time in any settlement pond is available to ensure no deleterious matter is discharged to waters. It is strongly recommend that settlement ponds are maintained, where appropriate, during the operational phase to allow for the adequate settlement of suspended solids and sediments and prevent any deleterious matter from discharging.</p> <p>IFI have concerns about the construction of roads as these will tend to provide preferential flow paths for surface waters.</p> <p>Consideration must be given to the disposal of waste materials such that they will not give rise to discharges to waters.</p> <p>Details in relation to site offices and the services necessary for the site offices should form part of the EIA.</p> <p>The use of sedimentary rocks, such as shale, in road construction should be avoided. IFI recommend that specialist expertise should advise on the type of material required for road construction.</p> <p>Any instream works or other works which may impact directly on a watercourse should only be carried out during the open season which is from 1st July to 30th of September in each year</p> <p>The EIAR should indicate proposals to monitor the impact on watercourses within the site</p> <p>In relation to wind farm structures and infrastructure it is important that a sufficient bank side riparian zone is maintained to absorb and attenuate overland flows.</p> <p>The discharge of polluting or deleterious matter to any watercourse except under and in accordance with a licence may be an offence under the Fisheries Acts and/or under the Water Pollution Acts.</p> <p>Should works be approved a finalised CEMP must be agreed with Inland Fisheries Ireland before works commence</p>	
Waterways Ireland	20 th February 2020	24 th February 2020	Waterways Ireland advised that it has no comments to make on the proposed wind farm.	N/A



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
Irish Aviation Authority (IAA)	20 th February 2020	26 th February 2020	<p>IAA advised that it will await formal notification from An Bord Pleanála confirming the strategic infrastructure status of the development before furnishing any formal observation on the wind farm. However, based on the information presented in the scoping report, IAA did advise that it would be unlikely to have any specific concerns but did encourage engagement with the Air Corps / Department of Defence.</p> <p>IAA further advised that in the event of planning permission being granted, that the applicant should contact IAA to agree an aeronautical warning light scheme of the wind farm development and also to provide grid coordinates and ground and tip height elevation data for the wind turbines.</p>	Considered in project design and preparation of Chapter 11 (Material Assets: Aviation & Telecommunications)
Kilkenny Airport	20 th February 2020	-	None	N/A
Waterford Airport	20 th February 2020	30 th March 2020	<p>Waterford Airport advised that from its review of the scoping report it appears the height above sea level across the site varies considerably. The proposed location of turbines on the eastern side of the site are at significant heights above sea level, some of which may in combination with the turbine be in excess of 1,400ft above mean sea level.</p> <p>The proposed location of turbine number 1 which has the potential total height of nearly 1,300 feet is approximately 3 nautical miles from the north west edge of the Waterford Airport control zone, and 5 nautical miles from the instrument approach flight procedures for the prevailing runway 21.</p> <p>The Airport is concerned that wind turbines at such heights may have an impact on aircraft operations at Waterford Airport.</p> <p>An aeronautical study would be necessary covering as a minimum an assessment of the safety impact on the airport instrument approach flight procedures, the mandatory aerodrome safety surfaces, and any effects on the safety calibration flights ability to conduct the required flight checking programme for the navigational aids and instrument landing systems at Waterford Airport.</p> <p>A virtual meeting was held on the 1st October 2020 with Waterford Airport management who advised that they had additional concerns relating to their</p>	Considered in project design and preparation of Chapter 11 (Material Assets: Aviation & Telecommunications). A number of reports were commissioned and provided to Waterford Airport as discussed in Chapter 11 (Material Assets: Aviation & Telecommunications).



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			planned future runway. It was agreed that a further study of this would be carried out to assess if there were any potential impacts.	
Coras Iompair Eireann (CIE)	20 th February 2020	-	None	N/A
Department of Transport, (formerly the Department of Transport, Tourism and Sport)	20 th February 2020	-	None	N/A
HSE South	20 th February 2020	21 st February 2020	A representative from the Consumer Affairs Department of HSE South responded to the scoping letter. The letter outlined that the information on file at the Department, was patient sensitive and protected under GDPR. They were not in a position to comment on the scoping document. The HSE head office address was provided for any further queries, and a scoping document was then forwarded to that address. No further response was received. .	N/A
Commission for Regulation of Utilities	20 th February 2020	-	None	N/A
Irish Water	20 th February 2020	-	None	N/A
Department of Defence	20 th February 2020	12 March 2020	The Department identified a number of routes which are critical low level routes in support of Air Corps operational requirements and noted that the Corps is opposed to wind farms within 3NM of the route centreline. Applications for developments in these areas greater than 45m above ground level must be referred to the Irish Air Corps for an assessment of potential impact on flight operations. The Department also advised specific conditions relating to lighting in the event of planning permission being granted.	Considered in project design and preparation of Chapter 11 (Material Assets: Aviation & Telecommunications)
Geological Survey of Ireland (GSI)	20 th February 2020	12 March 2020	GSI made the following comments: GSI recommend that geohazards be taken into consideration, especially when developing areas where these risks and susceptibility are prevalent, and GSI encourage the use of their data when doing so.	N/A



Consultee	Consultation Date	Date of Response	Summary of Comments Received	Project Team Response to Comments Received
			<p>With regard to Flood Risk Management, there is a need to identify areas for integrated constructed wetlands. GSI recommends using the GSI's National Aquifer and Recharge maps on the Map Viewer to this end.</p> <p>GSI confirmed that there are no County Geological Sites in the vicinity of the proposed wind farm.</p> <p>GSI strongly recommend that their geotechnical database resource be consulted as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of the proposed development area. This information may be beneficial and cost saving for any site specific investigations that may be designed as part of the development.</p>	



1.8.3 Consultation with Telecommunications Providers

An extensive consultation exercise was also carried out with telecommunications providers that may have services in the area which could have the potential to be impacted by the proposed wind farm development. The list of telecommunications consultees, feedback received, and design implications are discussed in Chapter 12 (Material Assets – Aviation, Telecommunications and Electromagnetic Interference).

1.8.4 PUBLIC CONSULTATION

Springfield commenced engagement with the local community during the early stages of project design with the objective of ensuring that the views and concerns of all members of the local community were considered as part of the project design and the Environmental Impact Assessment process.

A community liaison officer (CLO) was appointed to the project team in September 2019. The CLO's role is to ensure project communications are distributed to the local community and to be the main point of contact for the community to discuss any queries or concerns that they might have. Contact details for the CLO (phone number and email address) were included in all project communications with the community.

Initial engagement commenced in December 2019 with circulation of project leaflet with basic information about the proposed project. This was hand delivered to all properties within 2 km of the proposed development and contact was made with the residents where they were available. Contact was made by phone or email in some instances and there were communications with three-quarters of the residents of the 140 dwellings in this area.

A project website for the project was launched in May 2020 which included basic project information and contact details for the project CLO.

A detailed project brochure was prepared and was circulated from August 2020. This brochure included information about the site and the proposed development, a site layout map and information on the community benefit scheme. The brochure also included information on the planning process, the site design process, information on key aspects of the environmental studies and some of the environmental benefits associated with the proposed project and next steps. Communications associated with the dissemination of this brochure reached a similar proportion of the local residents as with the initial consultation round.

As an in-person open event was not possible due to Covid-19 restrictions, an online virtual presentation was prepared. This was accessible from the front page of the project website and went live on the 13th October 2020.

An invitation letter to the on-line presentation was issued October 14th onward through a mail drop and, where necessary, via post, text and email to cover all households within at least 2Km of the project. An advertorial was published in the local newspaper, the Kilkenny People, which included details of the project and online resource. Local Parishes were emailed with a request for details to be included in Parish Newsletters. Information posters were also put up in a shop window in Ballyhale village which included details of the online resource and Community Liaison Officer contact details.



Community concerns were taken into consideration, for the most part, through compliance with relevant guidelines and best practice including:

- minimum setback from dwellings of 750 m;
- site layout based on consideration of landscape and visual impacts;
- avoidance of areas on environmental sensitivity;
- avoidance of telecommunication links;
- underground cable connection.

Consideration was given to further measures based on community concerns expressed during the community engagement process. The initial access point to the site was along a local road from the R704 and into an existing entrance. Based on potential impact on traffic on this local road, an alternative route into the site that used a forestry access off the R704 with just a crossing point on the local road was selected to minimise traffic disruption for local residents.

The location of this crossing point was moved to a point further north and the construction compound moved further into the site to further reduce construction traffic noise impacts on local residents.

Community benefits including proposed community benefit fund and recreation plan were also discussed as part of the public engagement. Springfield expects that for each megawatt hour (MWh) of electricity produced by the wind farm, the project will contribute €2 into a community fund for the RESS period i.e. 15 years of operation. Based on the project design as proposed in this application, this would amount to a fund of approximately € 500,000 per annum to support community schemes and a near neighbour scheme, in line with RESS guidelines.

The recreation plan includes approximately 13 km of walking/cycling trails, a car park and picnic facilities, outdoor exercise stations and signage. This was an aspect that attracted considerable interest and will provide a long lasting benefit to the local and wider community with extensive safe tracks for all ages and abilities to exercise on. Local community consultation has taken place to inform the recreation development and will continue to help guide the development of further amenities and services in the local area similar to previous Coillte developments such as Sliabh Bawn⁸ in Co. Roscommon and Cloosh Valley Wind Farm⁹ in Co. Galway.

Further details on the public consultation and community engagement are set out in the Castlebanny Wind Farm Community Report in Appendix 1-4.

1.9 ASSUMPTIONS AND LIMITATIONS OF ASSESSMENT

Specific assumptions relevant to environmental aspects are set out in the corresponding EIAR Chapters. Some general assumptions that have been made during preparation of this EIAR are set out below:

- In undertaking cumulative assessments, consented, but as yet un-built, developments have been assumed to have been built in accordance with and within the duration permitted by the associated grant of permission; and

⁸ <https://www.sliabhawnwindfarm.ie/>

⁹ <https://www.coillte.ie/media/2018/05/Galway-Wind-Way.pdf>



- Information provided by third parties, including publicly available information and databases, is correct at the time of publication.

Specific limitations relevant to certain environmental aspects are set out in the corresponding EIAR Chapter. Some general limitations associated with the preparation of this EIAR are set out below:

- Baseline conditions and assessments are assumed to be accurate at the time of the physical surveys but may be subject to change, due to the nature of the surrounding environment and surrounding activities; and
- The assessment of cumulative effects from built or consented developments is partially reliant on the availability of information provided by relevant third parties. Local Authority and An Bord Pleanála public planning registers were reviewed as part of the assessment process. None of the individual specialists have highlighted any limitations that are considered significant in terms of the undertaking of these specialist cumulative assessments.

The activities carried out in researching, surveying and preparing this EIAR were carried out, in the main, between Q3 2016 and Q3 2020. The first case of COVID-19 was reported in Ireland at the end of February 2020 and measures required in accordance with the public health guidance were introduced on 12 March 2020. From 27 March 2020, movement outside of the home was not permitted, with limited exemptions. The easing of these restrictions commenced on 18 May 2020. It is noted that, while these restrictions in movement coincided with an important period of time in the preparation of the EIAR, there are no limitations associated with the content of this EIAR as a result of COVID-19 and the associated public health measures.

1.10 LIST OF PLANNING DRAWINGS

Table 1-5 provides a list of the drawings submitted with the planning application which are referenced throughout this EIAR.

Table 1-5: List of Planning Drawings

Drawing No.	Drawing Title
10730-2000	Regional Site Location Map
10730-2001	Site Location Map
10730-2005	Site Master Plan
10730-2006	Site Layout Plan - Sheet 1 of 10
10730-2007	Site Layout Plan - Sheet 2 of 10
10730-2008	Site Layout Plan - Sheet 3 of 10
10730-2009	Site Layout Plan - Sheet 4 of 10
10730-2010	Site Layout Plan - Sheet 5 of 10
10730-2011	Site Layout Plan - Sheet 6 of 10
10730-2012	Site Layout Plan - Sheet 7 of 10
10730-2013	Site Layout Plan - Sheet 8 of 10
10730-2014	Site Layout Plan - Sheet 9 of 10
10730-2015	Site Layout Plan - Sheet 10 of 10
10730-2030	Proposed Temporary Site Compound
10730-2031	Typical Turbine Hardstand Layout
10730-2032	Typical Turbine Details
10730-2033	Typical Road Construction Details



10730-2034	Typical Surface Water Settlement Pond - Plan & Sections
10730-2035	Typical Culvert Details
10730-2037	Typical Met Mast Details
10730-2038	Typical Fencing Details
10730-2040	Proposed Self Contained, Temporary Wheelwash System - Typical Details
10730-2041	Proposed on Site Borrow Pits - Typical Details
10730-2050	Site Entrance & Visibility Sightlines - R704
10730-2051	Site Entrance & Visibility Sightlines - L7451
10730-2052	Site Entrance Improvement Works & Autotrack Assessment - R704
10730-2053	Site Entrance Improvement Works & Autotrack Assessment - L7451
10730-2055	Site Amenity / Recreation Plan
05699-DR-001	Overall Site Location Plan
05699-DR-002	Site Layout Plan Sheet 1 of 3
05699-DR-003	Site Layout Plan Sheet 2 of 3
05699-DR-004	Site Layout Plan Sheet 3 of 3
05699-DR-100	Ducting through Off Road
05699-DR-101	Ducting through Regional Roads
05699-DR-102	Details of Comms Chamber
05699-DR-103	Details of Link Box
05699-DR-104	Details of Flat Formation
05699-DR-105	DC Ditch_Drain Crossing
05699-DR-106	Typical HDD
05699-DR-107	Joint Bay Details
05699-DR-108	Ducting through Forestry
05699-DR-109	Watermain Overcrossing
05699-DR-110	Watermain Undercrossing
05699-DR-111	Culvert Overcrossing
05699-DR-112	Culvert Undercrossing
05699-DR-113	Culvert Crossing Schedule
05699-DR-202	Substation Site Layout Plan
05699-DR-203	Substation Compound Elevations
05699-DR-204	Substation Building Elevations
05699-DR-205	MV Customer Switchgear Room
05699-DR-206	Palisade Fencing Details
05699-DR-300	Loop In SLP
05699-DR-301	Loop-In Cross Sections
05699-DR-302	CSE Tower
TLI-05699-GC-DR-P-002	110kV Loop-In Option 1
TLI-05699-GC-DR-P-003	110kV Loop-In Option 2
TLI-05699-GC-DR-P-004	Cable Interface Tower Details
342068-100A1.1	R704 Improvement Works for Blade Delivery
342068-110A1.1	R704 Improvement Works for Blade Delivery



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