

Ballyfeeny Green Energy Project



Environmental Impact Assessment Report Volume III

Appendix 1.4 – Design Flexibility Request September 2025

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Planning Department
Roscommon County Council
Áras an Chontae
Roscommon Town
Co Roscommon
F42 VR98

Thursday, 17th April 2025

Re: REQUEST UNDER SECTION 32(H) OF THE PLANNING AND DEVELOPMENT ACT 2000 (AS AMENDED) FOR A DESIGN FLEXIBILITY OPINION REGARDING A 6 NO. WIND TURBINE PROPOSED PROJECT AT TOWNLANDS OF BALLYFEENY & TULLY, CO. ROSCOMMON

1.0 INTRODUCTION

Ballyfeeny Green Energy Limited¹ have retained Tom Phillips + Associates² in regard to the proposed Project of the *Ballyfeeny Green Energy Project* consisting of a wind farm within the townlands of Ballyfeeny & Tully, Co. Roscommon.

The Applicant wishes to avail of a *Design Flexibility Opinion* from the Planning Authority. This process allows a prospective applicant who wishes to avail of a degree of flexibility in a planning application, to request a meeting with the Planning Authority for the purpose of receiving an opinion as to whether it is appropriate that an application for permission be made before certain details of the proposed Project are confirmed.

This *Cover Letter* will provide an overview of the information needed to facilitate this request as well as provision of supporting information to assist the Planning Authority.

2.0 RATIONALE FOR REQUEST

It is submitted that the primary legislative context in regard to the rationale for this request is detailed within the accompanying 'Statement of Request' by Rowan Engineering Consultants Ltd enclosed. In addition to such, we note the following:

2.1 Circular PL 11/2023

Circular PL11/2023 was issued to Local Authorities and published on 21st December 2023 on behalf of the then Minister for Housing, Local Government and Heritage, Darragh O'Brien, Circular Letter PL 11/2023, entitled "*New design flexibility provisions with regard to certain unconfirmed details as part of application for planning permission*", offers further guidance to

¹ Greensource offices, Station Road, Adare, Co. Limerick

² 80 Harcourt Street Dublin 2 D02 F449



both prospective applicants and Local Authorities concerning matters of Design Flexibility Opinion.

Of importance to this subject Request, the Circular Letter notes the following:

*"The primary legislation provides for a process whereby a prospective applicant/project promoter who wishes to avail of a degree of flexibility in their planning application may, in advance of submitting their planning application, request a meeting with the planning authority or the Board for the purpose of receiving an opinion as to whether it is appropriate that an application for permission be made before certain details of the proposed development are confirmed. **Such unconfirmed details may, for example in the case of a wind farm application, include the precise height or blade length of a wind turbine or the precise grid connection point and route. This process is intended to apply to certain details of a proposed development and is not intended to apply to points of detail generally dealt with by way of compliance condition and agreed between the applicant and the planning authority or the Board post-consent.**"*

The subject Circular also details the updated fees per each Request noting, as per S.I. No. 654 of 2023. We submit that this request is fully aligned with the above guidance as further set out within the attached 'Statement of Request' prepared by Rowan Engineering Consultants Ltd contains the necessary information to convene a meeting.

3.3 Previous relevant Examples

To assist the Planning Authority in facilitating this request we hereby set out the following examples where Local Authorities have issued an *Opinion* for an onshore proposed wind farm development following similar requests:

- Clare County Council: Planning Application Reg. Ref 2460411³ (ABP Ref. 321285⁴)
- Fingal County Council: Planning Application Reg. Ref SID/03/24⁵ (ABP Ref. 319799⁶)
- Kilkenny County Council: Planning Application Reg. Ref. 2460210⁷
- Leitrim County Council: Planning Application Reg. Ref 2460223⁸
- Louth County Council: Planning Application Reg. Ref 2460766⁹
- Mayo County Council: Planning Application Reg. Ref 2460537¹⁰

3.0 DOCUMENTS ENCLOSED

The following documents are enclosed with this request:

³ <https://www.eplanning.ie/ClareCC/AppFileRefDetails/2460411/0>

⁴ <https://www.pleanala.ie/en-ie/case/321285>

⁵ <https://planning.agileapplications.ie/fingal/application-details/98304>

⁶ <https://www.pleanala.ie/en-ie/case/319799>

⁷ <https://planning.kilkennycoco.ie/AppFileRefDetails/2460210/0>

⁸ <https://www.eplanning.ie/LeitrimCC/AppFileRefDetails/2460223/0>

⁹ <https://www.eplanning.ie/LouthCC/AppFileRefDetails/2460766/0>

¹⁰ <https://www.eplanning.ie/MayoCC/AppFileRefDetails/2460537/0>



- 1 no. electronic copy of the Completed Flexibility Meeting Request Form prepared by Rowan Engineering Consultants Ltd.
- 1 no. electronic copy of the of 'Statement of Request' by Rowan Engineering Consultants Ltd including Appendices.
- 1 no. electronic copy of the evidence of payment of the appropriate fee - €2,500.

The subject *Request*, to the best of our knowledge, contains all relevant documentation and particulars needed for the Planning Authority to arrange the requested meeting and following this formulate their *Opinion*, which will set out the details that will be confirmed by the Applicant at a later stage and the circumstances considered appropriate to allow an application to proceed on this basis.

In the meantime, if you require any further information, please do not hesitate to contact me.
Yours sincerely,

Brian Minogue
Associate Director
Tom Phillips + Associates



Comhairle Contae
Ros Comáin
Roscommon
County Council



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Planning Department, Áras an Chontae, Roscommon, Co. Roscommon.

Phone: (090) 6637100

Email: planning@roscommoncoco.ie

Request to Roscommon County Council

Design Flexibility with regard to Proposed Application for Permission or Approval

PLEASE NOTE THE FOLLOWING:

Failure to complete this form or attach the necessary documentation, or the submission of incorrect information or omission of required information, will lead to the planning authority or An Bord Pleanála, refusing to deal with your request. Therefore, ensure that each section of this request form is fully completed and signed, entering n/a (not applicable) where appropriate, and that all necessary documentation is attached to the request form.

HOLDING OF MEETING WITH THE PLANNING AUTHORITY OR AN BORD PLEANÁLA:

Under section 32J of the Planning and Development Act 2000, as amended, neither the taking place of a meeting under section 32H nor the provision of an opinion or notification under section 32I shall prejudice the performance by the planning authority of its functions under this Act or any regulations under this Act or any other enactment and cannot be relied upon in the formal planning process or in legal proceedings.

Under section 37C of the Planning and Development Act 2000, as amended, the holding of consultations under section 37B shall not prejudice the performance by An Bord Pleanála of any other of its functions under this Act or regulations

under this Act and cannot be relied upon in the formal planning process or in legal proceedings.

Under section 182E of the Planning and Development Act 2000, as amended, neither the holding of consultations under subsection (1), nor the provision of an opinion under subsection (3), shall prejudice the performance by An Bord Pleanála of any other of its functions under this Act or regulations under this Act, or any other enactment and cannot be relied upon in the formal planning process or in legal proceedings.

Under section 288(2) of the Planning and Development Act 2000, as amended, the performance by An Bord Pleanála of functions under section 287 shall not prejudice the performance by it of any of its other functions in relation to the prospective applicant, proposed application or proposed development concerned, or be relied on by any person in relation to; an application or request under this Chapter, the consideration by An Bord Pleanála of such application or request, or the making of a decision under this Chapter in respect of such application or request, or in proceedings before a court relating to, or in connection with, such application, request, consideration or decision.

DATA PROTECTION:

It is the responsibility of persons or entities wishing to use any personal data on a planning application form for direct marketing purposes to be satisfied that they may do so legitimately under the requirements of the Data Protection Acts 1988 to 2018. The Office of the Data Protection Commissioner states that the sending of marketing material to individuals without consent may result in action by the Data Protection Commissioner against the sender including prosecution.

RETURN OF COMPLETED FORMS:

Completed forms should be returned:

- by email to planning@roscommoncoco.ie

or

- by post to Planning Department, Roscommon County Council,
Áras An Chontae, Roscommon, Co. Roscommon, F42 VR98.

1. Prospective Applicant's Name:	Ballyfeeny Green Energy Limited
Address:	Ballyfeeny Green Energy Project, Ballyfeeny & Tully, Co. Roscommon
Telephone:	[REDACTED]
Email:	[REDACTED]

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2. Request for meeting:	
X	Section 32H(1) Request- section 34 application
	Section 37CC(1) Request- section 37E application (SID)
	Section 182F(1) Request- section 182B Strategic Electricity Application
	Section 182F(1) Request- section 182D Strategic Gas Application
	Section 287A(1) Request- section 291 Maritime Area Application

3. Contact details of person authorised to operate on behalf of the Prospective Applicant (Applicant or Agent): (Not for Public release):	
Name:	[REDACTED]
Correspondence Address:	[REDACTED]
Telephone:	[REDACTED]
Email:	[REDACTED]

4. Proposed Development:

Address of the proposed development:

Ballyfeeny Green Energy Project, Ballyfeeny & Tully, Co. Roscommon

Description of the proposed development:

The construction, operation and decommissioning of a wind farm, that comprises of one of three wind turbine technology options (Technology Option 1, Technology Option 2 or Technology Option 3). The technology options for the Project comprise of the following parameters:

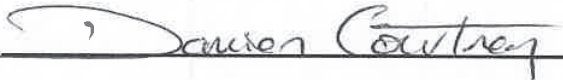
Turbine Parameter	Technology Option 1	Technology Option 2	Technology Option 3
Number of WTGs	6	6	6
Tip Height (m)	160	156	159
Rotor Diameter (m)	136	133	138
Hub Height (m)	92	90	90

Construction of site access tracks, hardstanding area, turbine foundations, associated drainage, and ancillary works; Installation of underground power and communication cables from the wind turbines to a substation building on the site; Construction of an onsite substation and control building; Construction, use and decommissioning of a temporary site compound for construction; Erection of a permanent communications relay tower; Construction of new site entrances and upgrading of existing entrances; Grid connection route from the onsite substation to the electricity grid network; Turbine delivery route (TDR) from the port of arrival to the project site; Community and biodiversity improvements associated with the development; All associated site works, including site clearance, and ancillary development including site drainage, security gates, fencing, permanent and temporary signage, and biodiversity mitigation and enhancements.

5. Declaration:

I hereby declare that, to the best of my knowledge and belief, the information given in this form is correct and accurate and fully compliant with the Planning and Development Act 2000, as amended, and the Regulations made thereunder.

Signature of person authorised to operate on behalf of the Prospective Applicant:

Signed: 

Date: 17/04/25

6. Formal Request:

In accordance with Section [32H], of the Planning and Development Act 2000 as amended, and Article 15J of the Planning and Development Regulations 2001 as amended, **Ballyfeeny Green Energy Limited** formally requests to enter into a meeting with **Roscommon County Council** regarding **(the proposed Ballyfeeny Green Energy Project** at Ballyfeeny and Tully, County Roscommon

7. Information to be included where relevant, with a meeting request under section 32H, 37CC, 182F or 287A of the Planning and Development Act 2000, as amended and article 15J the Planning and Development Regulations 2001, as amended.

8. Information:	Enclosed with request:		
(a) A site location map sufficient to identify the land on which the proposed development would be situated	Yes: [✓]	No: []	Please refer to the Statement of Request Appendix 2 - Site Location Map
(b) A brief description of the nature and purpose of the proposed development and of its possible effects on the environment	Yes: [✓]	No: []	Please refer to the Statement of Request Section 2.3, part c. and Appendix 5 – Project EIAR Scoping Report
(c) A draft layout plan of the proposed development	Yes: [✓]	No: []	Please refer to the Statement of Request Appendix 3 - Site Layout Map
(d) A description of the details, or groups of details, of the proposed development that, owing to the circumstances set out in paragraph below, are unlikely to be confirmed at the time of the proposed application	Yes: [✓]	No: []	Please refer to the Statement of Request Section 2.3, part e.

(e) A description of the circumstances relating to the proposed development, that indicate that it is appropriate that the proposed application be made and decided, before the prospective applicant has confirmed the details referred to in paragraph (d) above	Yes: [✓]	No: []	Please refer to the Statement of Request Section 2.3, part e.
(f) An undertaking to provide with the proposed application, either: - i. two or more options, in respect of each detail or group of details, referred to in paragraph (d) above, containing information on the basis of which the proposed application may be made and decided, or ii. parameters within which each detail referred to in paragraph above will fall and on the basis of which the proposed application may be made and decided, or iii. a combination of (i) and (ii)	Yes: [✓]	No: []	Please refer to the Statement of Request Section 2.3, part f.

(g) Such other information, drawings or representations as the prospective applicant may wish to provide or make available	Yes: [✓]	No: []	Please refer to the Statement of Request Appendix 4 - Drawing No. 23604 - 500 - Proposed Turbine Details
(h) The appropriate Fee	Yes: [✓]	No: []	Please refer to the Statement of Request Appendix 1 – Evidence of Fee Payment

Planning Authority Official Use Only

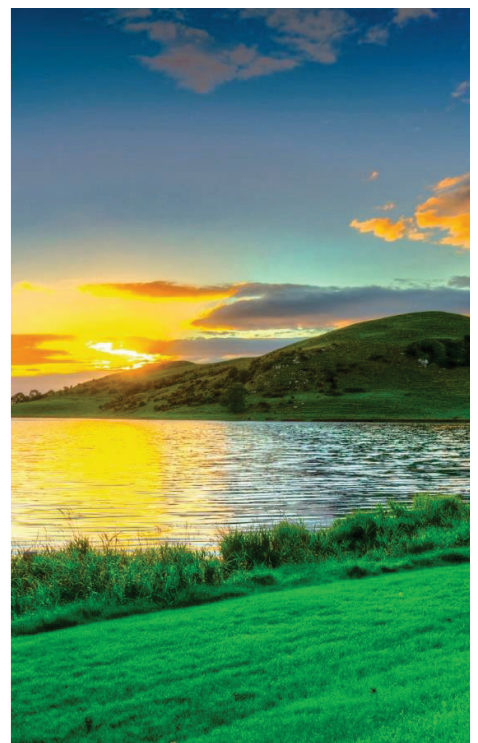
Planning Reference:

Planning Authority Stamp:

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Ballyfeeny Green Energy Project



Section 32

Design Envelope Flexibility Opinion

Statement of Request

Ballyfeeny Green Energy

April 2025

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Report Sign Off Page

CLIENT REF:	BALLYFEENY WIND ENERGY		
DEVELOPMENT ADDRESS	BALLYFEENY, CO. ROSCOMMON		
REVISION	DATE	ORIGINATOR	REVIEWER
REV00	17/04/2025	JM	TL BM

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1. Project and background of the Request

1.1 Introduction

Ballyfeeny Green Energy Limited ('The Applicant') is proposing to develop a wind energy development comprising 6 no. wind turbines and all associated infrastructure, at Ballyfeeny and adjacent townlands, County Roscommon.

It is proposed that power from the development will be provided to the electricity grid network via a grid connection, approximately 5.8 km long from the proposed Onsite Substation to the existing Sliabh Bawn 110kV Substation.

As part of the planning application for the proposed Project, Ballyfeeny Green Energy wish to request a formal opinion in relation to the proposed design flexibility under Section 32 of the Planning and Development Act, 2000 (as amended 2024).

The proposed Project comprises a wind energy development including 6 no. turbines and all associated infrastructure including Turbine Foundations, Turbine Hardstanding Areas, Internal Site Access Tracks, Wind Farm Internal Cabling, Grid Connection Route, Relay Tower, Onsite Substation and works required along the public road network for the turbine and material delivery.

1.1.1 Applicant

Ballyfeeny Green Energy Limited (hereafter referred to as 'The Applicant') is a subsidiary of Greensource Sustainable Developments Limited (Greensource Ltd.).

Greensource are an innovative Irish renewable energy company based in Adare, Co. Limerick, that specialises in the development of renewable energy projects, working with communities from pre-planning to operation, and creating long-lasting local partnerships.

Greensource has over ten years development and operational experience, holding a highly skilled and experienced team who are committed to developing projects with successful outcomes for all stakeholders. Working with integrity and care for the local environment, the team has a strong track record, having successfully completed wind energy and other renewable projects in the west of Ireland.

1.1.2 The Consultants

The Applicant has appointed Rowan Engineering Consultants Ltd. (hereafter referred to as 'Rowan') as the consultant for the proposed Project. Rowan will act as Agent for the Planning Application and are coordinating and preparing the planning application and Environmental Impact Assessment Report to accompany the application.

Rowan are a wholly owned Irish environmental and forensic engineering company based in Trim, Co. Meath, and Oranmore, Co. Galway, holding expertise in renewable energy projects, sustainability, environmental planning and environmental due diligence. Rowan was founded in 1998 and have successfully completed renewable energy projects in both Ireland and overseas.

Rowan are supported by Tom Phillips and Associates (TPA) who are acting as planning consultants, supporting Rowan with the submission of the Planning Application and preparing a planning report to accompany the application.

1.2 Legislation, Policy & Guidance Context of the Request

The planning application to Roscommon County Council, will comply with Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU (hereafter referred to as the 'EIA Directive'), which requires Environmental Impact Assessment (EIA) for certain types of major development before development consent is granted.

In addition to this the following planning legislation, environmental legislation relevant to geological, geotechnical, hydrological and hydrogeological aspects of the environment have been referred to:

- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended),
- The Heritage Act 1995 (as amended),
- The Wildlife Acts, 2000-2022.

Geographically, the site is located within County Roscommon and consequently, the Roscommon County Development Plan (CDP) 2022-2028 has also been consulted as part of the assessment process.

Planning and Development Act 2000 (as amended)

In this regard, Section 32H (1) details:

“A person who intends to apply for permission under section 34 (referred to in this section and section 32I as a “prospective applicant”) may, before making such an application (referred to in this section and section 32I as the “proposed application”), request a meeting for the purposes of section 32I with the planning authority or authorities in whose functional area or areas the proposed development would be situated”.

Concerning the timeline for a meeting, the Section 32H(5) of the Act notes that such a meeting must take place within four weeks since receipt of the request by the Local Authority:

“(5) Where a prospective applicant submits a request in accordance with subsection (1) or section 32B(1), the planning authority shall convene a meeting to take place within the period of 4 weeks beginning on the date on which the request is received by the planning authority”.

Further to this, Section 32I(1) of the Act sets a four-week timeline for the Local Authority to issue the requested Opinion if they are satisfied that the prospective applicant has confirmed certain details of the application.

32I.— (1) The planning authority shall, within the period of 4 weeks beginning on the date on which the meeting convened under section 32H(5) takes place, consider—

(a) the information included in the request for the meeting under section 32H, and

(b) any other relevant information that is made available at the meeting,

and determine if it is satisfied that it is appropriate that the proposed application be made and decided before the prospective applicant has confirmed certain details of the application.

(2) Where the planning authority determines that it is satisfied in accordance with subsection (1) it shall provide an opinion to that effect to the prospective applicant.

(3) Where the planning authority determines that it is not satisfied in accordance with subsection (1) it shall notify the prospective applicant to that effect.

Section 32 (I) (4) of the Act specify the particulars of the Opinion.

“(4) An opinion under subsection (2) shall specify—

(a) the details, or groups of details, of the proposed development as proposed by the prospective applicant that may be confirmed after the proposed application has been made and decided,

(b) the circumstances relating to the proposed development that indicate that it is appropriate that the proposed application be made and decided before the prospective applicant has confirmed the details referred to in paragraph (a), and

(c) that, in respect of each detail, or group of details, referred to in paragraph (a), the proposed application shall, in addition to any other requirement imposed by or under this Act, be accompanied by the information referred to in section 32H(2)(f).

(5) An opinion issued by a planning authority under subsection (2) shall only be made public when a planning application in respect of the proposed development is made in accordance with section 34.”

2. Statement of Request

2.1 Overview of Request

The applicant is applying for design flexibility in accordance with 32I and 32H of the Planning and Development Act 2000 (as amended). Roscommon County Council held a Pre Planning Meeting on the 27th February 2025 with the Applicant and Consultants. The Applicant requested a Design Flexibility Opinion from the Council at this time. As per the instructions from the Council, the Prospective Applicant is submitting the Request, with this supporting document on the 17th April 2025 with the intent for Roscommon County Council to hold a design flexibility meeting within 4 weeks of submission, and to provide a formal Opinion within the statutory timeframe. The Applicant proposes that the Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) will include information in respect of Technology Option 1, 2 and 3 design parameters and assess each option.

A decision will be made as to which technology option is selected at the pre-construction stage. The chosen option will be one of the three technology options outlined in the **Table 1-3**. Roscommon County Council as the Competent Authority will be consulted to confirm the option prior to construction works taking place.

2.2 Formal Request for Meeting and Design Envelope Option Opinion from Roscommon County Council

In accordance with Section 32H(1), of the Planning and Development Act 2000 as amended, and Article 15J of the Planning and Development Regulations 2001 as amended, Ballyfeeny Green Energy Limited formally requests to enter into a meeting with Roscommon County Council regarding (the proposed Ballyfeeny Green Energy Project at Ballyfeeny and Tully, County Roscommon

2.3 Information Required Pursuant to Section 32H

As set out within Section 32H(2) of the Planning and Development Act 2000 (as amended) a request for a meeting for the purposes of section 32I with the planning authority is to be accompanied by the appropriate fee (See Appendix 1) and include the following information as set out below:

a. The name and address of the prospective applicant

Ballyfeeny Green Energy Limited is the prospective applicant and is a subsidiary of Greensource Sustainable Developments Limited (Greensource Ltd.). Ballyfeeny Green Energy Limited has a registered address of Station Road, Adare, Limerick.

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b. a site location map sufficient to identify the land on which the proposed development would be situated

A site location map clearly identifying the land on which the proposed development would be situated is provided at Appendix 2.

c. a brief description of the nature and purpose of the proposed development and of its possible effects on the environment

The Applicant is seeking planning permission from the Local Authority, Roscommon County Council for the construction, operation and decommissioning of a six wind turbine development, construction of an Onsite Substation, Grid Connection and all associated works.

The Project, including the proposed wind farm (the area within which the Wind Turbine Generators (WTGs) will be installed), Onsite Substation and Grid Connection is located within the townlands of Tully, Ballyfeeny, Polymount, Bellanamullia, Scramoge, Ballyhubert, Toreena and Bunnageddy. The proposed wind farm site is located c.4.5km northeast of Strokestown and 15km northwest of Longford town, positioned at Irish grid reference c. E598813 N782007 ITM. The site encompasses approximately 43.37 hectares and is accessed off the R371 road.

The proposed Project would comprise of the following:

- The construction, operation and decommissioning of a wind farm, that comprises of one of three wind turbine technology options (Technology Option 1, Technology Option 2 or Technology Option 3). The technology options for the Project comprise of the following parameters:

<i>Turbine Parameter</i>	<i>Technology Option 1</i>	<i>Technology Option 2</i>	<i>Technology Option 3</i>
<i>Number of WTGs</i>	6	6	6
<i>Tip Height (m)</i>	160	156	159
<i>Rotor Diameter (m)</i>	136	133	138
<i>Hub Height (m)</i>	92	90	90

- Construction of Site Access Tracks, Turbine Hardstands, Turbine Foundations, associated drainage, and ancillary works;
- Installation of Wind Farm Internal Cabling from the wind turbines to the proposed Onsite Substation;
- Construction of an Onsite Substation;

- Construction, use and decommissioning of a temporary site compound for construction.
- Erection of a permanent Communications Relay Tower;
- Construction of new site entrances and upgrading of existing entrances to facilitate the delivery of turbine components and construction traffic;
- Grid Connection Route from the Onsite Substation to the electricity grid network;
- Turbine Delivery Route from the port of arrival to the project site;
- Community and biodiversity improvements associated with the Project;
- All associated site works, including site clearance, and ancillary development including site drainage, security gates, fencing, permanent and temporary signage, and biodiversity mitigation and enhancements.

A 10-year planning permission and 35-year operational life of the development and associated works is being sought from the date planning permission is granted.

The possible effects on the environment are identified and outlined in the EIAR Scoping Report provided in Appendix 5.

An EIAR and NIS will be prepared for the proposed Project which will assess the Technology Options for which design flexibility is being sought.

d. a draft layout plan of the proposed development

A draft layout plan of the proposed development is provided at Appendix 3.

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e. a description of –

(i) the details, or groups of details, of the proposed development that, owing to the circumstances set out in subparagraph (ii), are unlikely to be confirmed at the time of the proposed application, and

(ii) the circumstances relating to the proposed development, including such circumstances as the Minister may prescribe in relation to any class or description of development for the purposes of this subparagraph, that indicate that it is appropriate that the proposed application be made and decided, before the prospective applicant has confirmed the details referred to in subparagraph (i) including, in particular, whether the prospective applicant may be able to avail of technology available after making the proposed application that is more effective or more efficient than that available at the time of the application

As set out below, design flexibility is needed as it is not practicable to confirm final WTG details (tip height, rotor diameter and/or hub height) at the time of planning and the selection of the final technology will be based on future market availability and further discussions on energy supply through the course of the development phase. Design flexibility is not sought with respect to the Turbine Locations as shown in **Appendix 3**.

The need for design flexibility arises due to the extensive timeframes associated with the development of WTG and their associated works. WTG technology is continuously evolving with newer models coming into production and availability of specific models to the market at the time of procurement for installation that are unknown at the time of the preparation and submission of the Planning Application.

The entire process from planning submission, construction and grid availability etc., can take numerous years to complete. Wind turbine technology is continuously evolving and thus there is often uncertainty with regards to which technology option will be available when the time for construction commences.

Therefore, it is difficult at this stage to confirm WTG details at the time of planning and the final selection will be based on future market availability and further discussions on energy supply through the course of the development phase.

However, Planning permission is required to continue with the project development. Design Flexibility will allow the submission of the application, which due to the circumstances set out above includes details that cannot be confirmed at present, but which will be subject to full assessment at the time of application through the EIA process. As a result, all technology

options will be fully assessed and considered at the planning stage, allowing the most appropriate option to be confirmed at construction stage..

The circumstances are fully aligned with guidance from the Minister as set out within Circular PL 11/2023. Refer to accompanying cover letter from Tom Phillips + Associates, dated 17/04/2025.

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- f. an undertaking to provide with the proposed application, either—*
- (i) two or more options, in respect of each detail or group of details referred to in paragraph (e)(i), containing information on the basis of which the proposed application may be made and decided,*
 - (ii) parameters within which each detail referred to in paragraph (e)(i) will fall and on the basis of which the proposed application may be made and decided, or*
 - (iii) a combination of subparagraphs (i) and (ii)*

The Prospective Applicant wishes to provide three options for the preferred turbine parameters. Table 1-3 below outlines the preferred turbine parameters to be used in the application and EIAR, including three potential turbine dimension scenarios classified as Technology Option 1, 2 and 3 based on the Tip Height. These options will be included in all information submitted with the application and on the basis of which the proposed application may be decided.

Table 1-3: Range of Turbine Parameters to be assessed

<i>Turbine Parameter</i>	Technology Option 1	Technology Option 2	Technology Option 3
<i>Number of WTGs</i>	6	6	6
<i>Tip Height (m)</i>	160	156	159
<i>Rotor Diameter (m)</i>	136	133	138
<i>Hub Height (m)</i>	92	90	90

Although the technology and thus turbine dimensions have not yet been confirmed, the environmental impacts for each technology option will be assessed throughout the submitted EIAR, and where necessary each option will be fully assessed and modelled. The technology option parameters are displayed within the indicative Planning Drawing (Planning Drawing No.23604-500-P1), in accordance with the requirements of the PDR 2001 (as amended).

The technology option parameters are displayed within Appendix 4 Illustrative Drawing of the Proposed Design Flexibility Options.

g. such other information, drawings or representations as the prospective applicant may wish to provide or make available, and

such other information as may be prescribed.

All information has been provided as prescribed within Section 32H of the Planning and Development Act 2000 (as amended) and any relevant guidance.

Appendix 4 includes an indicative illustrative drawing of the three technology options for comparison.

Should the Local Authority wish additional information in relation to this request the Prospective Applicant can provide additional supporting information.

h. The appropriate fees

Under Appendix 1 of this statement a copy of the payment of the fees (as confirmed of €2,500 euros only) in relation to the request for a meeting and opinion from Roscommon County council in relation to this request.

2.4 References

- Department of the Environment, Heritage and Local Government (DEHLG) (2006) *Wind Energy Development Guidelines* (2006)
- Environmental Protection Agency (EPA) (2015) *Advice Notes for Preparing Environmental Effect Statements DRAFT September 2015*. Environmental Protection Agency, Ireland
- Environmental Protection Agency (EPA) (2017) *Guidelines on the information to be contained in Environmental Effect Assessment Reports*
- Irish Wind Energy Association (2012). *Best Practice Guidelines for the Irish Wind Energy Association*.
- Minister for Housing, Local Government and Heritage, (2023), Circular Letter PL 11/2023, “*New design flexibility provisions with regard to certain unconfirmed details as part of application for planning permission*”,
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended),
- The Heritage Act 1995 (as amended),
- The Wildlife Acts, 2000-2022.

Appendix 1 Evidence of Fee Payment

RECEIVED: 15/09/2025



RECEIVED: 15/09/2025

Transaction details

[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]
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Payee details

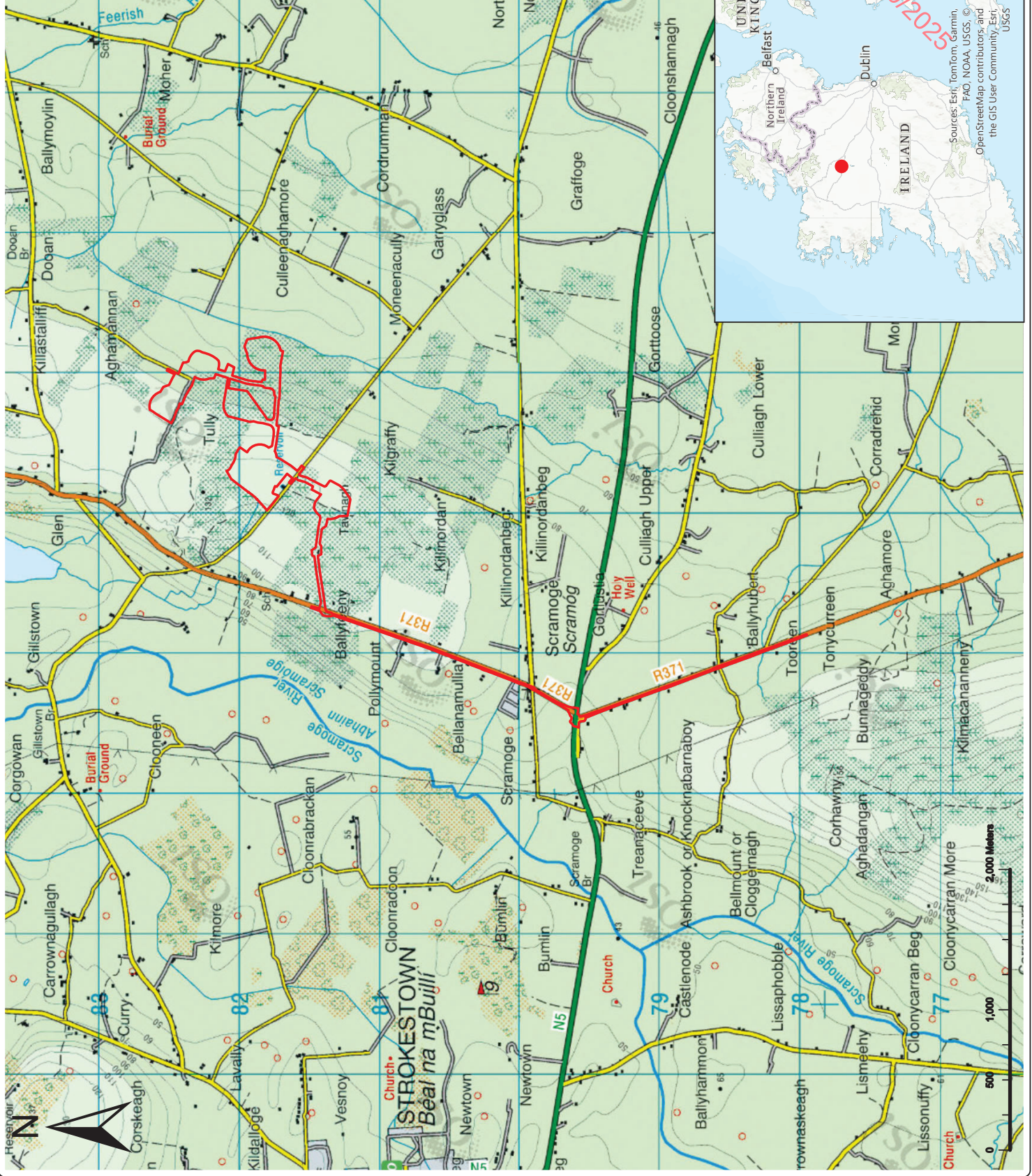
Payee name	Roscommon County Council
[REDACTED]	[REDACTED]
Payee address	Aras an Chontae, Roscommon , Ireland
[REDACTED]	[REDACTED]
	[REDACTED]

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Appendix 2 Site Location Map

Legend

 Redline Boundary



Note:
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Client Ballyfeeny Green Energy Ltd

Ballyfeeny Green Energy Ltd
Station Road, Adare, Limerick,
Ireland

Rowan Engineering Consultants
Ltd

Unit 14, Scurlockstown Business
Park, Trim Co. Meath
www.rec.ie

Date 07/04/2025	Revision 1	Job No GRE0001-5
Scale 1:25,000@A3	Report EIA/R	Figure 1
Author EOB	Checked JM	Approved

Appendix 3 Site Layout (Indicative)

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Title: Site Layout Map

Legend

- Redline Boundary
- Turbine Location



Client Ballyfeeny Green Energy Ltd

Ballyfeeny Green Energy Ltd
Station Road, Adare, Limerick,
Ireland



Rowan Engineering Consultants
Ltd

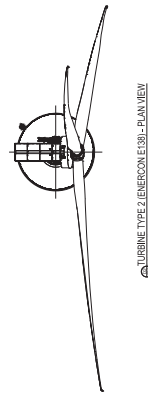
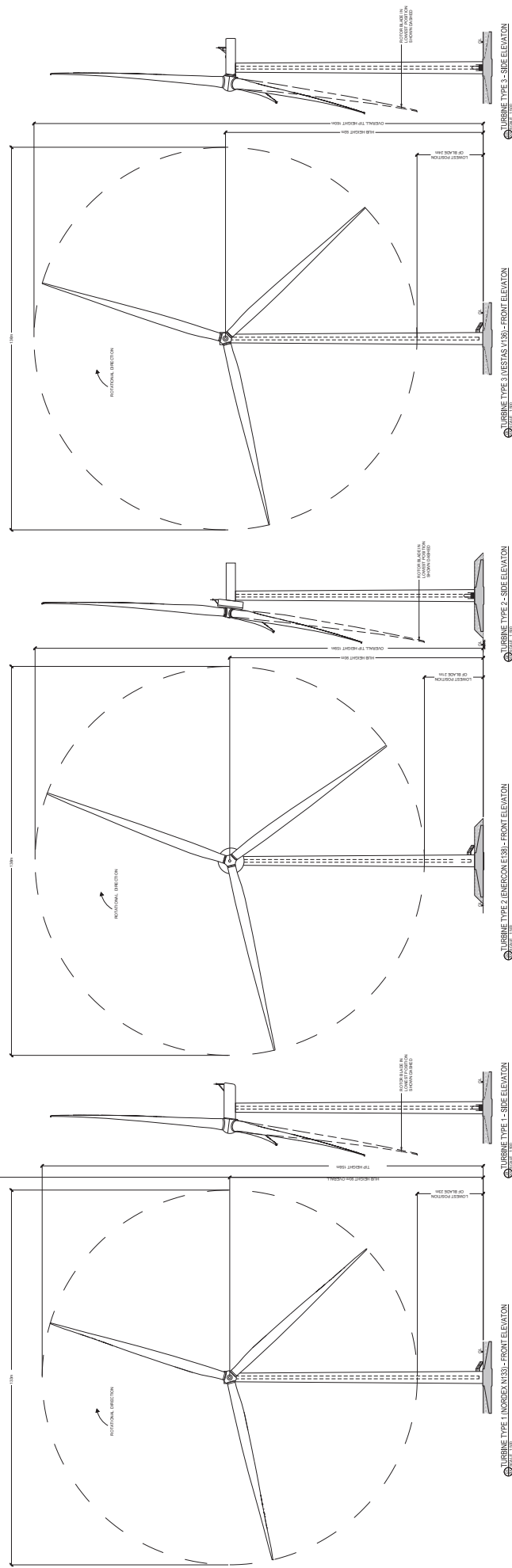
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Date 07/04/2025	Revision 1	Job No GRE0001-5
Scale 1:18,000@A3	Report EIA/	Figure 2
Author EOB	Checked JM	Approved

Appendix 4 Illustrative Drawing of the Proposed Design Flexibility Options

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SCALE TO BE AGREED WITH LOCAL AUTHORITY

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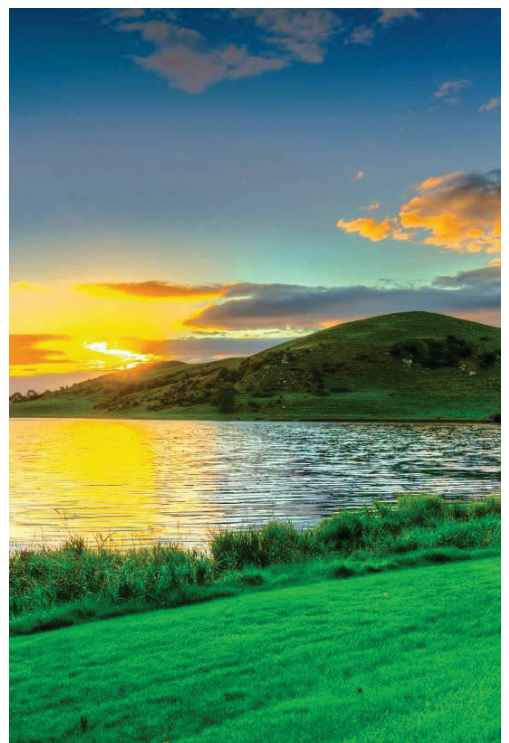
Appendix 5 Project EIAR Scoping Report

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Rowan

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Ballyfeeny Green Energy Project, Ballyfeeny, Co. Roscommon



ElAR Scoping Report

Ballyfeeny Green Energy Limited

August 2024

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Report Sign Off Page

CLIENT REF:	GRE0005-3		
DEVELOPMENT ADDRESS	BALLYFEENY, CO. ROSCOMMON		
REVISION	DATE	ORIGINATOR	REVIEWER
R00	30/08/2024	JB & JM	EG
For Issue			

RECEIVED: 15/09/2025

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1. Introduction

1.1 Introduction

This scoping document has been prepared by Rowan Engineering Consultants (Rowan) on behalf of Ballyfeeny Green Energy Limited (the Developer) in respect for planning permission for the proposed construction and operation of a wind farm at Ballyfeeny, County Roscommon.

The following report has been prepared in accordance with the relevant Planning the Environmental Impact Assessment legislation and national guidelines for the purpose of providing relevant information to consultees and stakeholders at the outset of the project so that key environmental issues/concerns can be identified early and be incorporated into the Environmental Impact Assessment Report (EIAR) so that the development can be designed to avoid or minimise any potential significant environmental effects, and that any likely significant effects of the development can be assessed appropriately.

1.2 Purpose of this EIA Scoping Report

The purpose of this document is to inform you of the proposed approach to the development and provide an understanding of the nature of the known environmental constraints at this stage. This shall then allow you to offer an opinion in relation to the development and the approach outlined to undertake the design and Environmental Impact Assessment (EIA) of the development.

Scoping is an important stage that takes place early in the EIA process. It provides an opportunity for both developers and the Competent Authority to determine those key environmental aspects that are likely to be important to the development proposal's decision-making and seeks to eliminate those that are of less concern.

This EIA Scoping Report outlines the scope of work associated with the proposed project, together with methods to be applied in the development of an EIAR.

The Scoping Report is presented with due regard to the European Commission's, "Guidance on EIA Scoping" (EU 2001) and the latest national EPA (2022) Guidelines on the information to be contained in EIARs.

This report outlines an overview description of existing and future operations proposed, as well as methods to be applied in the preparation of an EIAR.

The main objectives of this report are to:

- Identify any potential significant environmental effects which may arise during the construction, operation and decommissioning of the proposed project, which should therefore be addressed in depth as part of the EIAR;
- Outline proposed assessment methodologies for completing the EIAR;
- Outline the contents of the EIAR; and
- Form a basis of common reference regarding the scope and methodology for the EIAR.

1.3 EIA Scoping Report Structure

The EIA Scoping Report structure is as follows:

Section 1: Provides the purpose and objective of this EIA Scoping Report

Section 2: Provides a description of the proposed project which is under consideration for this EIA Scoping Report.

Section 3: Provides an overview of the EIA process and the approach to the development of the EIAR.

Sections 4 – 16: These sections identify possible effects on the environment and outline the proposed assessment methodology that will be adopted in assessing the effects. The environmental aspects that will be considered in the EIAR are outlined below:

- **Section 4:** Population and Human Health (including Shadow flicker);
- **Section 5:** Biodiversity (including ornithology, aquatics & mammals);
- **Section 6:** Lands, Soils and Geology;
- **Section 7:** Water, Hydrology & Hydrogeology;
- **Section 8:** Air Quality and Climate;
- **Section 9:** Noise and Vibration;
- **Section 10:** Landscape and Visual;
- **Section 11:** Road, Traffic and Transport;
- **Section 12:** Archaeology, Cultural Heritage and Architectural Heritage.
- **Section 13:** Material Assets (including telecommunications & waste management)
- **Section 14:** Cumulative Impacts and Interaction of Foregoing
- **Sections 15 – 16:** The final sections of this report outline the proposed consultation and conclusions.

2. Proposed Project Description

2.1 Overview of the Proposed Project

The proposed project at Ballyfeeny will include the following:

- The construction, operation and decommissioning of a wind farm of up to 6 wind turbines with a height of between 156m and 160m with a maximum export capacity between 25 megawatts (MW) and 29 megawatts (MW).
- Construction of site access tracks, hardstanding area, turbine foundations, associated drainage, and ancillary works.
- Installation of underground power and communication cables from the wind turbines to a substation building on the site.
- Construction of an onsite substation and control building.
- Construction, use and decommissioning of a temporary site compound for construction.
- Erection of a permanent meteorological mast.
- Erection of a permanent communications relay tower.
- Construction of new site entrances and upgrading of existing entrances to facilitate the delivery of turbine components and construction traffic.
- Grid Connection Route (GCR) from the onsite substation and control building to the electricity grid network.
- Turbine Delivery Route from the port of arrival to the project site.
- Community and biodiversity improvements associated with the development.
- All associated site works, including site clearance, and ancillary development including site drainage, security gates, fencing, permanent and temporary signage, and biodiversity mitigation and enhancements.

2.2 Site location

The proposed project site is located at Ballyfeeny, Co. Roscommon, approximately 4.5km northeast of Strokestown and 15km northwest of Longford town. The proposed wind farm site is located at c. E598813 N782007 ITM.

The site is undulating with ground elevation ranging from an elevation of approx. 70m Above Ordnance Datum (m AOD) at its lowest to approximately 120m AOD at its highest elevation.

The site location is displayed overleaf in **Figure 2-1** showing its position in relation to nearby towns, together with proposed grid connection route options.

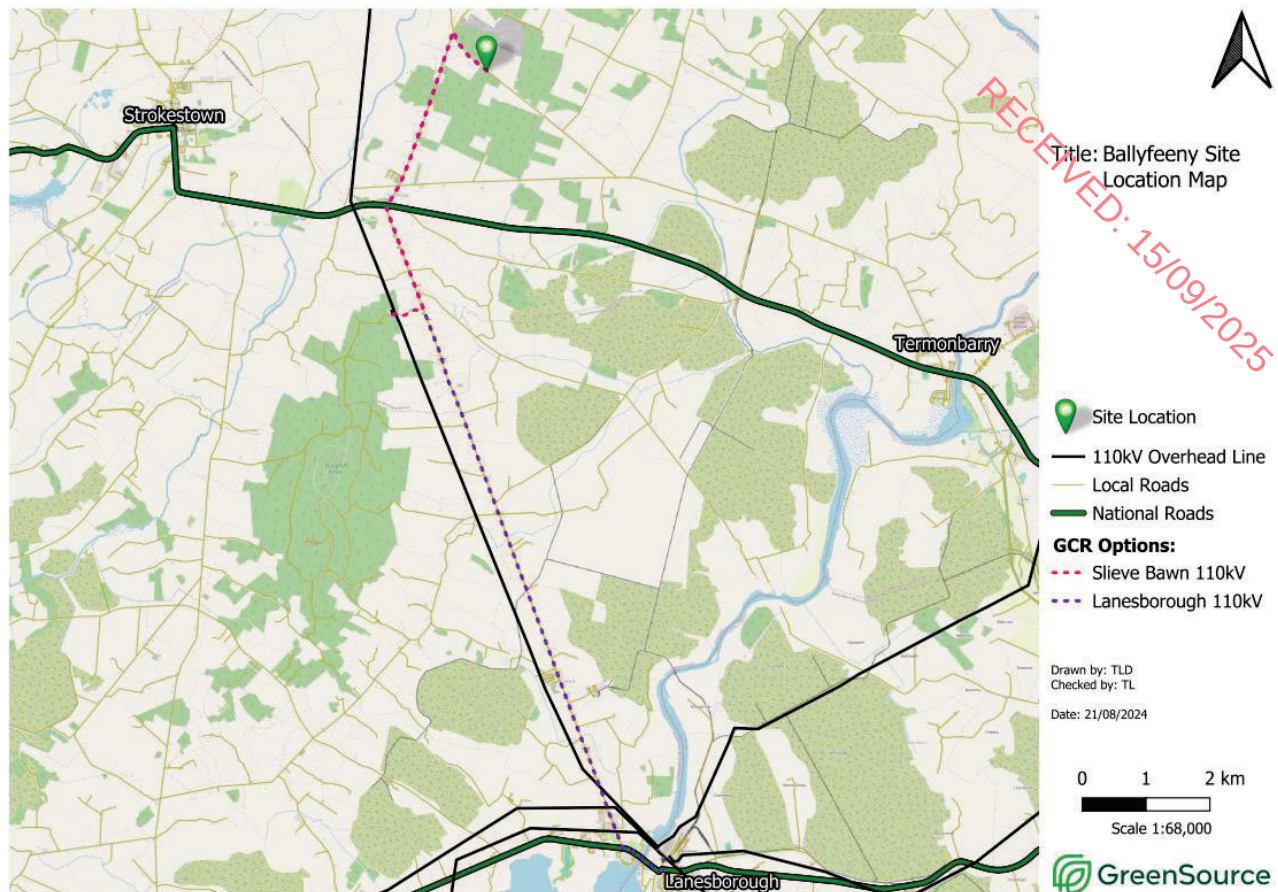


Figure 2-1: Site Location

The proposed project is located within an area that has been identified as 'Most Favourited' by the Roscommon Renewable Energy Strategy 2022-2028. It is proposed to complete a full review of the proposed project against local, national and European planning policy and renewable energy strategies as part of the EIAR.



Figure 2-2: Project Setting within Roscommon Wind Energy Strategy and Areas of Wind Energy Potential

2.3 Existing Land Use

The proposed wind farm site is composed primarily of large areas of forestry, with sections of agricultural grassland and a nearby active quarry. The wind farm site has two watercourses traversing the site and access via existing local road network. The agricultural grassland habitats and forestry. The grasslands consist of large open areas of agricultural pasture, used for grazing by sheep and cattle. Scattered patches of wet grassland exist within and around the wind farm site. The forestry is mainly commercial forestry of conifer plantation with some recently felled areas.

2.4 Detailed Project Description

It is envisaged that the development works associated with the proposed project would include the following:

- The construction, operation and decommissioning of six wind turbines with a hub height of between 90m and 92m, and a rotor diameter of between 133m and 138m, an overall tip height between 156m and 160m, and a Maximum Export Capacity (MEC) between 25MW and 29MW.

- Construction of site access tracks, crane hardstanding area, turbine foundations and ancillary works.
- Construction of associated surface water drainage and management features.
- Installation of underground power and communication cabling, from the proposed wind turbine to the proposed substation building on the site.
- Construction of an onsite 38 kilovolt (kV) substation and control building.
- Construction, use and decommissioning of a temporary site compound for use during construction.
- Erection of a permanent meteorological mast to provide meteorological data signals for the development.
- Erection of a permanent communications relay tower to mitigate any potential adverse communication effects.
- Construction of new site entrances and upgrading of existing entrances to facilitate the delivery of turbine components and construction traffic.
- Grid Connection Route (GCR) to connect the onsite 38kV substation and control building to the National Grid via an underground cable. The preferred connection point to be confirmed with ESBN/Eirgrid.
- Turbine Delivery Route (TDR) from the port of arrival to the project site.
- Community and biodiversity improvements associated with the proposed project.
- All associated site works, including site clearance, and ancillary development including site drainage, security gates, fencing, permanent and temporary signage, and biodiversity mitigation and enhancements.

An indicative site layout is shown in **Figure 2-3**, this is subject to change based on any feedback during the scoping consultation, community engagement and any additional assessments that are completed as part of the EIAR.



Figure 2-3: Indicative Site Layout

The planning application will be submitted to Roscommon County Council (RCC) and will be accompanied by an Environmental Impact Assessment Report (EIAR), a Stage 1 Appropriate Assessment (AA) Screening Report and associated documents.

It is currently proposed that the planning application for the proposed project will be submitted in Q4 of 2024.

2.5 Consideration of Alternatives

As set out in the EIA Directive, the EIAR is required to provide a description of the reasonable alternatives studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

2.5.1 Alternate Location

As part of the initial development phase the project has considered a number of sites nationally. A shortlist of suitable development sites have been determined by the Developer based on a series of site feasibility studies evaluating the environmental and planning considerations of the site as well as the selection of sites based on their suitability for power generation, potential for development, suitable land bank etc.

Based on the suitability of the site, this site has been selected as suitable. A site selection and evaluation process has been conducted prior to the EIAR Scoping and Screening, to determine the site suitability.

As part of an iterative design strategy within the EIA process, the approach will consider alternative layouts, orientation and footprint configuration options within the area as they have been considered and determined to date and will include any feedback from the Scoping and consultation processes. This process is in refinement, at the moment and has been informed throughout the process by the ecological, environmental, physical and socio-economic conditions and data from the proposed wind farm site to optimise the siting in terms of the best practicable environmental and engineering options. The preferred and alternate options and the decision making process will be outlined in the EIAR.

2.5.2 Alternate Design

In the context of alternative design (incorporating scale and size), this section of the EIAR will set out the processes and assessments that were followed to arrive at the proposed turbine layout, turbine envelope and infrastructure layout. This section will be informed by the site surveys and ground investigations, proximity of environmental aspects (e.g. ecology, population, material assets) and the optimisation of the selected design in consideration of these aspects and meeting the project objective for provision of renewable energy.

2.5.3 Alternate Technology, Procedure or Process

The proposed wind farm development at Ballyfeeny, will support European and National policy in decarbonising electricity generation. The route to achieve these targets is set out in the government's Climate Action Plan 2024 which seeks to meet 80% of electricity demand by renewables by 2030. That target will be achieved by increasing the installed capacity of onshore wind to 6 GW by 2025, reaching 9 GW by 2030. as well as the local objectives and policies of RCC in supporting the national policy and objectives. Given these goals and objectives the 'Do Nothing' alternative is not considered in this EIAR, as all impact assessments are made against the existing situation and baseline data.

There are a number of different renewable energy technologies available on the market, however not all will be viable at the proposed development location. The EIAR will consider technology variables or solutions for wind generation and consideration of any innovations or mitigation in process (construction operation or maintenance) which can be selected to reduce potential environmental impacts of the proposed project.

3. Approach to the Environmental Impact Assessment

3.1 Introduction to the EIA Process

EIA involves the process for anticipating the effects on the environment caused by a proposed project or development at a particular site. Where effects are unacceptable, design or other measures can be taken to avoid or reduce these effects to acceptable levels. The initial EIA Directive has been in place since 1985 (85/337/EEC). This Directive, together with three amendments, was amalgamated into Directive 2011/92/EU in December 2011.

Proposed changes to the Directive were adopted by the Council of the European Union in May 2014 (2014/52/EU) with a 3-year period to transpose the changes. These changes formed the first revision of the Directive 2011/92/EU. The EU (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) transpose the requirements of Directive 2014/52/EU into planning law in Ireland and came into effect from the 1st September 2018.

The EIA Directive requires certain developments are assessed for likely significant environmental effects prior to the granting of a planning permission. When submitting a planning application for such a development, the applicant must submit an EIAR.

The EIA process can generally be summarised as follows:

- **Screening** – determining if an EIAR required;
- **Scoping** – determining issues which should be considered within an EIAR
- **Baseline Data Collection** – Establishing a robust baseline of the existing environment of the proposed project. This stage includes a review of existing available information and undertaking any additional surveys or studies identified during the scoping phase and consultation;
- **Impact Assessment** – Assessment of the environmental impacts and establishing their significance;
- **Mitigation** – Formulation of mitigation measures to ameliorate the potential impacts of the proposed project which cannot be avoided through site design;
- **Consultation** – With Statutory Stakeholders, the public, and other bodies, as required;
- **Decision** – The competent authority decides, taking into consideration the results of consultations, of the proposed project can be authorised;
- **Announcement** – The public is informed of the decision; and
- **Monitoring** – Monitoring of the effectiveness of implemented mitigation measures.

3.2 EIA Screening Assessment

Screening is the initial stage of the EIA process, whereby it is determined whether or not a mandatory EIA is required. The relevant class of development that mandates an EIA are set out in Schedule 5 of the Planning and Development Regulations 2000-2023, as amended. In this case, the relevant class of development relates to paragraph 3(i) of Part 2, Schedule 5, as follows:

“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”

The proposed project exceeds 5 turbines together with 5 megawatts in scale, and therefore triggers an EIAR. As a result, an EIAR will be prepared in respect of paragraph 3(i) of Part 2 of Schedule 5 (i.e., more than 5 turbines and/or a total output exceeding 5 megawatts).

Ultimately, every element of the overall project will be considered within the EIAR, including the wind turbine and associated infrastructure (site access etc.).

It is proposed to arrange a pre-planning meeting with RCC to discuss the proposed project and the contents of this EIAR Scoping Report and to disseminate to relevant statutory consultees. Consultations with RCC will ensure all areas of potential concerns are assessed and that the proposed project aligns with Roscommon County Development Plan.

3.3 Environmental Impact Assessment Scoping

Following screening determination, the ‘Scoping’ phase of the EIA process is to determine the content and extent of environmental aspects which should be addressed and considered within the EIAR. The assessment determines the potential for the proposed project or its associated activities to have a potential interaction with the environmental aspects. Where interactions occur, the Scoping also outlines the nature of the data required and the method to assess the interaction in the EIAR. Scoping also involves consideration of the nature and significance of potential interactions likely to arise from the proposed project. The Scoping will allow the Competent Authority and environmental stakeholders with the opportunity to provide information, data or additional guidance to facilitate the iteration of the design and EIA process, to determine what the main likely significant effects might be and what sub-topics the EIAR should focus upon.

A full list of the proposed consultees, both statutory and government bodies, non-governmental organisations and any local bodies are included in **Annex 1** to this Scoping Report. The consultee list will be discussed with Roscommon County Council during the pre-application meeting to ensure that all relevant bodies have been included.

3.4 EIAR Methodology

This assessment of environmental aspects interactions will be evaluated for the potential for these interactions to result in significant effects. This process will be conducted giving consideration to best national and international practice. The Environmental Protection Agency (EPA) has prepared the following guidance which will be considered in the development of the EIAR for the proposed project:

- *Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)* (EPA May 2022)
- *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, August 2017);
- *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, September 2015).
- *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements* (EPA, 2003); and
- *Guidelines on the Information to be contained in Environmental Impact Statements* (EPA, 2002);

In addition to these overarching guidance documents for an EIAR, the assessment of each environmental aspect addressed in sections 4 – 15 will also be undertaken with specific consideration to aspect specific guidance and best practice.

The EIAR will be prepared in compliance with the *Wind Energy Development Guidelines for Planning Authorities* (2006)". Due regard will also be given to the *Draft Revised Wind Energy Development Guidelines* (December 2019) and any new Wind Energy Development Guidelines what may be issued prior to the submission of the planning application for the proposed project.

The EIAR will also demonstrate the proposed projects compliance with the relevant plans and policies, including the National and County Climate Action Plans and National Renewable Energy objectives, as well as the policies and strategic aims of the *Roscommon County Development Plan 2022-2028* and its associated *Renewable Energy Strategy* (Roscommon County Council, April 2022).

Accordingly, the EIAR will contain the following:

- A description of the proposed project comprising information on the sites, design, area and other relevant features of the development;
- A description of the potential impacts on the environment and surrounding area of the proposed development, (primarily residual impacts once mitigation has been adopted);
- A description of the features, if any, of the proposed project and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset any likely adverse significant effects on the environment by the development;
- Reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed project on the environment.
- Formulation of mitigation measures to reduce the potential impacts of the proposed development which cannot be avoided solely through site design.

- A assessment of the residual effects of the proposed development after mitigation measures have been implemented,

3.4.1 Baseline Data Collection

The existing environmental baseline for the proposed project and its surroundings will be established for each environmental aspect under consideration. This has been achieved through a desktop review of existing data and literature, and where determined additional information and baseline is required, commissioned site surveys for various aspects including, but not limited to;

- **Section 4:** Population and Human Health (including Shadow flicker);
- **Section 5:** Biodiversity (including ornithology, aquatics & mammals);
- **Section 6:** Lands, Soils and Geology;
- **Section 7:** Water, Hydrology & Hydrogeology;
- **Section 8:** Air Quality and Climate;
- **Section 9:** Noise and Vibration;
- **Section 10:** Landscape and Visual;
- **Section 11:** Road, Traffic and Transport;
- **Section 12:** Archaeology, Cultural Heritage and Architectural Heritage.
- **Section 13:** Material Assets (including telecommunications & waste management)

For the baseline descriptions, the nature, character, significance and sensitivity of environmental aspects will be evaluated and described in the corresponding chapters. (as stipulated in the EPA (2022) Guidelines on the information to be contained in EIARs.

3.4.2 Evaluation of Potential Interactions and Assessment of Potential Effects

The assessment will evaluate the construction, operational and decommissioning phases of the proposed project and the significance of interactions with the environmental aspects will be outlined.

For each interaction, the assessment will evaluate based on describing

- the significance of potential effects,
- the potential extent and context of potential effects,
- the probability of effect occurring,
- the duration and frequency of effects and
- types of potential effects

For each interaction the activity and potential impact during the construction phase, operational phase, any decommissioning phase and an assessment of accidental or unplanned event risk. The assessment

will be undertaken using the terminology and methodology as specified in the EPA (2022) Guidelines on the information to be contained in EIARs.

A standardised approach based around EPA (2022) terminology for the determination of potential effects, their significance and mitigation will be used. The following sections provide an overview of the process of impact assessment that will be used for the assessment. Examples of the determination of study area or potential footprint of activities are provided in **Figure 3-1** and **Figure 3-2** respectively.

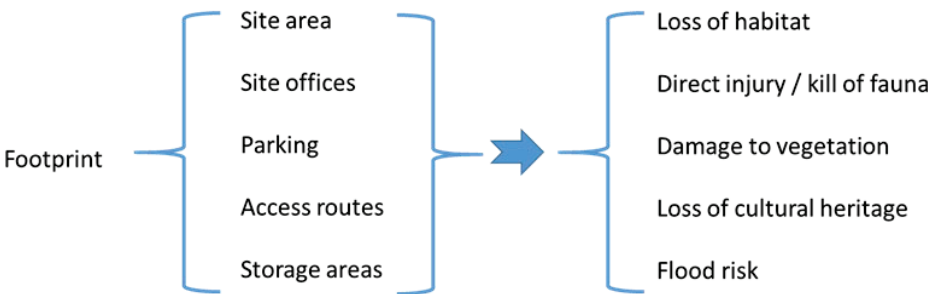


Figure 3-1 Examples of interactions with environmental aspects and their potential footprint

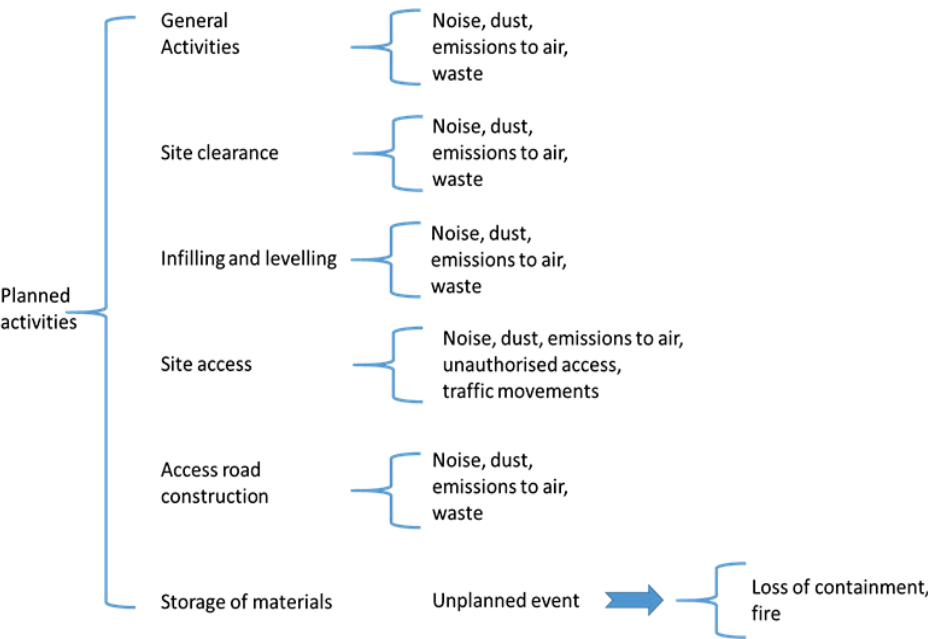


Figure 3-2 Examples activities and their interactions

The approach for impact identification and assessment of effects relating to air, land and water was based on the Source - Pathway - Receptor - Consequence Model (SPRC). Such an approach is commonly used in contamination studies but is highly applicable for many of the elements considered in an EIA process.

The model is shown diagrammatically in **Figure 3-3**

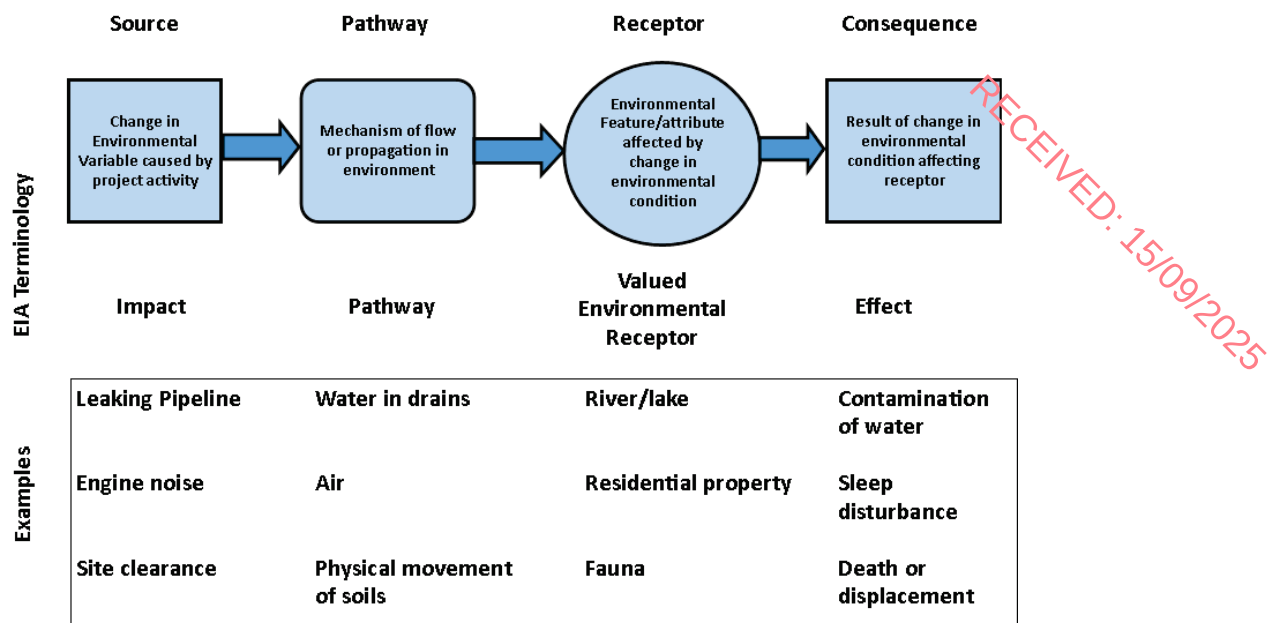


Figure 3-3 Source - Pathway - Receptor - Consequence Model as applied to EIA (World Bank Guidelines, 2021)

The Source - Pathway - Receptor - Consequence Model (SPRC) model shows that to have an effect on a receptor you need all elements of the chain to be present. Therefore, an effect can only occur if there is a source (of change), a receptor upon which that change acts and a pathway between the source and receptor.

The study area will be defined separately for each topic assessed in the EIAR to reflect the likely extent of potential effects.

3.4.3 Mitigation Measures

The EIAR outlines potential impacts regarding each environmental factors addressed, where there is potential risk for a likely significant effect to occur, the project will propose mitigation measures to minimise the risk of occurrence or the potential severity of the effect to an acceptable level.

The hierarchy of mitigation will be used in developing appropriate mitigation measures and the first stage of mitigation is to avoid likely significant effects. Based on the SPRC model, avoidance of impacts can be achieved by removing the source of the impact, removal or interruption of the pathway or removal of the receptor.

Where potential impacts cannot be completely avoided, mitigation measures are provided which will reduce the significance of the effects to a level as low as possible. Utilising the EIA through design process means that where possible potential interactions or risks can be designed out at an early stage. Some effects are unavoidable and cannot be effectively mitigated, for example, loss of sea turtle nesting areas (please note that this is a non-project specific example).

In some cases, even where the potential impact has been assessed as not significant without mitigation measures or management plans may still be stated to ensure effects are minimised as far as reasonably practicable.

All measures proposed as mitigation for the proposed development will be reported within the relevant chapter/s of the EIAR.

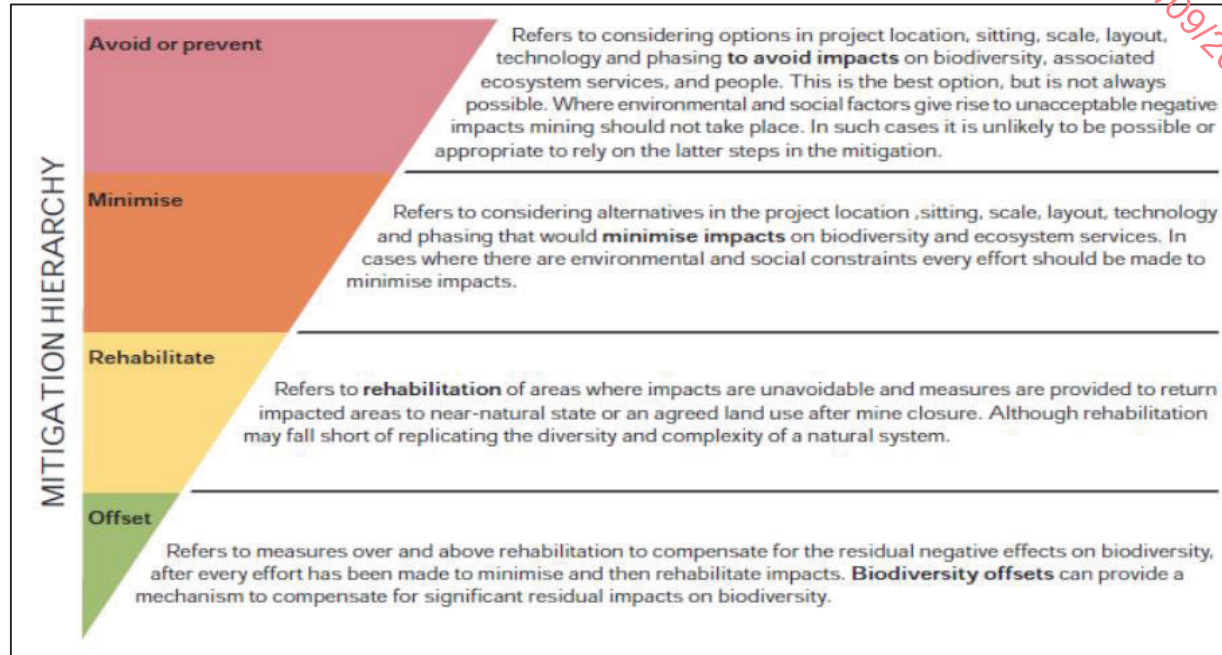


Figure 3-4 Example of the Mitigation Hierarchy (Houdet et al 2014)

For all environmental aspects outlined within the EIAR, the significance of residual effects, i.e. those impacts predicted once mitigation is taken account of, will be assessed.

An assessment will be made of the likely significant cumulative effects of the development in combination with other developments and wind farms including:

- Schemes which have been submitted to the relevant authorities but not yet determined.
- Schemes which are consented.
- Schemes which are under construction or are operational.

3.5 EIAR Structure and Content

The EIAR will be submitted to the Planning Authority (RCC) in support of the planning application for the proposed project. The EIAR will consist of 3 Volumes, as follows;

- Vol 1 – Non-Technical Summary
- Vol 2 – Main Report
- Vol 3 – Appendices

The following key sections will form the content of the EIAR document:

- Introduction

- The Environmental Impact Assessment Process
- Proposed Project Description
- Consideration of Alternatives
- Planning and Policy
- The following environmental topics will be addressed:
- **Section 4:** Population and Human Health (including Shadow flicker);
- **Section 5:** Biodiversity (including ornithology, aquatics & mammals);
- **Section 6:** Lands, Soils and Geology;
- **Section 7:** Water, Hydrology & Hydrogeology;
- **Section 8:** Air Quality and Climate;
- **Section 9:** Noise and Vibration;
- **Section 10:** Landscape and Visual;
- **Section 11:** Road, Traffic and Transport;
- **Section 12:** Archaeology, Cultural Heritage and Architectural Heritage.
- **Section 13:** Material Assets (including telecommunications & waste management)
- **Section 14:** Cumulative Impacts and Interaction of Foregoing

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For each of the environmental aspects assessed, the EIAR Chapter will be structured broadly as follows;

- Introduction to the topic area;
- Methodology;
- Baseline conditions;
- Prediction and Assessment of effects
 - Construction Phase
 - Operational Phase
 - Decommissioning Phase
 - Unplanned Events;
- Mitigation Measures;
- Assessment of Residual Effects;
- Difficulties Encountered in Compiling Information; and
- Assessment of Cumulative effects and Impact Interrelations.

3.6 Appropriate Assessment

European Sites (Natura 2000), i.e. Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are classified under the European Union Birds Directive (2009/147EC) and Habitats Directive (92/43/EEC). The procedures to be followed when considering developments affecting a Natura 2000 site are specified in Articles 6(3) and 6(4) of the Habitats Directive.

An ecological consultant is appointed and baseline surveys of the site are underway. Based on the initial findings. A Stage 1 Appropriate Assessment (AA) Screening Report is being undertaken for a development.

As per the Department of Environment, Heritage and Local Government (DoEHLG) (2010) *Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities* states that screening can result in one of three possible conclusions or outcomes:

- AA is not required – the plan or project is directly connected to the management of the site;
- No potential for likely significant effects/AA is not required – screening concludes that there is no potential for likely significant effects; or
- Significant effects are certain, likely or uncertain – the plan or project must proceed to Stage 2 Natura Impact Statement (NIS).

In the event the Screening report determines the significant effects are certain, likely or uncertain a Stage 2 NIS will be prepared for submission with the Planning application.

3.7 Flood Risk Assessment

An initial assessment of the site by Rowan and the hydrology consultant has determined a low risk of potential flooding or flooding effects at the site. As such a Stage 1 Flood Risk Assessment (FRA) is proposed to be carried out in accordance with the Office of Public Works Guidelines for Planning Authorities (GPA) 20: The Planning System and Flood Risk Management.

3.8 EIAR Preparation and delivery

The developer has undertaken to deliver an EIAR or the highest standard with delivery of appropriate and relevant associated studies and surveys. As such the Developer has appointed a team of experienced and qualified consultants to deliver the EIAR and AA.

- The Developer – Ballyfeeny Green Energy Limited is a subsidiary of Greensource is a wholly owned Irish renewable energy company based in Adare, County Limerick. The company has grown and diversified over the last twenty years, having significant expertise in the planning, construction and operation of renewable energy projects in Ireland and abroad. Since inception, the company has played a key role in the development of over 150MW of renewable energy projects in Ireland, playing a significant role in further decarbonising the electricity market in this country.
- Environmental Consultant - Rowan Engineering Consultants – Irish environmental consultancy with significant experience in EIAR and AA delivery for small, medium and national scale renewable

projects and EIA coordination. Rowan are coordinating the specialists in deliver of the EIAR and AA. EIAR Production and expertise in relation to the environmental evaluation including Planning, Reasonable Alternatives, Impact Assessment, Mitigation and Cumulative Impact Assessment and Environmental Management Plans. Specialising in renewable EIA and sustainability disciplines with over 17 active renewable projects in Ireland.

- Design and Drawings - Mable Consultant Engineers –Consulting Engineering firm well established in providing environmental design and planning support and drawings. Mable are responsible for the concept engineering assessment including route and transport requirements.
- Biodiversity - Inis Environmental Consultants – Inis Ecology specialised ecological consultancy supporting wind, solar, hydroelectric and electrical transmission ecological assessments across Ireland at small medium and national level projects. Inis has conducted seasonal assessment for ornithological surveys, habitat assessment, bat assessment, mammal assessment, and invasive species assessment for the site including ecological sampling of nearby watercourses. Inis will also provide habitat and invasive species assessment for the proposed turbine delivery and grid connection routes.
- Noise and vibration – Enfonc Ltd – Enfonc is a specialised noise and vibration consultancy, providing survey services, monitoring, and assessment and modelling for construction operational and decommissioning activities.
- Hydrology and flood risk - Hydrec Consultancy – Hydrec is a hydrology and environmental consultancy specialising in hydrology, flood risk assessment, survey, monitoring, modelling, hydrogrolgy and water quality and aquatic ecology.
- Geotechnical - Whiteford Geoservices Ltd are a specialist ground investigation contractor and geotechnical consultant, providing specialist geotechnical, geophysical and environmental services including boreholes, trial pit analysis SHPD dynamic probing, site suitability and shear and bearing testing etc. They are a highly respected geotechnical company with over 36 years' experience.
- Landscape and Visual – Macro Works Ltd - provide a full suite of Landscape & Visual Impact Assessment (LVIA) related tools and skills for a broad spectrum of energy, infrastructure and commercial developments. Macro Works' clients emanate from both the public and private sectors, in Ireland and abroad. Macro Works' expertise covers the stages of renewable project development, from initial feasibility studies through to the completion of the planning process and are at the forefront of LVIA services in Ireland for the past 20 years.
- Archaeological – Icon Archaeology - employs a dedicated team of highly experienced archaeological professionals with decades of combined experience in all archaeological disciplines. Icon has worked extensively in both the public and private sectors, and has extensive experience not only in the Midlands, but also in renewable development projects providing Archaeological Impact Assessments, Excavations, Assessments and Test Excavations.

- Aviation and Telecommunications– AI Bridges, An Irish company with over 20 years experience providing comprehensive solutions and have extensive experience and knowledge in design, project implementation and support of telecommunications solutions. Providing project Telecoms \ TV \ Aviation Impact Studies as well as Telecoms & TVI Software Modelling Telecoms survey & due diligence studies, EMI, TV & aviation interference impact studies. AI Bridges provide analysis and modelling through Telecoms Software Prediction & Analysis Interference prediction analysis Radio Analysis & Design Radio mitigation studies. AI have designed and commissioned telecommunications and broadband projects throughout Ireland and abroad and have worked successfully with leading vendors to bring telecommunications grade equipment and services to the utilities and renewable industries.

4. Population and Human Health

4.1 Methodology

Rowan and the Developer will evaluate the local population and socio-economic factors based on desktop study, demographics, and remote sensing as well as site visits and land registry information. Human health impacts will be assessed based on environmental receptors and impact assessment.

4.1.1 Study Area

The study area encompasses all the land within the area defined in the plan submitted for planning consent, i.e., the proposed application site. In addition, any population receptors (residences etc.) within the study of the proposed project will also be assessed.

All properties in close proximity to the wind farm site (estimated using the amenity set back guidance from the 2006 Wind Energy Development Guidelines) will be mapped as potential sensitive receptors. Sensitive receptors will include residential dwellings, commercial properties, derelict buildings, agricultural buildings and pre-planning infrastructure (including houses submitted for planning permission and any property sales). All sensitive receptors will then be reviewed by ground-truthing and further desktop assessment (in the case of planning applications) to identify potential sensitive receptors in the vicinity of the development.

4.2 Potential Interactions

4.2.1 Potential Construction and Operational Phase Interactions

The primary construction phase impact is associated with potential nuisance and disturbance caused by construction activities.

There will be a small increase in the daily number of persons working in the area, including construction staff employed at the facility. This impact would be considered both short-term, neutral and imperceptible on population growth from the construction phase.

Some benefits to the local economy would be expected in terms of the provision of direct employment and the increased spend by construction staff, using local businesses for items such as fuel and food. This impact would be considered short-term for the duration of the works associated with the proposed project and potentially positive. The chapter will be linked to assessment in the Material Assets on surrounding business, opportunities and potential impacts.

However, given the scale of the proposed project and the number of associated construction staff, the interaction, whilst positive may not be considered significant.

Operational effects could potentially be associated with landscape and visual impacts with regard to the additional 6 wind turbines present in the area. Additionally, shadow flicker can be associated with the operation of wind turbines (see Section 4.4). These factors will be outlined in the EIAR with impacts deemed as significant or not significant, together with numerous mitigation measures proposed in order to circumvent and lessen any potential impacts.

The operational phase will provide opportunity for mechanical and electrical contractors and craftspeople to become involved with the operation and maintenance of the wind turbines over their life span, which would create a long-term positive impact.

There are no amenity areas, scenic routes or tourist attractions identified within or bounding the proposed project and therefore no Potential Interactions associated with the operational phase of the development have been identified at the scoping stage of the proposed project.

4.3 EIAR Scope

The assessment will involve a desk-based analysis of publicly available data, together with a site visit and a review of relevant policies and plans and national government databases. Such assessments should provide comprehension on the following:

- Population;
- Economic Activity;
- Employment;
- Land Use and Development;
- Commuting Patterns; and
- Tourism, Recreation, and Access.

The significance of effects on sensitive receptors including primary public services and residential buildings located in proximity to the proposed project will be assessed. A mapping exercise will be conducted and will verify the buildings business and residences adjacent to the proposed project locations.

Human health will be considered as required by Directive 2015/52/EU. This will likely be focused on identifying the environmental factors that have the potential to impact human health and the assessment of those impacts elsewhere within the EIAR. These environmental topics may include the likes of noise and vibration, shadow flicker, air quality and traffic.

4.4 Shadow Flicker Assessment

A shadow flicker assessment will be completed by Blodau Partnerships. The report will be included in the appendices and key results included by Rowan in the relevant chapters. Shadow Flicker has been highlighted as a potential interaction with the local population and has been associated with potential human health risks and is therefore proposed to be assessed in detail in the EIAR.

In order to establish the extent (if any) for potential shadow flicker on neighbouring dwelling/sensitive receptors within the vicinity of the proposed wind turbine location, a detailed shadow flicker assessment will be carried out on the basis of the *Wind Energy Development Guidelines 2006* and current industry best practice.

Based on the modelled final turbine layout the shadow calculation program windPRO will be used to assess the turbine efficacy and operating conditions. The add on module "Shadow" from EMD International A/S, Denmark will be used to undertake this shadow flicker assessment.

The assessment for the proposed wind turbines was calculated on the basis of "worst case scenario" given by the following assumptions:

- The minimum affecting angle is 3° above horizon.
- The coordinates of closest residents in the vicinity of the wind turbine,
- The contour height (z-level) of the terrain is considered.
- Further obstacles like forests or buildings remain unconsidered in the calculations and are verified by Macro Works sight survey as part of the LVIA.
- The calculated shadow flicker exposure is then calculated based on a worst-case assumptions:
 - The sun is shining all day from sunrise to sunset.
 - The rotor plane is always perpendicular to the line from the wind turbine to the sun.
 - The wind turbine is always operating.

Based on the analysis and requirements, the results of the worst-case scenario and the preferred layout are presented in an appendix and the results used to analyse the population impacts and shadow flicker exposure.

5. Biodiversity

5.1 Methodology

The Developer has appointed Inis Consultants to provide ecological baseline surveys for the proposed project and associated activities. Surveys are conducted for the proposed project in accordance with the national guidelines and approved methodologies and the CIWEM Guidelines for baseline surveys in relation to wind farm development.

5.1.1 Study Area

The study area for ecological assessment includes all the land where works are proposed associated with the development, namely within the planning boundary, along the grid connection route and along the turbine delivery route. In addition, important ecological habitats and receptors within the study area of the proposed project were also studied.

5.1.2 Desk Based Studies

The desk study involved the examination of aerial photographs, current and historical maps and plans and drawings of the proposed project. In addition, information was collated on designated nature sites that could be affected by the proposed project using a source-pathway-receptor model.

A search of the following information sources was undertaken and updated throughout the assessment process to ensure current data were incorporated into the assessment:

- National Parks and Wildlife Service (NPWS) website;
- National Biodiversity Data Centre website (NBDC);
- Environmental Protection Agency website (EPA);
- Inland Fisheries Ireland (IFI);
- Birdwatch Ireland website (BWI);
- Bat Conservation Ireland (BCI); and
- Butterfly Ireland website.

From this assessment indicative key habitats and species and potential presence of ecology of conservational interest were determined.

The assessment has also considered the nearest Natura 2000 sites and their Species of Conservation Interest / Qualifying Interests to inform the assessment and the survey planning.

5.1.3 Baseline Surveys

Detailed field surveys of the proposed project and adjacent land within the study area are ongoing from between 2022 to date, inclusive to identify bird, bat, mammal, aquatic populations, and habitats present, and to gather supporting data to enable detailed impact assessment. Survey dates, timings and conditions are detailed in **Table 5-1**.

Table 5-1: Field surveys carried out for the proposed project to date

Target Receptors	Survey Type	Dates
Terrestrial Habitats	General Walkover	Wind Farm July 2023 Grid connection and Turbine Delivery Route (TDR) May 2024
Invasive Species	General Walkover	Wind Farm July 2023 Grid connection and Turbine Delivery Route (TDR) May 2024
General Mammals	General Walkover	Wind Farm July 2023
	Camera Trap Deployment	November 2023 and January 2024
Otter	Otter Walkover Wind Farm	October-December 2023
Bat	Bat Transects Spring/Summer/Autumn Surveys;	May, July and September 2023
	Bat static detector surveys 2023	May, July, August and September 2023
	Potential Roost Assessment (PRA) Wind Farm	February 2023
	Potential Roost Assessment (PRA) Grid Connection	March 2024
Bat Roost Surveys	Emergence Surveys	July and August 2023
Amphibians & Reptile	Amphibian Suitability Surveys	Wind Farm July 2023
Marsh Fritillary	Marsh Fritillary Suitability Surveys	July 2023
	Marsh Fritillary Larval Web Surveys	August and September 2023
Fisheries	Electrofishing Surveys	August 2023
	Habitat Assessment	

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Target Receptors	Survey Type	Dates
White-clawed Crayfish	Hand-searching of instream refugia and sweep netting Surveys	
Fish, Invertebrate and Amphibians	eDNA analysis Surveys	
Invasive aquatic species	eDNA analysis, Habitat Assessment, Hand-searching of instream refugia and sweep netting Surveys	
Waterbody Features	Water Quality Sampling Surveys (Q-Values)	
Aquatic Invertebrates	Macroinvertebrate Surveys	
Lake macro-invertebrate communities	Sweep netting Surveys	
Macrophyte and Aquatic Bryophyte	Macrophyte and Aquatic Bryophyte Surveys	
Birds	Vantage Point Surveys	May 2023 – March 2024
	Breeding Raptor Suitability Survey	May 2023 and March 2024
	Breeding Raptor Activity Survey	May, June and July 2023, March, April and May 2024
	Hen Harrier Roost Watch Survey	October 2023 – March 2024
	Barn Owl Roost Suitability Surveys	May 2023, April 2024
	Breeding Barn Owl Dusk Activity Surveys	July and August 2023
	Countryside Bird Surveys	May and June 2023, November 2023 – February 2024

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Target Receptors	Survey Type	Dates
	Lowland Breeding Wader Surveys	April – May 2023, April – May 2024
	Breeding Woodcock Dusk Survey	May – June 2023, April – May 2024
	Irish Wetland Bird Survey (I-WeBS)	April, May and September 2023, October 2023 – March 2024, April – May 2024

Based on an initial site assessment, INIS has undertaken baseline surveys of the ecology of the proposed project including:

Habitats:

Surveys undertaken followed best practice guidance (Smith *et al.*, 2011) and utilised the habitat classification presented in Fossitt (2000). All habitats, species and invasive species within a 50m buffer of the proposed project, site boundary were surveyed and classified to level three in accordance with best practice guidelines (Fossitt, 2000).

Otter:

Surveys followed the NRA *Guidelines for Treatment of Otters During Construction of National Road Schemes* (NRA, 2008). Guidance on the extent of the study area for Otters was taken from the *British Highways Agency's Nature Conservation Advice in Relation to Otters HA8199* (Highways Agency, 1999) which dictates that a linear search of 300m upstream and downstream of each watercourse crossing is undertaken.

Bats:

The aims of the bat surveys carried out on site were to assess the bat roost suitability of bridges, buildings and mature trees that could be directly affected, and to identify potential indirect effects on bats, e.g., from disruption of commuting routes, or lighting. Bat surveys undertaken were as follows:

- Preliminary roost assessments for buildings in the proposed development in addition to suitable trees and watercourse crossing structures such as bridges and culverts;
- Activity Surveys (static detector surveys) at the site of the proposed turbine locations in Spring, Summer and Autumn (as per NatureScot, 2021),
- Activity Surveys (Transect surveys) in Spring, Summer and Autumn Transect surveys; and
- Emergence surveys.

All bat surveys carried out followed best practice guidelines (Collins, 2023).

Marsh Fritillary/Amphibians/Reptiles:

"*Ecological Surveying Techniques for Protected Flora and Fauna During the Planning of National Road Schemes*" (NRA, 2008) were followed when carrying out walkover surveys. To determine the presence and suitability of habitats for Marsh Fritillary (*Euphydryas aurinia*), habitat condition assessments and larval web surveys (following those for the NBDCs' *Marsh Fritillary Monitoring Scheme* were used.

Birds:

Vantage Point (VP) surveys were undertaken during the breeding and wintering seasons. VPs provided coverage of all the lands within the proposed project plus a minimum 500m buffer around all proposed turbines. Surveys from these three VPs were undertaken in accordance with best practice survey guidance (SNH, 2017). All target species (Annex I listed, Red-listed and Amber-listed species of conservation concern (Gilbert *et al.*, 2021)) were recorded in addition to commoner species potentially sensitive to the proposed project.

Breeding wader surveys were undertaken within the proposed project plus a 500m buffer, within which all suitable wetland habitat was surveyed. These were undertaken in accordance with relevant best practice guidance (O'Brien & Smith, 1992), during which the observer walked within 100m of all suitable breeding habitat. All wader species and other wetland birds (e.g., wildfowl, rails, gulls and terns) were recorded.

Transect surveys were used throughout the proposed project and a 500m buffer. The methodology was based on the standard line transect methodology for surveying breeding birds (CBS, 2012), adopting modifications described by Bibby *et al.* (2000) and Atkinson *et al.* (2006) for application during winter. All birds were recorded on standardised recording sheets in four distance categories from the transect route: 0-25 m, 25-100 m, >100 m, and in flight.

Hen Harrier (*Circus cyneus*) raptor roost surveys were carried out to determine if the proposed project is used as a roost site by raptors. Methods followed Gilbert *et al.*, 2011 and SNH (2017) guidance. Areas of potential suitable habitat for roost locations within 2km of the proposed project were identified during daytime walkover surveys.

Peregrine (*Falco peregrinus*) and Kestrel (*Falco tinnunculus*) hinterland surveys were conducted based on best practice disturbance buffers and core foraging zones for these species (Hardey *et al.*, 2013; SNH, 2016; Goodship & Furness, 2022). These surveys covered all suitable raptor breeding habitat within a 2km buffer around the proposed project. The surveys were conducted in accordance with best practice guidelines (Gilbert *et al.*, 1998; Hardey *et al.*, 2013). All raptors seen or heard were recorded and mapped, with emphasis on recording any activity suggesting breeding. Target habitat surveyed for these species were also recorded and mapped.

Wintering wetland birds include wildfowl (ducks, geese, and swans), waders and other species typically associated with wetland habitats. Wetland birds were surveyed in winter following the standardised approach used for the Irish Wetland Birds Survey (I-WeBS) (BirdWatch Ireland, 2008) and these methods are the recommended approach in the SNH guidance documents (SNH, 2017). Wildfowl surveys included all lakes and coastal areas within 5km of the wind farm site.

Breeding Woodcock surveys were informed by the best practice guidelines provided by Hoodless et al. (2009), Heward et al. (2015) and Brewin et al., (2022). Breeding Woodcock surveys were undertaken within a study area comprising suitable habitat within the proposed project and a 500m buffer. All Woodcocks seen or heard were recorded and mapped, with emphasis on recording any activity suggesting breeding within or near the proposed project (e.g., roding males).

Barn Owl surveys were undertaken following *Barn Owl Surveying Standards for National Road Projects* (TII, 2017) and other relevant best practice guidance (Shawyer, 2011; Lusby & O'Clery, 2014). Buildings were initially noted for potential suitability for breeding Barn Owls during a walkover survey throughout the proposed project and a 1km buffer from the proposed project, with any buildings identified as having high suitability for nesting and roosting Barn Owls subject to further surveys (SNH, 2017). The walkover survey involved checking for signs of occupation by Barn Owls such as pellets, feathers and dropping ('whitewash'). Consideration was also given to the extent and distribution of suitable Barn Owl foraging habitat (e.g., rough grassland). High suitability buildings were surveyed nocturnally to observe Barn Owl activity, with any Barn Owl activity recorded and mapped.

Aquatics:

Watercourse surveys were used to help define the watercourses' conformity or departure from naturalness. All sites were assessed in terms of:

- Physical watercourse/waterbody characteristics (i.e. width, depth, channel form) including associated evidence of historical drainage
- Substrate type and relative condition, listing substrate fractions in order of dominance (i.e. bedrock, boulder, cobble, gravel, sand, silt etc.)
- Flow type by proportion of riffle, glide and pool in the sampling area
- An appraisal of the macrophyte and aquatic bryophyte community at each site
- Riparian vegetation composition and bordering land use practices

Electro-fishing was used on watercourses in the vicinity of the proposed project. The survey was undertaken in accordance with best practice (CEN, 2003; CFB, 2008) and Section 14 licencing requirements. A fisheries habitat appraisal of the aquatic survey sites was undertaken to establish their importance for salmonid, lamprey, European Eel (*Anguilla anguilla*) and other fish species. The baseline assessment also considered the quality of spawning, nursery and holding habitat for salmonids and lamprey within the vicinity of the survey sites.

White-Clawed Crayfish (*Austropotamobius pallipes*) surveys were undertaken at the aquatic survey sites under a National Parks and Wildlife (NPWS) open national licence (no. C24/2023). Hand-searching of instream refugia and sweep netting was undertaken according to Reynolds *et al.* (2010). An appraisal of White-Clawed Crayfish habitat at each site was conducted based on physical habitat attributes (Gammell *et al.*, 2021; Peay, 2003), water chemistry and incidental records in mustelid spraint.

Environmental DNA (eDNA). analysis was used to validate site surveys and to detect potentially cryptically low populations within the study area. Composite water samples were collected and analysed for Freshwater Pearl Mussel (*Margaritifera margaritifera*), White-Clawed Crayfish and crayfish plague (*Aphanomyces astaci*) eDNA. In accordance with laboratory guidance, a composite (500ml) water sample was collected from the sampling point, maximising the geographic spread at the site (20 x 25ml samples at each site). The composite sample was filtered and fixed on site using a sterile proprietary eDNA sampling kit. The sample was stored at room temperature and sent to the laboratory for analysis with 48 hours of collection.

Biological water quality (Q-sampling) surveys were undertaken. All samples were taken with a standard kick sampling hand net from areas of riffle/glide utilising a two-minute kick sample, as per Environmental Protection Authority (EPA) methodology (Feeley *et al.*, 2020). Large cobble was also washed at each site for 1-minute (where present) to collect attached macro-invertebrates (as per Feeley *et al.*, 2020). Samples were elutriated and fixed in 70% ethanol for subsequent laboratory identification to species level. Any rare invertebrate species were identified from the NPWS Red List publications.

Macro-invertebrates via sweep netting was carried out. A standard pond net was used to sweep macrophytes and submerged vegetation to capture macro-invertebrates. The net was also moved along the lake/pond bed to collect epibenthic and epiphytic invertebrates from the substratum (as per Cheal *et al.*, 1993). A three-minute sampling period was employed. To ensure appropriate habitat coverage, the sampling period was also divided amongst the range of meso-habitats present at the survey sites to get a representative sample for sub-habitats.

Surveys of the macrophyte and aquatic bryophyte community were conducted by instream wading at each of the survey sites, with specimens collected (by hand or via grapnel) for on-site identification.

5.2 Potential Interactions

5.2.1 Potential Construction Phase interactions

Potential impacts for the construction phase of the proposed project, in the absence of mitigation would be associated with the:

- Direct loss of habitat due to the footprint of the proposed project and its construction.
- Direct loss of individuals due to collisions with machinery;
- Disturbance of bird, bat or mammal species in proximity to the proposed project;
- Degradation of habitats (including degradation in water quality) arising from pollution impacts, including sedimentation entering watercourses; and
- the potential spread of invasive species.
- loss of habitat due to the footprint of the proposed project and its construction;
- some potential disturbance of bird, bat or mammal species in close proximity to the proposed project; and

- the potential spread of invasive species.

It is recognised that the proposed project is being constructed within predominately existing forestry land use. There are eight Natura 2000 sites located within 15k of the proposed wind farm site (six Special Areas of Conservation (SAC) and two Special Protected Areas (SPA). There are no sites of importance located within or bounding the proposed wind farm or in the immediate environs and the impact assessment will assess the potential for any pathway to these sites.

The presence of habitats or notable species of ecological value has been assessed for the site over a seasonal period through ecological baseline data gathering exercises.

5.2.2 Potential Operational Phase Interactions

Potential adverse effects for the operational phase of the proposed project, in the absence of mitigation have been identified as:

- Direct loss of individuals arising from collisions with maintenance machinery;
- Direct loss of individuals arising from collisions with operating turbines (birds/bats);
- Permanent loss of habitat within the footprint of the proposed project.
- Noise and lighting impacts – potential disturbance to nocturnal species, including, Badgers, bats, and birds; and
- Other impacts, including spread of invasive species.

A Stage 1 Appropriate Assessment Screening is being prepared in support of the EIAR, as required under Article 6 (3) of the EU Habitats Directive.

5.3 EIAR Scope

A series of baseline assessments and desk study of available ecological information, together with relevant plans and policies was undertaken to determine the scope of the baseline surveys required for the location and proposed project. Based on this assessment, baseline surveys were undertaken in accordance with the existing guidelines for habitats, flora and fauna over a seasonal cycle on the site and associated bat and avifauna surveys for a two-year period. Habitats and invasive species assessment were undertake for the site and routes. From this baseline data, the impact assessment process will involve:

- Identifying the presence of any potential habitats or species of ecological value through detailed baseline surveys
- Assessing potential direct, indirect and cumulative ecological impacts as a result of the construction and operation of the proposed project;
- Consultation with NPWS;
- Identifying and characterising potential significant impacts;

- Incorporating measures to avoid and mitigate (reduce) significant impacts where required; and
- Assessing the significance of any residual impacts after mitigation.

An Ecological Impact Assessment report and the Baseline Survey reports will be prepared to support the biodiversity assessment of the EIAR. In addition, a Stage 1 AA Screening Report will be submitted with the EIAR and a Stage 2 NIS prepared if the results of the Stage 1 determine it is required.

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6. Lands, Soils and Geology

6.1 Methodology

A desktop study was undertaken from the nationally available data to evaluate the potential for soil or geological attributes in the site or its vicinity requiring further investigation attributes in order to support the assessment of potential impacts on soils and geology from the proposed project, including:

- Geological heritage sites;
- Landfills, industrial sites and the potential for contaminated ground;
- Quarries and mines;
- Characteristics and range of soils;
- High yielding water supplies/ wells;
- Classification and extent of aquifers;
- Natural hydrogeological/ karst features; and
- Groundwater fed ecosystems.

6.1.1 Site investigation

The desktop assessment has identified no known potential aspects of concern, so an onsite assessment for site suitability and design considerations has been undertaken by Whiteford Geoservices Ltd.

The following scope of site investigation works have been completed for the project:

Table 6-1: Summary of Geological Site Investigation Works

Ref	Site Investigation Component	Remarks
A	Peat probing	In-situ assessment of peat thickness at wind turbine generators and substation
B	Trial pitting to determine the underlying soil type, its thickness overlying rock and the relative competence of each stratum.	A total of 7nr Trial pit exploratory holes to assess ground conditions. Each trial pit was excavated to a maximum depth of 3.5 – 4.0m depending on specific ground conditions. These exploratory holes were undertaken at the following locations: 1. T1 2. T2 3. T3 4. T4 5. T5 6. T6 7. Onsite substation and Control building
	In-situ Soakaway Testing at the onsite substation	Single soakaway test undertaken to determine permeability of superficial soils.
C	Geophysical Profiles at T2, T4 and T6	Where infrastructure is located closest to the existing quarry face.
D	Laboratory testing of soils	To determine preliminary geotechnical parameters for foundation design
E	Detailed Slope Stability Analysis at T2, T4 and T6	Where infrastructure is located closest to the existing quarry face.

The site investigation reporting and results will be included in the EIAR.

6.2 Potential Interactions

6.2.1 Potential Construction Phase Interactions

Potential Interactions associated with the construction phase of the proposed project may include:

- Loss of soil cover, soil erosion and compaction
- Removal and storage of spoil / overburden;
- Risk of encountering contaminated ground in unknown locations;
- Impacts to Geologically significant sites
- Soil stability and underlying geology in relation to the suitability of design, including foundation selection.

6.2.2 Potential Operational Phase Interactions

Potential Interactions associated with the operational phase of the proposed project include the following:

- Alterations to local surface run-off patterns resulting in local changes to recharge into the soils and bedrock over the operational life of the proposed project;
- Potential for the permanent loss of localised soils; and
- Potential contamination of soils through accidental spillages of fuels or chemicals during the ordinary use of the civil infrastructure

6.3 EIAR Scope

A walkover assessment has been undertaken in conjunction with a desktop study of available information and relevant policies and plans. Based on these initial assessments, a phase 1 site investigation programme has been developed in order to collect soil samples and establish baseline conditions onsite. The assessment will cover Potential Interactions on soils and geology, while outlining the existing conditions together with the likely Potential Interactions associated with the construction and operation of the proposed development.

The impact assessment process will involve:

- Identifying and characterising the significance of Potential Interactions;
- Incorporating measures to avoid and mitigate significant impacts where required; and
- Assessing the significance of any residual impacts after mitigation measures are enforced.

The assessment to be carried out will include the following elements:

- Identification of issues relevant to the proposed project;
- Review of current soil, bedrock and groundwater conditions in the vicinity of the proposed project;

- Site investigations reporting;
- Assessment of Potential Interactions of construction and operational activities on soils, and geology;
- Incorporating measures to avoid and mitigate (reduce) significant effects where required; and
- Assessing the significance of any residual effects after mitigation.

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7. Water, Hydrology and Hydrogeology

7.1 Methodology

A desktop study was undertaken from the nationally available data to evaluate the potential for water courses, groundwater and flooding records and potential of the site or its vicinity. The results identified two water courses near the proposed wind farm site and limited risk of groundwater or flooding. To confirm and to provide further information Hydrec Consulting (Hydrec) are appointed to conduct hydrology assessments and site visits

7.1.1 Site investigation

Following the desktop study, Hydrec were appointed to conduct an assessment of the site for hydrology and flood risk. Following an initial assessment, Hydrec have conducted a site assessment and assessment of topographic data required to complete a Flood Risk Assessment (FRA). In addition, Hydrec have taken a number of cross section measurements in relation to the Culliagh Stream which flows along the eastern wind farm site boundary and which will be presented as assessed in the FRA report. The FRA will be prepared in accordance with '*The Planning System and Flood Risk Management Guidelines for Planning Authorities*' published in November 2009.

Hydrec will conduct an estimation of design flood flows based on the Flood Studies Update (FSU) programme and other suitable techniques. Following these calculations a hydraulic model of the Culliagh Stream will be constructed using HEC-RAS software. This information will inform the need for mitigation and drainage plans, and Hydrec will also apply and present the Justification Test.

Additional information for the EIAR assessment will be provided by the ecological water course sampling that has been conducted by Inis as part of the ecological assessment, and the water course water quality sampling completed by Rowan as part of the baseline assessment.

7.2 Potential Interactions

7.2.1 Potential Construction Phase Interactions

The hydrological context of the wind farm site includes the Ballymartin River is located c. 20m west and the Culliagh stream is located c. 120m east of the wind farm site, both of which located within the Upper Shannon Catchment.

The Ballymartin River is described as being 'Not at Risk' and of Good Status, while the Culliagh stream is described as being 'At Risk' and of Poor Status.

There is potential for the surrounding hydrological network of the proposed project site to be impacted during the construction phase. Pollution may occur via sediment and on-site spillages, which if uncontrolled may flow into local surface water drainage and outfall into the local watercourses. Additionally, there is risk of contamination of existing soils and groundwater from accidental spillages during construction phase.

In order to avoid indirect sedimentation impacts on the Ballymartin River & the Culliagh stream run-off from the construction areas shall be intercepted and managed through a series of pollution control methods such as silt fences and silt mats.

7.2.2 Potential Construction Phase Mitigation

As part of the Construction Environmental Management Plan (CEMP) for construction Phase a number of surface water mitigation measures will be included in the EIAR to protect local water courses and a Surface Water Drainage Plan will be included in the CEMP outline which will be submitted following the EIAR submission.

Mitigation will include the installation of a silt fence in areas of the site where groundworks are proposed to remove the risk of run off of suspended solids and trap any sediment release during wet weather events. This should be sited along the Ballymartin River & the Culliagh stream. The silt fence will be a permeable geotextile barrier installed vertically on support posts and entrenched in the ground.

7.2.3 Potential Operational Phase Interactions

During the operational phase, there is potential for pollution of surface water features through surface water runoff. Sources of pollution from the wind farm site could potentially include spills, such as fuel/oil from vehicles on site during maintenance. These substances could enter surface water drainage and potentially discharge to surface water bodies in proximity to the wind farm site.

7.2.4 Potential Operational Phase Mitigation

The CEMP will include the Surface Water management Plan for areas adjacent to the stream. The proposed turbine foundation structures and hard standing nearest to any watercourse will include a Drainage Management Plan which will include managed drainage from the hardstanding and a sediment interceptor to prevent any surface water run off carrying any additional sediment load to the nearby streams.

An additional potential impact relates to flood risk due to larger areas of hardstanding as a result of the proposed project. This is considered in the design to minimise hard standing areas where possible and limit development to the turbines and access roads.

7.3 EIAR Scope

The EIAR will present the baseline and analysis of the site as well as available information and relevant policies and plans. The assessment will describe the existing water environment and any potential impacts associated with the construction and operation of the proposed project on these aspects.

According to the 2016 Office of Public Works (OPW) Flood Maps, the subject property does not appear to be within an area at risk of fluvial, pluvial or tidal flooding. There is some pluvial flooding on the north eastern boundary of the site, however, the risk score of this area is rated as 'low risk' due to the fact that the nearest historical flood event occurred 2.7km away.

Nonetheless, a Floor Risk Assessment and Surface Water Drainage Plan will be completed as part of the EIAR. The Impact assessment will include Identifying and characterising the significance of any Potential Interactions and inclusion of measures to avoid and mitigate (reduce) significant effects (where they occur) including highlighting any additional risk and assessing the significance of any residual effects after mitigation.

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8. Air Quality and Climate

8.1 Methodology

8.1.1 Air Quality

An initial desktop assessment has been conducted based on the following sources in order to identify and assess the Potential Interactions on air quality and climate from the proposed project:

- Ambient Air Monitoring Station Environmental Protection Agency (EPA);
- Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes, National Roads Authority (now Transport Infrastructure Ireland);
- Air Quality in Ireland 2017 (Indicators of Air Quality) Report, Environmental Protection Agency (EPA); and
- <http://www.epa.ie/air/quality/>.

A site visit of the proposed project and surrounding environment was also undertaken to support the understanding and inform the identification of potential sensitive receptors in relation to air quality. Based on the desktop study and the assessment of the national data the area has no existing issues with air quality and low density receptors in the area meaning that the activities which will have limited duration and air quality impacts will not contribute to a significant decrease in air quality. In the longer term the proposed project will aid to transition away from fossil fuels and as result contribute in reducing CO₂ emissions and climate change.

The assessment will look at the likely air emissions from the construction activities as well as proposing mitigation for the control in relation to air quality, dust management and nearby receptors.

As a result, air quality modelling is not proposed for the assessment, which will be based on analysis of the proposed activities and equipment to determine the potential emissions and impacts.

8.1.2 Climate and Greenhouse gas emissions

From the initial desktop assessment, it is proposed to assess the Green House Gases (GHG) accounting of the project, evaluating the level of emissions and CO₂ budget required for the projects construction and operation, and evaluating the projects contribution to County and National Climate Action Plans and targets.

8.2 Potential Interactions

8.2.1 Potential Construction Phase Interactions

During the construction phase there is potential for an impact on air quality from the following sources:

- Potential for construction dust emissions and nuisance dust from activities such as excavation, soil movement, soil storage and backfilling. Dust tends to be deposited within 500m of the generation

site, and therefore sensitive receptors which fall within this distance of construction activities would be more at risk; and

- Emissions from Heavy Goods Vehicles (HGVs) and on-site construction plant and equipment which may give rise to emissions including; particulates (PM10 and PM2.5), benzene, nitrogen oxides (NOx) and carbon monoxide (CO).

The predominant creation of dust during the proposed project will be generated from heavy earth moving plant during activities such as excavations, transport and unloading of crushed stone. Where possible, fill and stone will be sourced locally to prevent additional activity or risks, including secondary processing of these materials associated with the proposed project.

In order to minimise dust emissions during construction, mitigation measures will be included in the EIAR and be implemented at the proposed project during construction phases of the proposed project.

8.2.2 Potential Operational Phase Interactions

There are no channelled emissions to atmosphere associated with the operation of wind turbines.

The operational phase does not give rise to any activities which require an emission point, nor does it give rise to any channelled emissions to atmosphere. The only operational emissions are in relation to vehicles for engineer visits or maintenance. As such no project specific air quality modelling is required.

The project will provide energy without contributing to County or national GHG emissions. The assessment will conduct a carbon balance accounting and GHG reduction contribution calculations. Other aspects of climate change and potential futureproofing against changes in climate conditions will be assessed in the relevant chapters (such as rainfall and storms in Water chapter)

8.3 EIAR Scope

The air quality assessment carried out on the proposed project will include the following elements:

- Identification of air quality issues relevant to the components of the proposed development, including exhaust gases;
- Review of background ambient air quality in the vicinity of the proposed development (relevant air quality baseline data will be obtained from the EPA and publicly available information);
- Assessment of potential construction activities related air quality impacts;
- Assessment of Potential Interactions of plant and equipment processes on air quality;
- Assessment of Potential Interactions of traffic on ambient air quality;
- Identifying the significance of any Potential Interactions;
- Incorporating measures to avoid and mitigate significant effects (where they occur); and
- Assessing the significance of any residual effects after mitigation.
- Calculating the net benefit of proposed development

The assessment will identify potential sensitive receptors relevant to the proposed project. Sensitive receptors include locations where people spend significant periods of time, such as domestic properties. Sensitive receptors within the vicinity of the proposed project are determined from the local buildings and uses derived from the population and human health information or any ecological sensitivities identified from the Ecology and biodiversity surveys.

Given the nature of the proposed project, detailed air quality dispersion modelling is not proposed to inform the impact assessment process. Carbon accounting will be conducted to establish the contribution to County and National Climate Action Plans.

9. Noise and Vibration

9.1 Methodology

Enfonc have been appointed as the noise and vibration specialist to complete monitoring and proposed project impact assessment in line with EIAR requirements. Baseline noise data collection and modelling consultancy to provide impact analysis will be prepared as part of the EIAR Noise and Vibration Chapter.

Noise and vibration assessment will be completed in accordance with:

- *The Assessment and Rating of Noise from Wind Farms – ETSU-R-97*
- *The Institute of Acoustics Good Practice Guides*
- *BS 5228:2009+A1:2014. Code of practice for noise and vibration control on construction and open sites.*
- *Wind Energy Development Guidelines for Planning Authorities published by the Department of the Environment, Heritage and Local Government in 2006.*

In addition to these specific guidance documents, the following guidelines are applicable for the purposes of the EIAR:

- EPA Guidelines on the Information to be contained in Environmental Impact Statements, (EPA, 2002);
- EPA Advice Notes on Current Practice (in the preparation of Environmental Impact Statements), (EPA, 2003);
- EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports Draft August 2017 (EPA, 2017); and
- EPA Advice Notes for Preparing Environmental Impact Statements, (Draft, September 2015).

The assessment methodology undertaken can be summarised as follows:

- Review of the most applicable standards and guidelines to set acceptable noise and vibration criteria for the construction and operational phases of the proposed development;
- Characterise the receiving environment through baseline noise surveys at various Noise Sensitive Locations (NSL's) surrounding the proposed project;
- Undertake predictive calculations to assess the potential impacts associated with the construction phase of the proposed project at NSL's;
- Undertake predictive calculations to assess the potential impacts associated with the operational phase of the proposed project at NSL's;
- Identify and assess other wind farm developments (operational, permitted or proposed) with the potential for cumulative impacts;

- Specify mitigation measures to reduce, where necessary, the identified potential outward impacts relating to noise and vibration from the proposed project; and,
- Describe the significance of the residual noise and vibration effects associated with the proposed project.

Enfonic have conducted a baseline noise assessment at the site including day, night and off-peak noise measurement, monitoring at four locations for a period of 21 days, and collection of onsite LiDAR measurements for wind monitoring during the noise baseline.

Utilising this information and the design specification Enfonic will conduct a noise propagation model of the candidate turbine including cumulative assessment and vibration assessment from operations.

Enfonic will also assess any ancillary infrastructure including transformers and may model one low noise management curtailment matrix, if required.

9.2 Potential Interactions

9.2.1 Potential Construction Phase Interactions

The potential construction phase noise and vibration impacts will be associated with the operation of machinery associated with the proposed project. The actual noise level produced by construction work will vary depending on various factors, including the type of plant in use, plant location, duration of operation, hours of operation and intervening topography and screening. Construction noise and vibration impact assessment including site deliveries, excavations, borrow pits, rock breaking etc. will be carried out by Enfonic. Criteria will be set following guidance given in BS 5228-1 (noise) and BS 5228-2 (vibration). Vibration impacts from the proposed project are predicted to be low to medium given the nature of the work to be undertaken and will be evaluated from information from published and industry sources. The adjacent quarry to the proposed wind farm site is noted to carry out blasting for excavation purposes and cumulative assessment will be undertaken from potential impacts to the infrastructure of the proposed project and to surrounding sensitive receptors.

9.2.2 Potential Operational Phase Interactions

The noise impact assessment will be based on current guidance and best practice in relation to acceptable levels of noise from wind farms as contained in:

- Wind Energy Development Guidelines 2006,
- Supplementary guidance from ETSU-R-97,
- Institute of Acoustics Good Practice Guides,
- World Health Organization (WHO) Noise Guidelines,
- Other human health effect research and future potential guidance change will also be considered.

The assessment will also include:

- Noise propagation model of candidate turbine model including cumulative assessment.

- Noise propagation model of up to 2no. additional candidate turbines including cumulative assessment.
- Consultation with the relevant Environmental Department / other relevant stakeholders
- Vibration associated with the operation
- Ancillary infrastructure including transformers
- Modelling of one low noise management curtailment matrix (considering a single layout / candidate turbine) if required.

Operational noise will also be considered under the Population and Human Health chapter considering Wind Energy Development Guideline 2006 (WEDG-06) document and other human health effect research any future potential guidance change will also be considered.

9.3 EIAR Scope

The assessment will cover Potential Interactions from noise and vibration and will describe the existing conditions and the likely Potential Interactions associated with the construction and operation of the proposed project.

The noise and vibration assessment carried out on the proposed project will include the following elements:

- Identification of noise and vibration issues relevant to the proposed project;
- Review of background noise in the vicinity of the proposed project and establish a baseline assessment.
- Characterise the receiving environment through baseline noise surveys at various NSLs surrounding the proposed project;
- Undertake predictive calculations to assess the Potential Interactions associated with the construction phase of the proposed development at NSLs;
- Undertake predictive calculations to assess the Potential Interactions associated with the operational phase of the proposed development at NSLs;
- Identify and assess other developments (operational, permitted or proposed) with the potential for cumulative impacts;
- Specify mitigation measures to reduce, where necessary, the identified potential outward impacts relating to noise and vibration from the proposed project;
- Describe the significance of the residual noise and vibration effects associated with the proposed project, and

Assessment of Potential Interactions of traffic on noise levels in and around the proposed project.

Given the nature of the proposed project, and its proximity to receptors, the EIAR assessment will be informed by noise predicative calculations to assess Potential Interactions to NSLs) (as defined by the

EPA NG4 definition) relevant to the proposed project. Sensitive receptors are defined by the EPA NG4 and the study area as generally within the 35db noise contour at the rated power of the turbines (ETSU/WEDG-06).

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10. Landscape and Visual

Macro Works are appointed as the landscape and visual impact assessment consultancy, for the proposed project. This report will accompany the EIAR and form the basis for the Landscape and Visual Impact Assessment chapter.

10.1.1 Policy Plan & Context

The European Landscape Convention promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues. The Convention was adopted on the 20th October 2000 and came into force on the 1st March 2004. The Convention was ratified by Ireland in 2002. As one of the obligations under the convention, a draft National Landscape Strategy was issued for public consultation by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs, (formally the Department of Art, Heritage and the Gaeltacht in July 2014. Following consideration of submissions, The 'National Landscape Strategy for Ireland 2015-2025' was published in mid-2015 by the Department of Arts, Heritage and the Gaeltacht.

One of the key objectives of the National Landscape Strategy, and a requirement of the European Landscape Convention, is to prepare a National Landscape Character Assessment (LCA). However, this is not likely to be prepared prior to the submission of the planning application. On this basis, county level Landscape Character Assessments for County Roscommon, Leitrim and Longford (contained within the respective County Development Plans) will be a key consideration. In all cases, these Landscape Character Assessments have also been integral to the development of wind energy strategies / policy contained within the CDPs.

Wind Energy Development within the Republic of Ireland is undertaken in accordance with the Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines for Planning Authorities (2006/2019 revision). Recommendations on the siting and design of wind energy developments are provided in Chapter 6 of the current / draft revised Guidelines based on six potential landscape character types. The proposed development is considered to be most associated with the 'Transitional Marginal Landscapes' 'Mountain Moorland' landscape types, whilst elements of the 'Hilly and Flat Farmland' landscape type are also noted throughout the study area. This guidance will be a key consideration of the landscape and visual assessment.

The Landscape and Visual Assessment of Ballyfeeny Wind Farm will be undertaken in strict accordance with the Landscape Institute and the Institute of Environmental Management and Assessment publication entitled '*Guidelines for Landscape and Visual Impact Assessment*' – Third Edition (2013). This is recognised as the principal best practice guidance for landscape and visual assessment of all forms of development in Ireland and the UK.

Regard will also be given to the overarching EIA guidelines and advice notes set out by the EPA:

- EPA *Guidelines on the Information to be contained in the Environmental Impact Assessment Reports* (2022)

Other relevant LVIA and wind energy specific guidance that will be considered includes;

- NatureScot *Siting and Designing Wind Farms in the Landscape* (version 3a – 2017)
- NatureScot *Assessing the Cumulative Impact of Onshore Wind Energy Developments* (2012).
- NatureScot *Visual representation of wind farms: Best Practice Guidelines* (version 2.2 - 2017).

The most relevant landscape and visual policies with regard to the proposed wind farm development are contained within the County Development Plan for County Roscommon, Leitrim and Longford.

10.1.2 Study Area

The Wind Energy Development Guidelines published by the Department of the Environment, Heritage and Local Government (2006) specify different radii for examining the Zone of Theoretical Visibility of proposed wind farm projects ('ZTV'). The extent of this study area is influenced by turbine height as follows:

- 15km radius for blade tips up to 100m;
- 20km radius for blade tips greater than 100m; and
- 25km in order to incorporate features of national or international renown.

In the case of this project, the blade tips will be over 100m high and, thus, the minimum ZTV radius required is 20km from the outermost turbines of the proposed development. It is not considered that there are any features of 'national or international renown' between 20km and 25km of the proposed wind farm site and thus, the study area will remain at a consistent 20km radius from the proposed project.

10.1.3 Sensitive Receptors

Sensitive landscape and visual receptors will be identified during baseline studies and fieldwork and will consist of both designated (highly sensitive landscape zoning / scenic views in the CDP) and non-designated receptors. Visual receptors will be selected from the following categories;

- Designated scenic routes / views (CDP)
- Local Community views (roads and residences within approximately 5km)
- Centres of Population
- Major Transport Routes
- Amenity, Heritage and Tourism locations

10.2 Landscape & Visual Impacts Assessment Methodology

10.2.1 Desk Study

The desktop study will comprise of the following:

- Review of a Zone of Theoretical Visibility (ZTV) map, which indicates areas from which the development is potentially visible in relation to terrain within the study area;
- Review of relevant County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations;

- Online review of tourism, recreational and heritage features within the study area that may be potential visual receptors.
- Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity;
- Initial ZTV maps and VRPs are shown below in **Figure 10-1** for the consultation process.

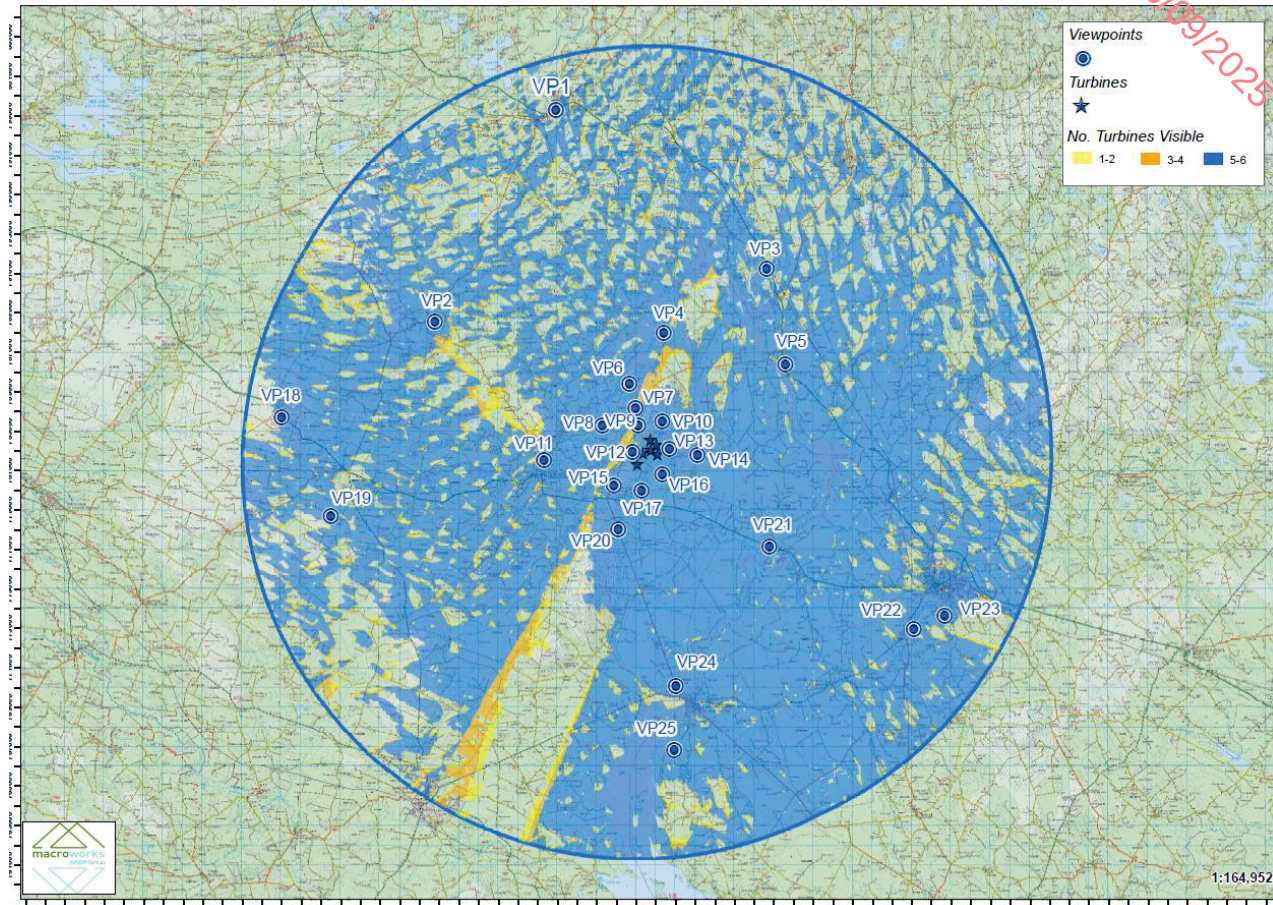


Figure 10-1: Zone Of Theoretical Visibility and Proposed Viewpoints

10.2.2 Fieldwork

The following fieldwork will be completed as part of the landscape visual assessment:

- Select a refined set of VRP's for assessment.
- Record a description of the landscape elements and characteristics within the Study Area generally and also within view from each VRP.
- Capture high quality base photography from which to prepare photomontages of the proposal.

10.2.3 Impact Assessment

The assessment of landscape effects involves establishing the landscape baseline. This includes consideration of the geographic location and landscape context of the proposed wind farm site as well as the essential landscape character and salient features of the wider Study Area and is discussed with respect to; landform and drainage and vegetation and land use. The visual baseline is more population

based, but still overlaps with elements of the landscape baseline. The visual baseline is discussed in relation to; centres of population and houses; transport routes and public amenities and facilities. Once the baseline environment is established an assessment of the potential effects associated with the proposed project will be carried out. In accordance with the Guidelines for Landscape and Visual Impact Assessment (2013), the method for estimating the significance of landscape impacts and visual impacts is very similar. This is summarised in the diagram below;

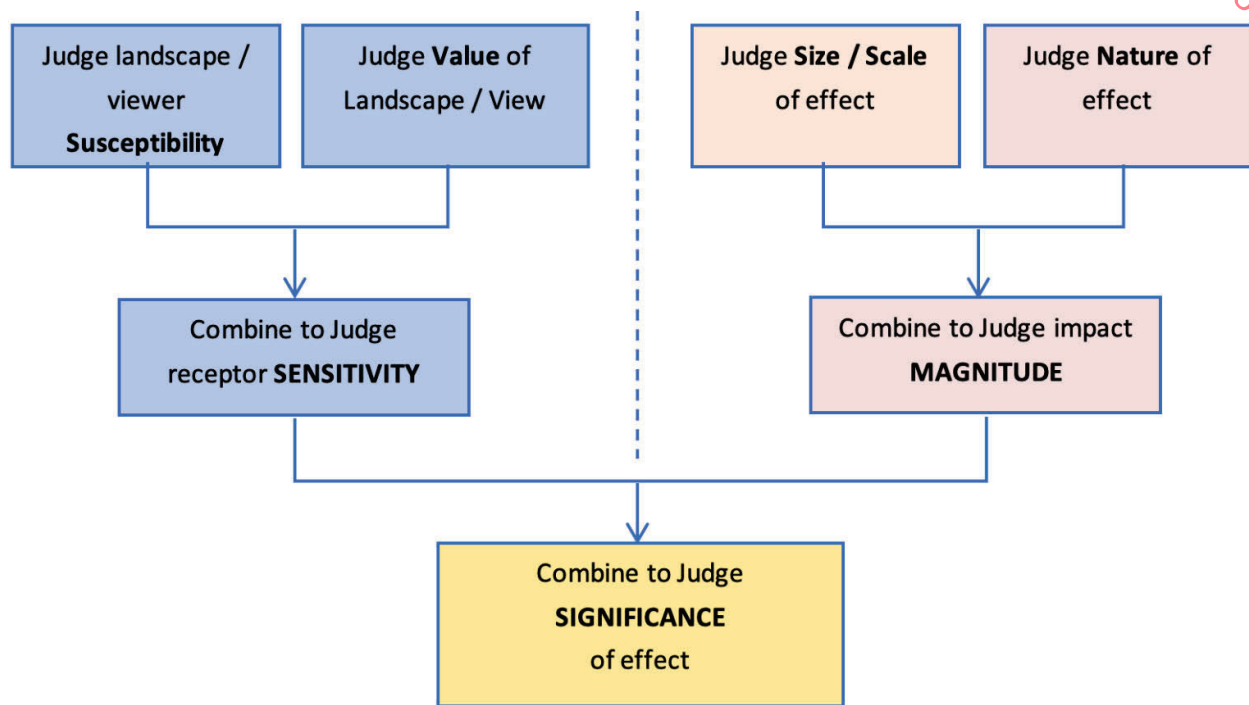


Figure 10-2 Method for assessing Landscape Impact significance and Visual Impact significance (based on GLVIA – 2013)

10.2.4 LVIA Assessment Tools / Techniques

10.2.4.1 Design Stage Wireframe-montages

Wireframe montages, which consist of spatially accurate but un-rendered (usually blue) turbines can be quickly prepared and used to examine visual impacts and particular the aesthetics of the turbine arrangement from key views. The layout can then be adjusted and re-examined in the same manner until an optimal design is achieved.

10.2.4.2 Photomontages

Photomontages are photo-realistic depictions of the proposed project superimposed on baseline photography at selected receptor/viewpoint locations. The photomontages will be fully compliant with the most recent NatureScot guidelines (2014).

In the case of the proposed Ballyfeeny Green Energy Project, it is anticipated that approximately 20 no. viewpoints will be required overall. It is imperative that base photography is captured in the clearest of viewing conditions, especially as existing turbines will be contained in most views.

10.3 Potential Interactions

10.3.1 Potential Construction and Operational Phase Interactions

Potential construction and operational Phase Interactions relevant to the Landscape and Visual Assessment may include;

- Visual impacts from the movement of traffic and machinery to and from the facility and associated ancillary construction requirements i.e. water drainage, power and lighting etc to and from the facility; and
- Landscape and visual impacts arising from the movement of construction materials;
- Landscape and visual impacts associated with the operational traffic to and from the site.

Landscape and Visual Impact Assessment of the constructed operational turbines including photomontages and viewpoint assessment from visual receptors and residents.

10.4 Assessment of Potential Impacts

Overall, there is potential for short range (0-5km), mid-range (5-15km) and long range (15km+) views of the proposed project, but with the highest potential for significant landscape and visual impacts to occur for short range views, where these might coincide with highly sensitive receptors such as the scenic routes to the north of the site, and the surrounds of the River Shannon. Views of the proposed project from beyond 20km, though feasible, could only occur from elevated vantage points and in very clear viewing conditions. At such distances, any visual impacts from the proposed project are not considered to have potential for significant effects even at highly sensitive receptor locations.

Potential landscape and visual impacts could also occur in respect of ancillary development such as access roads, hardstands, and grid connection.

10.5 Cumulative Effects

Cumulative effects have the potential to be generated from a number of viewpoints in combination with other wind farms in the area. A Zone of Theoretical Visibility (ZTV) map will be produced for the EIAR showing the potential cumulative visibility of the Development together with the other wind farms in the area. Cumulative photomontages will be prepared from all viewpoints. The only existing wind farm development within the study area is Slieve Bawn Wind Farm situated some c. 4km south of the proposed wind farm site. A full analysis of live applications for wind energy developments will also be undertaken to understand potential future cumulative effects.

10.6 EIAR Scope

The assessment will include a field walkover undertaken alongside a desk study of available information and relevant policies and plans. The impact assessment process will involve:

- Describing the existing environment (both landscape and visual) taking into account the landscape character assessment published in the Roscommon County Development Plan 2022-2028;
- Identifying potential landscape and visual issues relevant to the proposed project;
- Assigning landscape and visual receptor sensitivity;
- Identifying the significance of any Potential Interactions;
- Incorporating measures to avoid and mitigate (reduce) significant effects (where they occur);
- Assessing the significance of any residual landscape effects and visual effects after mitigation.
- Preparation of a Landscape and Visual Impact Assessment
- Preparation and presentation of photomontages

11. Roads, Traffic and Transport

11.1 Methodology

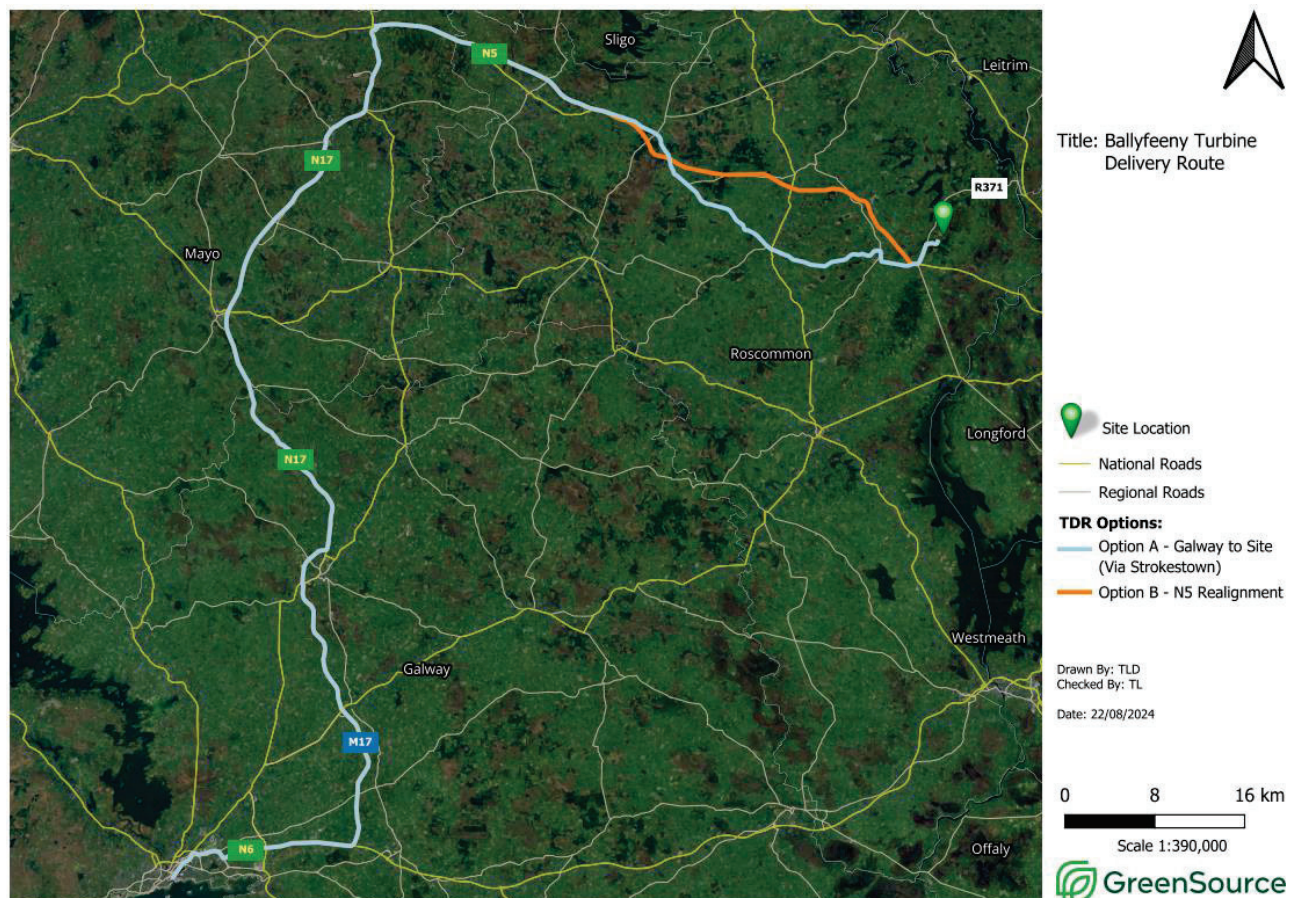
Traffic and transport analysis includes the development of the Turbine Delivery Route (TDR) to transport the wind turbine components from port of entry to the proposed wind farm site, as well as construction and operations access and interaction with existing road users.

11.1.1 Baseline Assessments

A review of the local roads network, site visits and topographic surveys have been completed in order to determine most suitable site access locations at construction and operational stage and the preferred project layout. Baseline traffic data has also been collected to allow traffic impact assessment for the construction and operational stages. Based on this assessment, site layout and access roads have been optimised

11.1.2 Turbine Delivery Route Analysis

Several options for the TDR were evaluated using node assessment and route analysis. Two preferred routes, Options A & B as shown in **Figure 11-1** were subject to TDR Assessment from preferred port at Galway to site entrance including Autotrack/Swept Path Analysis. TDR Option A follows the existing road infrastructure from the port of Galway to the site via the N6, M17, N17, N5 and the R371. TDR Option B would utilise the proposed N5 realignment that would bypass the town of Strokestown.



Traffic count and baseline data was collected to inform traffic impact assessment at turbine delivery stage. Timing of delivery (year, time of day) is also to be considered to reduce Potential Interactions where possible.

The preferred route assessment has been driven and assessed for street furniture and condition assessment by the consultant, as well as coordination with the other specialists for a survey for invasive species and any ecological features of interest by the ecology consultant and a visual assessment by the archaeological consultant for any aspects or sites of architectural heritage that would influence the selection of the preferred TDR.

11.1.3 Construction Traffic Management Plan

As part of the CEMP a Construction Traffic Management Plan (CTMP) will be included in the proposed assessment.

It is recommended that the CTMP will address and incorporate required details and mitigation as determined from the EIAR, for example:

- Determine any road restrictions.
- In relation to the turbine delivery, the proposed and a secondary options have been assessed, though the turbine supplier may inform the preferred routing for delivery of the turbine to the site prior to delivery of the first components to ensure the suitability of any enabling works identified as part of the TDR assessment. The routing assessment will outline any existing road restrictions such as narrow bends, bridges, railway crossings etc.
- Stakeholder engagement plan for delivery including, Roscommon County Council roads department, An Garda Síochána and any other relevant local authorities.
- Any road closures that may be required will be undertaken in consultation with Transport Infrastructure Ireland, Roscommon County Council and An Garda Síochána.
- Advance notice to local residences and Roscommon County Council, advising of the traffic management proposals for the turbine delivery and the duration of these traffic movements shall be undertaken.
- Site deliveries will be scheduled outside of peak traffic times.
- Deliveries to the proposed development site shall be suspended on the day of any major local shows/events that have the potential to cause larger than normal traffic volumes.
- Adequate advance signage of the works. The contractor shall undertake consultation to confirm any signage requirements with the relevant authorities.
- All signage shall be provided in accordance with the Department of Transport's Traffic Signs Manual, November 2010 – Chapter 8 – Temporary Traffic Measures and Signs for Roadworks.

- Regular road inspections during the works shall be undertaken and cleaning implemented as required.

11.2 Potential Interactions

11.2.1 Potential Construction Phase Interactions

Potential Interactions from the construction phase may include:

- An increase in noise and potentially dust generated from construction related traffic, causing some level of disruption; and
- An increase in road traffic levels due to construction related activities, supplying and accessing the site and using the existing road network.

Construction traffic management will be addressed in the EIAR, outlining procedures to manage construction traffic sufficiently and to consider how construction traffic will access the site via the public road network. Controls and mitigation will be proposed in relation to the conditions and local receptors and road users.

The delivery of the turbine will require a number of loads using articulated haulage trucks. The delivery of each wind turbine will comprise the tower (3 / 4 parts), blades (3), nacelle (1part), hub (1 part) and various smaller/ancillary parts. Other vehicles requiring access to the site will include tracked excavators, dump trucks, mobile cranes and articulated haulage trucks.

During the construction phase, appropriate contact details will be provided to Roscommon County Council and emergency services in the event of any issues that may arise, such as obstructions on routes for emergency vehicles.

11.2.2 Potential Operational Phase Interactions

There are no significant operational activities expected

Potential Interactions on traffic and transport as a result of the operation of the proposed project, occasional staff and engineer access would require only a single vehicle access.

Maintenance works to turbines or to the access roads requiring works or plant are anticipated to be highly infrequent.

11.3 EIAR Scope

The assessment will address potential Interactions from traffic and transport movements and will describe the existing conditions and the likely potential Interactions associated with the construction and operation of the proposed project. This will include the Turbine Delivery Route, the site access and routing for plant, materials and equipment and the Grid Connection Route for construction as well as operations and decommissioning.

The Traffic Impact Assessment process will involve alternatives and selection of the preferred route.

The impact assessment will include assessment of potential Interactions to population or socioeconomic factors in the immediate areas.

Any impacts will be mitigated through the CTMP and the associated mitigation controls and measures for the wind turbine components delivery and construction.

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12. Archaeology, Architectural and Cultural Heritage

12.1 Methodology

ICON are a well-established specialist archaeological consultancy with experience across Ireland and providing a highly respected team experience in all archaeological disciplines. The EIA chapter will be prepared by John Kavanagh, MA MSc. Project Director with Icon Archaeology Ltd since 2005. John has over 28 years of archaeological experience including 20 years as a licenced director.

The evaluation of potential impacts upon the archaeological, architectural and cultural heritage resource is based on a desktop study of published and unpublished documentary and cartographic sources, followed by a field survey. In light of the legislative protection afforded to the cultural heritage resource the report will evaluate the archaeological, architectural, cultural and historical importance of the subject area and examine the impacts of the proposed project on both the local archaeological monuments and cultural heritage sites.

The chapter will be prepared in compliance with all relevant EIA and heritage legislation and guidelines including the following.

- Valetta Convention for the Protection of Archaeological Heritage 1997
- Granada Convention for the Protection of Architectural Heritage 1985
- National Monuments Legislation 1930 – 2004
- Framework and Principles for the Protection of the Archaeological Heritage 1999
- Wind Energy Guidelines 2006 & 2019 (Draft)
- Roscommon County Development Plan 2022 - 2028
- EPA Guidelines on the information to be contained in EIA reports 2022
- TII Guidelines for Cultural Heritage Impact Assessment of TII National Road and Greenway Projects 2024

12.2 Potential Interactions

12.2.1 Potential Construction Phase Interactions

No significant impacts are currently anticipated upon the cultural heritage resources as a result of the proposed proposed.

- Current turbine locations will have no direct impact on known archaeological assets.
- Current turbine locations may have a direct impact on previously unknown sub-surface archaeological remains.

12.2.2 Potential Operational Phase Interactions

No significant interactions are currently envisaged as a result of the operational phase of the proposed project.

12.3 EIAR Scope

It is proposed that an assessment of cultural heritage will be carried out and will be tailored accordingly based on professional judgement and local circumstances.

The assessment will cover potential for impacts on archaeology, architectural and cultural heritage, and will describe the existing conditions and any likely Potential Interactions associated with the construction and operation of the proposed project (where relevant). The following baseline sources will be consulted as part of the assessment for the proposed project:

- UNESCO World Heritage Sites
- National Monuments in State Care
- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- Record of Protected Structures (RCDP 2022 – 2028)
- National Inventory of Architectural Heritage (NIAH)
- The Topographical Files of the National Museum of Ireland
- Excavations Database
- First and subsequent Editions of Ordnance Survey maps (OSI)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI)
- Field Inspection
- Identifying and characterising the significance of any Potential Interactions.
- Incorporating measures to avoid and mitigate (reduce) these any significant effects (where they occur); and
- Assessing the significance of any residual effects after mitigation.

13. Material Assets

13.1 Telecommunication and Aviation Impact Study

A Telecommunication and Aviation Impact Study was carried out as part of this study. There are four primary stages in preparing and compiling a communication impact study:

- Telecom Operator Consultations
- Field Surveys
- Desktop Survey Network Modelling and Analysis
- Report Generation

A summary of each of these stages is provided below:

13.1.1 Telecom Operator Consultations

Consultations are commenced with telecom operators who are requested to raise any concerns they have regarding the impact of the proposed wind farm on their networks. The consultation process is used to assist in identifying telecoms infrastructure that could be impacted by the proposed project.

13.1.2 Field Surveys

Field surveys are undertaken and the co-ordinates of communication masts are recorded. During the field surveys of the communication sites, approximations of antenna size, bearing and height are made for the antennas installed on each of the masts surveyed.

13.1.3 Desktop Survey and Analysis

A desktop survey is carried out to plot the wind turbines in a radio planning tool. The radio planning tool uses GIS and terrain mapping databases to enable accurate modelling. A selection of mast-site coordinates is then obtained and inputs from various operators \ service providers are converted from Irish National Grid (Easting and Northing in meters) to degrees minutes seconds format and then imported into the radio planning tool. This provides a means of graphically showing telecommunications sites in the vicinity relative to the proposed project.

The findings from the consultations and field surveys are collated and the communications networks requiring further analysis are identified. Network modeling is used to assess the impact of the turbines on the communications networks. The figure below shows an example of a microwave radio link that crosses over/near the wind farm site boundary modelled in radio planning software.

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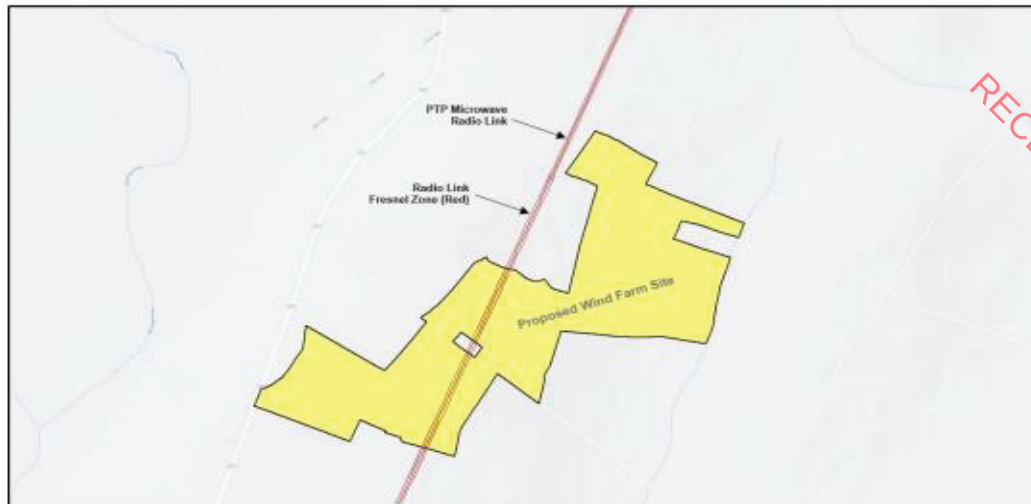


Figure 14-1 Example of microwave radio link crossing over/near the proposed wind farm site boundary modelled in radio planning software

13.1.4 Report Generation

The final stage of the communications impact study process is to collate the data and present the findings & analysis into a report for submission. Results from the telecom operator consultations and desktop survey analysis indicate that there are ten radio links that pass over the proposed project.

13.2 Potential Interactions

The interactions of the proposed turbine layout on the existing Telecom Operator radio links are listed in the Table 14-1. As can be seen from the table below, there are four radio links that would be impacted by the proposed turbine layout.

In order to offset the impact of the proposed project, mitigation measures will be deployed which will include the use of an existing Telecom Mast and constructing a new relay mast as part of the proposed project to mitigate any potential impacts on the existing telecommunication links.

Table 14-1 Potential Interactions of proposed Development on Telecom Operator Radio Links

Operator	Radio Link Description	Impact of Wind Farm	Mitigation Measures
Eir	PTP link from Ballyfeeny to Edercloon	No impacts.	N.A
Three Ireland	PTP link from Mullaghmacormick to Sliabh Bawn.	Impacted by T01 & T02	Relay the radio link via an existing Telecoms Mast-Site (e.g. the existing mast-site at Lissavaddy).
	PTP link from Ballyfeeny to Ballyleague.	No impacts.	N.A
	PTP link from Ballyfeeny to Lissawaddy.	No impacts.	N.A
	PTP link from Ballyfeeny to Strokestown.	No impacts.	N.A
Vodafone Ireland	PTP link from Mullaghmacormick to Sliabh Bawn.	Impacted by T01 & T02	Relay the radio link via an existing Telecoms Mast-Site (e.g. the existing mast-site at Lissavaddy).
	PTP link from Sliabh Bawn to Ballyfeeny.	Impacted by T01	Route the Vodafone service between Sliabh Bawn and Ballyfeeny via a new telecoms mast located within the proposed wind farm site boundary.
	PTP link from Ballyfeeny to Lissawaddy.	No impacts.	N.A
	PTP link from Ballyfeeny to Roosky.	Impacted by T02, T04 & T05	Route the Vodafone service between Ballyfeeny and Roosky via a new telecoms mast located within the wind farm site boundary.
	PTP link from Ballyfeeny to Edercloon.	No impacts.	N.A

13.3 Waste Management

The assessment of the impacts of the proposed project from the generation of waste materials, will be carried out taking into account the methodology specified in relevant guidance documents, along with an extensive document review to assist in identifying current and future requirements for waste management including national and regional waste policy, waste strategies, management plans, legislative requirements and relevant reports.

The following sources will be consulted to identify, current and potential future requirements for waste management:

- Roscommon County Development Plan (RCDP) 2022-2028;
- Connaught – Ulster Region, Waste Management Plan (CURWMP) 2015 - 2021;
- National Waste Reports various dates from 1998-2012, Environmental Protection Agency (EPA), 2014;
- Ireland – Progress towards EU Waste Targets (National Statistics), EPA, 2023;

- A Resource Opportunity, Waste Management Policy in Ireland, Department of Environment Community and Local Government (DoECLG), 2012;
- Taking Stock and Moving Forward, DoECLG, 2004; and,
- Preventing and Recycling Waste – Delivering Change, DoECLG, 2002.
- Environmental Protection Agency (EPA) (2021) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects;
- Provisions of the Waste Management Acts, 1996-2011 and associated Regulations;
- Construction Industry Research and Information Association (CIRIA) document 133 Waste Minimisation in Construction;
- National Construction & Demolition Waste Council (NCDWC) 2006 Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects;

13.4 Potential Waste Management Interactions

13.4.1 Potential Construction Phase Interactions

Potential Interactions during the construction phase may include:

- Large quantities of soil waste,
- General construction wastes

13.4.2 Potential Operational Phase Interactions

Operation of a wind farm generates minimal waste materials. There will be a requirement for some materials in small quantities associated with maintenance and upkeep of the turbines. In addition, the operational of the substation will generate small quantities of waste.

The construction waste management plan will outline the management requirements for waste associated with the project including segregation any temporary storage and disposal.

This will form the basis of the mitigation and controls for the operational waste management plan required for the operational phase.

13.5 EIAR Scope

The EIAR Scope for Material Assets will outline the appropriate engagement and guidelines which will need to be adhered to ensure minimal impacts from the proposed project. Telecoms and Aviation will have a separate subsection reporting the studies undertaken.

Traffic and Surface Water Management will be assessed under separate chapters but will consider cross reference as appropriate between chapters and considered collectively under cumulative effects.

The assessment will cover the potential Interactions of waste generation, describe the existing conditions and the likely potential Interactions associated with the construction of the proposed project. There is minimal waste generation associated with the operational phase, however this will also be assessed for the proposed project.

The impact assessment process will involve:

- Review of current and future waste plans and/or requirements relevant to the proposed project i.e. national and regional waste management policies and objectives;
- Describing the waste streams arising from the construction phase of the proposed project;
- Review of any waste materials expected to be generated during the construction phase;
- Review of proposals relating to waste (material) acceptance, inspection, management,
- Identifying and characterising the significance of any Potential Interactions;
- Incorporating measures to avoid and mitigate (reduce) any significant effects (where they occur); and
- Assessing the significance of any residual effects after mitigation.

The controls and mitigation identified will inform the Waste Management Plan associated with the CEMP.

14. Cumulative Impacts and Interaction of the Foregoing

The interaction of environmental aspects is an important factor which will be considered in the full evaluation of the environmental impacts associated with the proposed project. While all environmental factors are inter-related to some extent, the significant interactions and interdependencies will be taken into consideration by the EIAR when preparing the assessments and impacts. A planning and desktop review of all publicly available resources will be completed to assess cumulative effects.

15. Consultation and Engagement

The Developer and Rowan have developed a Stakeholder Consultation Plan and have a phased engagement process and consultation strategy for the assessment.

Phase 1- at the current stage, the Developer are engaging with landowners potentially needed for the project and potential community partners. General project description has been shared through the development of the layout, and the Developer has a land agent onsite who has been engaging with landowners, those needed for site access and access for baseline surveys as well as potential stakeholders within the proposed project footprint.

Phase 2- as the baseline surveys have been conducted and the layout advances, Rowan have prepared this Scoping Report as the basis for statutory consultation with Roscommon County Council, statutory and non-statutory consultees.

Phase 3 – A community engagement program will be initiated in the geographical area surrounding the site of the proposed wind farm. Through this program, the Developer will present and discuss all aspects of the project with residents in the project's vicinity. Feedback received as part of the scoping process and the community engagement program will help inform the focus of the EIAR.

Phase 4 –Site Notices and newspaper notices will be issued in advance of the planning application being submitted to Roscommon County Council.

This phase approach provides a plan and framework for regulatory, consultee and community feedback for inclusion into the planning process.

16. Scoping Consultation

It is proposed that this scoping report will be used as a framework to facilitate statutory consultees to provide feedback into the EIA process. This report is intended to give an outline of the Development to allow consultees to assess any potential effects on those matters identified above so that the design of the proposed development can take these into account during the iterative design process.

Rowan Engineering Consultants on behalf of the Developer are inviting submissions on this EIA Scoping Report. Please:

- That the proposed approach to the application and EIAR is appropriate
- Provide comment on the issues and methodologies outlined in this report
- The appropriateness of surveys for biodiversity and ornithology.
- The approach to hydrology & hydrogeology
- Advise if there are other developments planned or existing in the area that should be considered in the cumulative impact assessment of the EIAR.
- Consider the baseline and analysis as proposed and respond as to whether this satisfies the requirements for basis of the EIA assessment.

Comments on the proposed scope from consultees are specifically invited on the following sections of the EIAR:

- Content to be contained in the EIAR.
- Assessment methods.
- Additional data and sources.

The consultation period Scoping consultation period will be **four weeks** from issue of the Scoping to Statutory Consultees. All relevant submissions on the proposed project and Scoping Report are welcomed.

Submission and responses can be to ballyfeeny.energy@rec.ie or in writing to:

Ballyfeeney Green Energy Project,
Rowan Engineering Consultants,
14, Scurlockstown Business Park,
Trim, Co. Meath,
C15 H008.