TOBIN

Rooaunalaghta Green Energy Project

Appendix 1-2
Informal Scoping Report with sample cover letter

ROOAUNALAGHTA
Green Energy

BUILT ON KNOWLEDGE

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20th May 2026

2RN

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RE: Proposed Rooaunalaghta Green Energy Project, Co. Mayo – Scoping

Dear Sir/Madam,

Rooaunalaghta Green Energy Limited (hereafter referred to as 'RGE') intends to develop Rooaunalaghta Wind Farm, approximately 2.5km southwest of Shrule, Co. Mayo and approximately 3.5km northwest of Headford, Co. Galway. RGE have commenced the process of an Environmental Impact Assessment.

It is proposed that the Rooaunalaghta Wind Farm will be built within lands that are primarily of agricultural land. The wind farm site entrances, layout design and proposed access points through which turbine components and construction related deliveries may be made will be optimised by the design team in consultation with the planning authority and the local community. It is currently proposed that 13 no. wind turbines including grid connection, and all associated infrastructure will be located across the proposed wind farm site.

RGE has engaged a team of technical experts who are in the process of scoping environmental assessments for the proposed project. Please see the enclosed Scoping Document for further information.

We therefore invite you to submit any relevant information that you may hold and/or highlight any issues that you feel should be directed to the project team. Views/comments on the proposed project can be submitted by email, letter or telephone to the contact below as soon as convenient to ensure your views/comments are considered.

Yours sincerely

[redacted]

[redacted]

For and on behalf of TOBIN

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Rooaunalaghta Green Energy Project

EIA Scoping Report



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1. Introduction

1.1 Background

Rooaunalaghta Green Energy Limited (hereafter referred to as 'RGE') intends to seek planning permission to develop a 13 no. turbine wind farm approximately 2.5km to the south west of Shrule, Co. Mayo and approximately 3.5km to the north west of Headford, County Galway (hereafter referred to as 'Rooaunalaghta Wind Farm') and have commenced the process of Environmental Impact Assessment. It is currently proposed that the wind farm will contain thirteen (13) wind turbines, as shown in Figure 1-1 below.

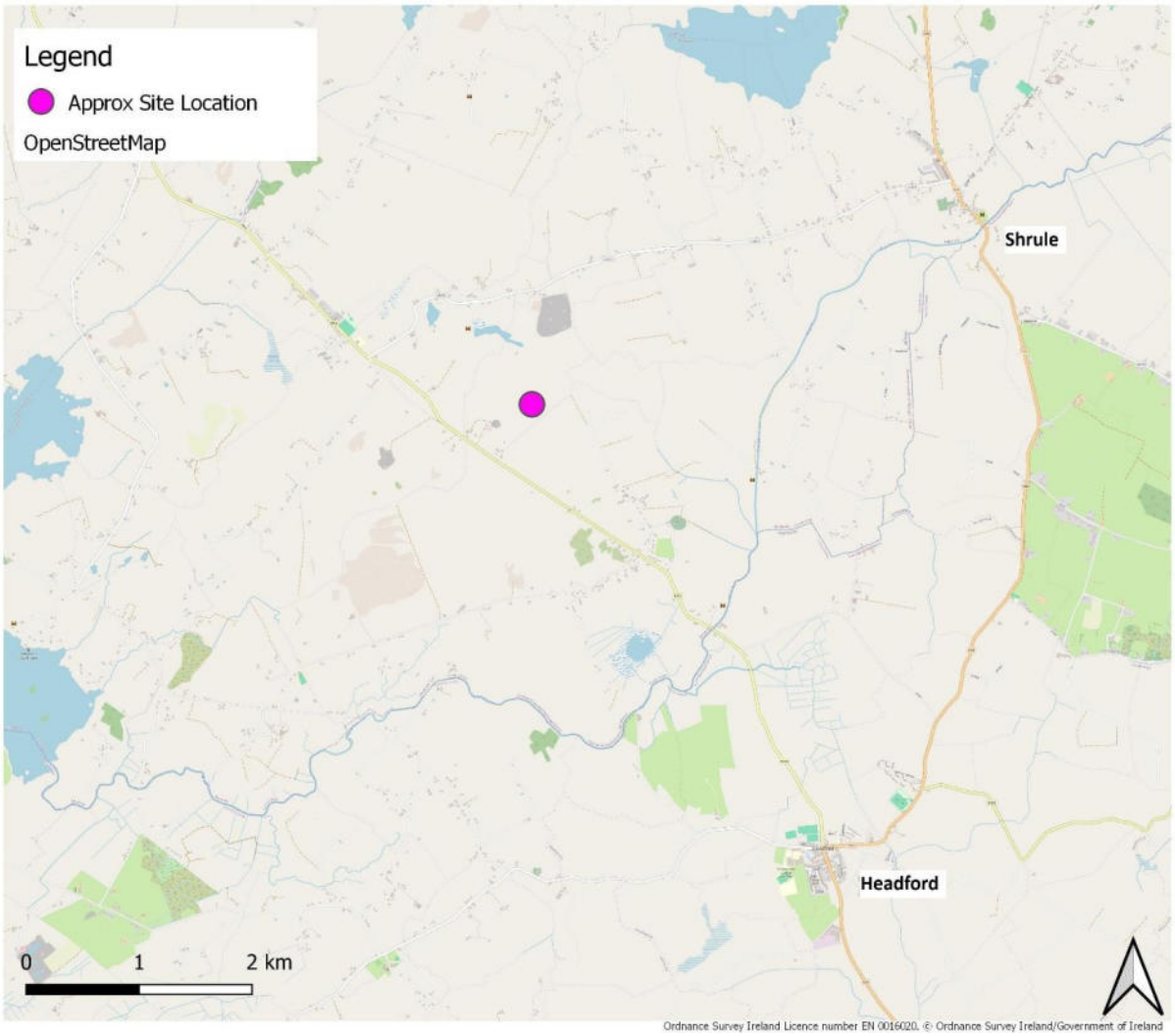


Figure 1-1: Site Location

The proposed development will be assessed in the context of the Renewable Energy Directive III (Directive 2023/2413), also known as RED III, which came into force in November 2023. RED III strengthens the EU-wide renewable energy target and legally designates renewable energy projects as being in the overriding public interest, supporting their permitting except in defined sensitive areas. The assessment will also take account of the transposition of RED III into Irish law through amendments to the Planning and Development Act and Planning and Development Regulations in 2025, including S.I. No. 274 of 2025 and S.I. No. 435 of 2025, as

applicable. In this context, it is also noted that the introduction of mandatory EIA scoping for qualifying renewable energy projects, as provided for under Article 16b of RED III, has been deferred, with the relevant provisions now scheduled to commence on 1 November 2026.

1.2 The Applicant

Rooaunalaghta Green Energy (RGE) Limited, is a subsidiary of Greensource, 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 150 MW of renewable energy projects in Ireland, playing a significant role in further decarbonising the electricity market in this country.

1.3 The Need for Environmental Impact Assessment (EIA)

The Environmental Impact Assessment Directive (Directive 2011/92/EU) (hereafter "EIA Directive") prescribes which activities need to be subjected to Environmental Impact Assessment (EIA). EIA is an assessment of the potential environmental effects of certain projects and activities. The objective of the EIA Directive is to *"ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue, inter alia, of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects on the environment"*.

The obligation to undertake EIA exists for those projects which will likely have a significant effect on the environment. The EIA Directive makes a distinction between projects which are assumed to have a definite significant effect, and those which likely, but not necessarily, have a significant effect. Projects falling under the first category are listed under Annex I to the EIA Directive and always need to be subjected to an assessment. For certain activities under Annex I, a quantitative threshold is provided. For projects falling under the second category, Annex II, Member States have the discretion to determine whether a project shall be made subject to an assessment.

In Ireland, the EIA Directive is transposed into Irish planning legislation in the Planning and Development Acts and Regulations 2000-2022. EIA Directive Annexes I and II are broadly transposed into planning legislation by way of Schedule 5 Parts 1 and 2 of the Planning and Development Regulations, 2001, as amended.

The relevant EIA threshold for wind farms is contained in Schedule 5, Part 2, Class 3(i) which states:

"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"[1].

The proposed wind farm will exceed the above threshold and therefore it is necessary that the planning application for this project is supported by an Environmental Impact Assessment Report (EIAR).

[1] http://www.irishstatutebook.ie/eli/2010/act/30/section/78/enacted/en/html

1.4 Purpose of EIA Scoping

The purpose of the scoping for EIA is to provide a framework for the approach to be taken for the individual specialist's evaluations, to identify environmental topics for which potential significant environmental impacts may arise, and to provide a framework for the consultation process to take place with planning and environmental stakeholders as part of the environmental assessment work. The scoping report also sets out a structure for the preparation of the EIA Report to be prepared and the information required to be included therein.

The European Commission's, "*Environmental Impact Assessment of Projects - Guidance on Scoping*" (2017) notes the benefits of scoping:

- **Identifies key issues to be addressed:** Scoping helps to ensure that the environmental information used for decision-making provides a comprehensive picture of the Project's important effects, including issues of particular concern to the groups and individuals affected.
- **Saves time and money:** Scoping helps focus resources on the important issues for decision-making and avoids wasted effort on issues of little relevance. In addition, it reduces the risk of delays caused by requests for further information after the submission of the planning application and the provision of environmental information.
- **Stimulates early consultation: consultation between the developer and the planning authority** is carried out during Scoping, as well as with environmental authorities and local and regional authorities, other interested parties, and the public.
- **Sets appropriate time and space boundaries:** Scoping aids in effective planning, management, and with resourcing of the EIA Report. It can identify other legislation or regulatory controls that may be relevant to the Project and can provide opportunities for the necessary assessment work, for different control systems, to be undertaken in parallel, thereby avoiding the duplication of effort and costs for all concerned.
- **Helps to identify potential alternatives and mitigation measures:** Scoping should identify potential alternatives to the proposed project as well as mitigation measures that ought to be considered by the Developer.

1.5 EIA Team

RGE has engaged TOBIN to coordinate the Environmental Impact Assessment and prepare the EIAR for the proposed development. The relevant specialists included in the Study Team, who are both experienced and competent in their areas of expertise, are noted here:

- TOBIN staff will provide expertise in relation to Project Direction, Project Management, Planning, EIAR Preparation and Civil Engineering.



- TOBIN staff will provide expertise in the following specialist topics: Population and Human Health, Land, Soils and Geology, Hydrology, Hydrogeology, Flood Risk Assessment and Shadow Flicker.
- Woodrow Environmental Consultants will provide expertise in Biodiversity and Ornithology.
- AWN Consultants will provide expertise in Noise and Vibration; Air Quality and Climate.
- IAC Archaeology will provide expertise in Cultural Heritage and Archaeology.
- Ai Bridges will provide expertise in Telecommunications and Aviation.
- Macro Works will provide expertise in Landscape and Visual impact assessment and production of Photomontages.
- CST Group will provide expertise in Transport Route Assessment and Traffic.
- TLI Group will provide expertise in Electrical Substation and Grid Connection Design.
- Irish Drilling Ltd. will provide expertise in Site Investigation.

1.6 Scoping Report Structure

Individual specialists will undertake their assessments of the environment including evaluation under following topics:

- Population and Human Health
- Biodiversity
- Ornithology
- Land, Soils and Geology
- Hydrology and Hydrogeology
- Air Quality
- Climate
- Noise and Vibration
- Shadow Flicker
- Landscape and Visual Impact
- Cultural Heritage and Archaeology
- Material Assets (including Telecommunications and Aviation)
- Traffic and Transport
- Interaction of the Foregoing

Other chapters to be included in the EIAR are as follows:

- Consideration of Reasonable Alternatives
- Policy, Planning and Development Context



1.7 Project Description

The proposed project comprises of a wind farm with 13 no. wind turbines and all associated infrastructure including turbine foundations, hardstanding areas, borrow pits, access tracks, an electrical control station (RMU & Switchgear) within the proposed wind farm site and a grid connection to a new 110kV substation outside the proposed wind farm site. The project may also require localised strengthening and widening works along the public road network to facilitate the delivery of turbine components.

A Project Description chapter will be included in the EIAR describing the design and construction of the development.

1.8 Site Location

The site is located approximately 2.5km southwest of Shrule, Co. Mayo and approximately 3.5km northwest of Headford, Co. Galway (See Figure 1-1). The lands of the wind farm site are primarily comprised of agricultural fields bounded by stone walls, hedgerows and treelines with pockets of scrub and woodland in the eastern half of the site.

The site is located on either side of the R334 Regional Road, which runs in a northwest-southeast direction connecting Headford and Ballinrobe. The area surrounding the site can be described as rural with a mostly dispersed settlement type (though some residential clustering at Moyne village). The nearest settlements are Moyne village, approximately 1.1km to the southeast of the site and Glencorrib, approximately 1.5km to the northwest, both along the R334. Glencorrib contains a church, national school and other amenities.

1.9 The Proposed Development

1.9.1 Turbine Locations & Internal Access

The exact number, siting and layout of the proposed turbines will be finalised as part of the design and EIA process, in due consultation with all relevant stakeholders.

In addition, the internal access route layout, which is the arrangement of tracks within the wind farm site, types and construction methodologies will be designed and the location of the proposed entrance(s) to the wind farm site will be confirmed.

It is currently envisaged that the entrances to the wind farm will be from either side of the R334 between Glencorrib and Moyne. The wind farm layout design and potential access points through which turbine components and construction related deliveries may be made will be optimised by the design team in consultation with the planning authority and the local community. For the current proposed layout, see Figure: 1- 2.



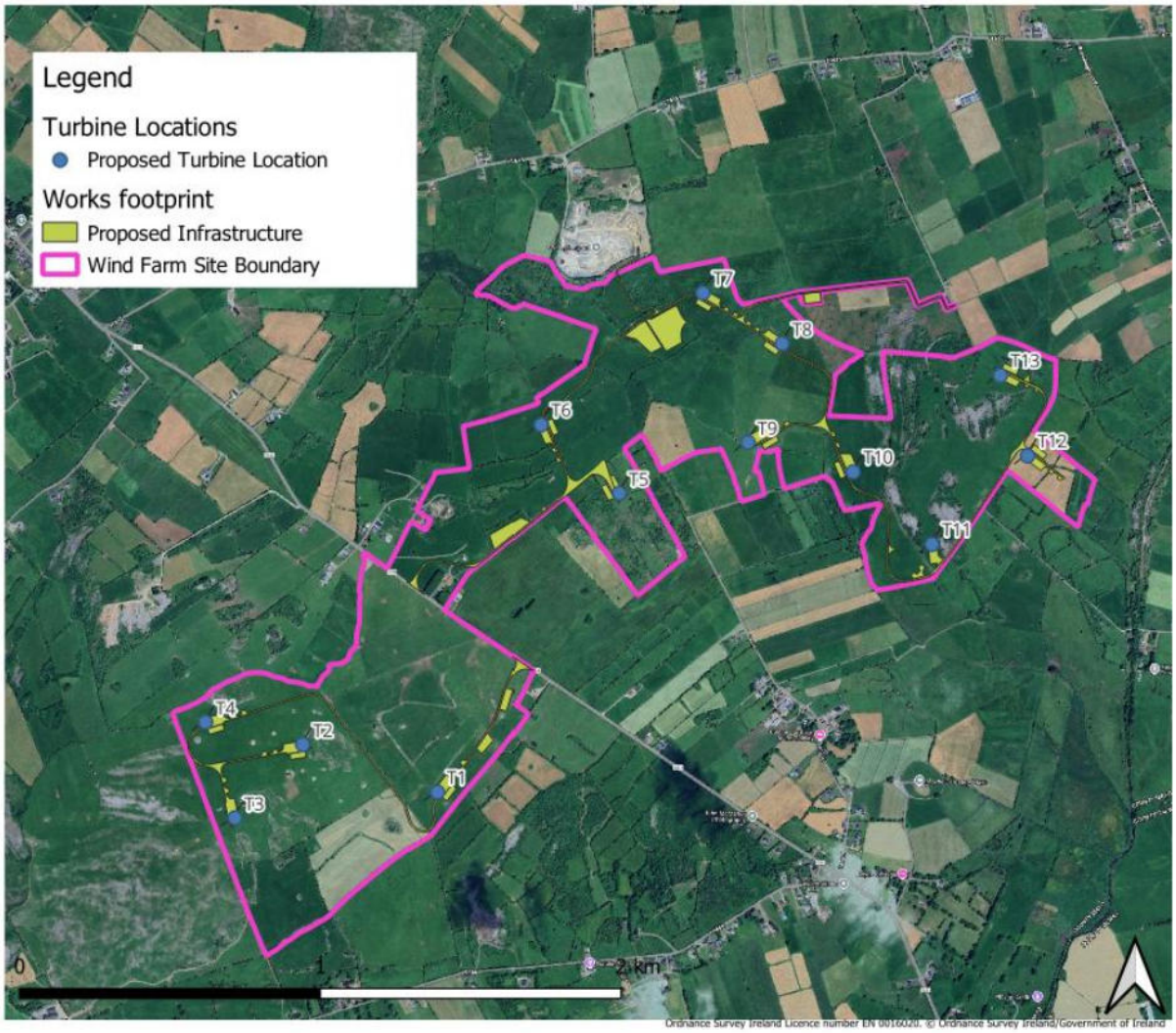


Figure: 1- 2 Proposed Layout

1.9.2 Wind Turbine Specifications

The exact megawatt output and design of the proposed turbines, subject to completion of the statutory processes, will be subject to a competitive tender and will be detailed by the turbine manufacturer on award of the contract. However, the proposed turbines will be the typical three bladed, horizontal axis type.

Details of the hub height, rotor diameter, tip height and the overall electrical output will be decided during the design and EIA process. It is currently envisaged that the maximum tip height will be 150 metres (m). Based on turbines available at the scale currently under consideration, the total output from the wind farm could be in the region of 58.5 MW.

1.9.3 Mechanical & Electrical Equipment

The main mechanical and electrical components associated with the development are likely to include the following:

- Turbine components (tower sections, nacelle, hub, rotor blades);
- On-site control room;

- Electrical cable network;
- SCADA/communications cabling
- 110kV substation outside the proposed wind farm site.

1.9.4 Grid Connection

- Currently there are a number of grid connection options (See Figure 1-3) under consideration but the preferred option will likely consist of a grid connection cable and a new 110kV substation construction in close proximity to the existing Dalton – Cashla 110kV overhead line. There are a number of route options under consideration, and the preferred route is not yet decided. It is likely that three grid route options and a 110kV substation will be assessed as reasonable alternatives in the EIAR and that one of grid route options and the 110kV substation will form part of the planning application. The three GCR options, all located externally from the wind farm site, to be assessed as part of the proposed project are;
  - Grid Option 1 is a 33kV underground cable route (UGC) approx. 8.8km long to a proposed 110kV loop-in substation in Killamanagh, Co. Galway and connecting to the overhead line (OHL) at that location, this will be included in the proposed development and will form part of the planning application.
  - Grid Option 2 is a 33kV underground cable route (UGC) approx. 8.8km long to a proposed 110kV substation in Killamanagh, Co. Galway, as per Grid Option 1. The substation for Grid Option 2 will be a tail-fed design, with a 3.3km 110kV connection to another substation in the townland of Corrilaun, Co. Galway which is currently awaiting a planning decision.
  - Grid Option 3 is for a 33kV private underground cable (UGC) approx. 7.1km to the substation in the townland of Corrilaun, Co. Galway which is currently awaiting a planning decision.



Figure 1- 3: Proposed Grid Connection Route options

1.9.5 Decommissioning

The proposed turbines will have a design lifetime of approximately 35 years without replacement of major components. In certain circumstances, the developer may wish to replace turbines prior to the end of the design lifetime. Such a decision would be made on the merits of economic and technical factors at the time of assessment and undertaken in consultation with the local authorities.

Turbine design renders the decommissioning process as a straightforward process. In the decommissioning phase, cranes disassemble each turbine section and remove from the site.

Site materials will be recycled where practicable or disposed of in accordance with current waste legislation and best practice guidelines. Based on current commodity prices, principally steel and copper, material returns achieved through recycling may exceed current financial costs associated with site decommissioning.

Decommissioning activities are typically similar to construction activities, having similar type risks and sensitive receptors associated with them. The potential impacts of decommissioning activities will be assessed accordingly in the EIAR.

1.10 Cumulative Assessment

A cumulative assessment considering existing, permitted and proposed (in the planning system) future plans and projects will be undertaken which will include the wind farms located in the

area. An extensive list to include wind farms and other large (non-wind) projects will be compiled and will be considered in the final EIAR assessment.

In addition, other smaller developments such as agricultural development, quarry sites, residential developments (single houses or larger) and other developments which have the potential to give rise to cumulative effects will be considered in the EIAR.

Subsequent sections of this report will consider cumulative effects taking into consideration, all developments in the area, unless where specific considerations of cumulative effects is required.

2. Environmental Impact Assessment

2.1 Project Summary

In the case of a wind farm development, the final project which will be subject to a planning application will have undergone a number of iterations during the EIA, including changes to design proposals, numbers of proposed turbines and turbine layouts.

The following EIA guidance documents will be followed during the process:

- Draft Advice Notes on Preparing Environmental Impact Statements (EPA, September 2015);
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, May 2022); and
- Guidelines for Planning Authorities and An Coimisiún Pleanála on carrying out Environmental Impact Assessment (DoHLGH, 2018).

In addition to the above, the EIAR will be prepared with regard to the "Wind Energy Development Guidelines for Planning Authorities", Department of Housing, Local Government and Heritage (2006) and the "Draft Revised Wind Energy Development Guidelines", Department of Housing, Planning and Local Government (December 2019).

A Screening for Appropriate Assessment (AA) will be prepared for the project proposed wind farm. The purpose of the report will be to inform the Planning Authority in its undertaking of an 'Appropriate Assessment' of the project, as required under Article 6(3) of the EU Habitats Directive (92/43/EC). This is an assessment of the potential for significant or adverse effects resulting from the project, both individually and in-combination with other activities, plans and projects, on European Site(s) as designated under the EU Habitats Directive and the conservation objectives for their qualifying species and habitats. The initial screening assessment will determine whether the preparation of a Stage 2 Natura Impact Statement (NIS) is required to support the planning application.

2.2 The Scoping Process

This report will form the basis for the scoping process to be undertaken by RGE with the Planning Authority and the Statutory Bodies identified for consultation. It is noted that the introduction of mandatory EIA scoping for qualifying renewable energy projects, as provided for under Article 16b of RED III, has been deferred, with the relevant provisions now scheduled to commence on 1 November 2026. It is anticipated that the project will be submitted prior to the mandatory provisions coming into effect.

The scoping process will provide all relevant planning 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 potential significant effects might be and what sub-topics the EIAR should focus upon.

2.3 Baseline Assessment

Following an introduction to the EIAR, the following information will also be presented:



- **Description of the Existing Environment** – a detailed description of the existing environment to allow the baseline conditions to be understood and existing areas of sensitivity to be recorded (as per the 2022 EPA EIAR Guidelines).
- **Description of the Proposed Development** - including site layout and infrastructural details, construction procedures and the materials required, the operational and maintenance phases in addition to the decommissioning and rehabilitation phases.
- **Description of Reasonable Alternatives Considered** – a detailed assessment of alternatives considered by the developer in terms of the selection of site location and site layout and design.

2.4 Assessment Methodology

In the case of each of the environmental topics, it is proposed that the following elements will be evaluated, and that the format of the EIAR will follow the standard methodology and be presented in accordance with the above-mentioned legislation and guidelines. Individual chapter topics are discussed further below in this section. The proposed development will be assessed and described within each environmental topic in terms of:

- **Introduction** - includes a background to the assessment and describes the study methodology employed in carrying out the assessment.
- **Existing Environment** – Describes and assesses the existing environment in the context of the relevant environmental categories. This section also takes account of any other proposed and existing developments in the vicinity.
- **Potential Effects** - Provides the description of the potential specific direct, indirect and cumulative effects, associated with the development. This is done with reference to the existing environment and characteristics of the proposed development, while also referring to the magnitude, duration, consequences and significance of the effect associated with the construction and operation and decommissioning of the development. This section also considers cumulative effects with other proposed or permitted developments.
- **Mitigation Measures** - A description of any remedial, or mitigation measures that are either practicable or reasonable having regard to the potential effects. It will also outline, where relevant, monitoring proposals to be carried out should consent be granted in order to demonstrate that the project in practice conforms to the predictions made.
- **Residual Effects** - Provides the description and assessment of any predicted residual effects associated with the proposed project on the surrounding environment.
- **Conclusion** – Provides a summary of the salient points of the assessment chapter.

2.5 Assessment of Effects

As stated in the 2022 EPA EIAR Guidelines, an assessment of the likely significant effects of a proposed development is a statutory requirement of the EIAR process. The criteria for the presentation of the characteristics of potential significant effects will be described with



reference to the magnitude, spatial extent, nature, complexity, probability, duration, frequency, reversibility, cumulative effect and transboundary nature (if applicable) of the effect.

The classification and description of effects in the EIAR for the proposed development will generally follow the terms provided in Table 3.4 of the 2022 EPA EIAR Guidelines referenced above (and excerpted in Table 2-1 for information purposes).

According to the Guidelines, the relevant terms listed in the table below can be used to consistently describe specific effects, but all categories of terms do not need to be used for every effect.

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

Table 2-1: Description of Effects (Table 3.4 of the EPA EIAR Guidelines (2022))

Quality of Effects It is important to inform the non-specialist reader whether an effect is positive, negative or neutral.	**Positive Effects** A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).
	Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.
	Negative/adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem, or damaging health or property or by causing nuisance).
Describing the Significance of Effects 'Significance' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see *Determining Significance*).	**Imperceptible** An effect capable of measurement but without significant consequences.
	Not significant An effect which causes noticeable changes in the character of the environment but without significant consequences.
	Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
	Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
	Significant Effects An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
	Very Significant An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
	Profound Effects An effect which obliterates sensitive characteristics.
Describing the Extent and Context of Effects	**Extent** Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.

Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced.	**Context** Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)
Describing the Probability of Effects Descriptions of effects should establish how likely it is that the predicted effects will occur – so that the CA can take a view of the balance of risk over advantage when making a decision.	**Likely Effects** The effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented.
	Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented.
Describing the Duration and Frequency of Effects 'Duration' is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful.	**Momentary Effects** Effects lasting from seconds to minutes.
	Brief Effects Effects lasting less than a day.
	Temporary Effects Effects lasting less than a year.
	Short-term Effects Effects lasting one to seven years.
	Medium-term Effects Effects lasting seven to fifteen years.
	Long-term Effects Effects lasting fifteen to sixty years.
	Permanent Effects Effects lasting over sixty years.
	Reversible Effects Effects that can be undone, for example through remediation or restoration.

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



2.6 Potential Mitigation

The strategies for identification of appropriate Mitigation Measures, as detailed in the EPA EIAR Guidelines (2022), will be followed in the preparation of the EIAR for the proposed development.

There are four established strategies for effects mitigation - avoidance, prevention, reduction and remedy/offsetting. As noted above, following the iteration of the design and EIA process, and following implementation of any design mitigation, the description of any remedial, or mitigation measures that have been incorporated into the design will be included to offset or minimise identified potential adverse impacts.

In accordance with the guidelines, these measures can mitigate impacts:

- *By Avoidance*

  When no impact is caused (often through consideration of alternatives).

- *By Prevention*

  When a potential impact is prevented by a measure to avoid the possibility of the impact occurring.

- *By Reduction*

  When an impact is lessened.

- *By Remedy/Offsetting*

  When an adverse impact is resolved by a remedial action or balanced by a positive impact.

2.7 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) will also be prepared which will set out the details of proposed construction compounds, construction methodologies, environmental mitigation measures and proposed reinstatement measures. The CEMP will incorporate the relevant construction phase mitigation measures which will have been integrated into the project.

2.8 Non-Technical Summary

A Non-Technical Summary (NTS) will be prepared which will provide an overview and summary of the main EIAR using non-technical language. It is a standalone document which presents a clear and concise summary of the existing environment, characteristics of the proposed development, a clear outline of the potential significant effects which could result from the proposed project and mitigation measures adopted into the design of the development to minimise effects on the surrounding environment.

3. Reasonable Alternatives

As set out in the EIA Directive, which is transposed into Irish law by the Planning and Development Act 2000, as amended and the Planning and Development Regulations 2001, the EIAR is required to provide a description of the reasonable alternatives considered by the applicant, 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.

3.1 Alternative Sites

In respect of consideration of alternative sites, the EIAR will set out the reasonable alternative sites available to the applicant. Details on the assessments carried out to identify the proposed site location as appropriate for this project will be provided.

3.2 Alternative 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 comprehensive site surveys and ground investigations.

3.3 Alternative Technology/ Alternative Processes

The proposed wind farm will support European and National policy in decarbonising electricity generation and contribute to Ireland's target to generate 80% of the country's electricity from renewable sources by 2030. 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 project will include alternative technologies and processes in its consideration, for example foundation design (piled or gravity), cable crossings (open trench or Horizontal Directional Drilling (HDD)).

4. Policy, Planning and Development Context

The proposed development has potential to accommodate up to 13 no. wind turbines with a total potential electrical output of approximately 58.5 MW. As the number of turbines and output is currently above the threshold for Strategic Infrastructure (SID) and the project represents a strategic contribution to Ireland's legally binding renewable energy targets under Directive (EU) 2023/2413 (RED III). In accordance with the Planning and Development Act, as amended, ACP will ultimately determine whether the proposed development constitutes Strategic Infrastructure Development having regard to the criteria set out in the Seventh Schedule of the Act. It is anticipated that planning consent will be sought from An Coimisiún Pleanála (ACP). Pre-application consultation will be undertaken with ACP as well as with Mayo County Council and Galway County Council.

Within the EIAR, the planning assessment will include a compliance review of relevant European, national and local planning policy documentation, planning legislation, strategies and plans and set the local context of the project.

4.1 EU and National Policy

At a European level, this will include:

- The Paris Agreement 2015;
- The European Green Deal 2019;
- Europe 2030 Climate and Energy Framework;
- Energy Roadmap 2050;
- Renewable Energy Directive 2009/28/EC & Recast Directive 2018/2001/EU; and
- Council Regulation (EU) 2022/1854 (EU Emergency Regulations)

At a national level this will include:

- Climate Action and Low Carbon Development Act 2015;
- Climate Action and Low Carbon Development (Amendment) Act 2021;
- Climate Action Plan 2025;
- National Energy and Climate Plan (NECP) 2021-2030;
- Ireland 2040 - Our Plan (National Planning Framework) [2018];
- National Development Plan 2021-2030;
- Government White Paper – Ireland's Transition to a Low Carbon Energy Future 2015-2030;
- National Energy Security in Ireland to 2030;
- National Energy Security Framework 2022;
- National Wind Energy Guidance Documents including:

- Wind Energy Development Guidelines, Department of Housing, Local Government and Heritage, 2006;
- Draft Revised Wind Energy Development Guidelines, Department of Housing, Local Government and Heritage, December 2019;
- Code of Practice for Wind Energy Development in Ireland on Guidelines for Community Engagement (DCCAE, 2016).

4.1.1 RED III Directive

The proposed development is covered by the provisions of the Renewable Energy Directive III (Directive 2023/2413), and the planning application is subject to a completeness check under section 37JA of the Planning and Development Act, 2000, as amended by the European Union (Planning and Development) (Renewable Energy) Regulations 2025.

The EU RED III Directive (EU/2023/2413) entered into force on 20 November 2023 and has been transposed into Irish legislation by way of European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. 274 of 2025), as amended by S.I. No. 435 of 2025. In line with S.I. No. 185 of 2026, amending Regulation 38(2) of the European Union, mandatory EIA scoping for renewable projects that fall within Article 16b of the Directive, has been changed from 1 May 2026 to 1 November 2026. It is anticipated that the proposed development will fall under the scope of these regulations and will be considered a RED III development and will be submitted prior to 1 November 2026. Pre-application consultation request process is understood to remain as it currently operates under the provisions of the Planning and Development Act, 2000 as amended.

Section 37B (3) of the Act provides that:

> "In any consultations under subsection (1), the Commission may give advice to the prospective applicant regarding the proposed application and, in particular, regarding—
>
> (a) whether the proposed development would, if carried out, fall within one or more of paragraphs (a) to (c) of section 37A (2),
>
> (b) the procedures involved in making a planning application and in considering such an application, and
>
> (c) what considerations, related to proper planning and sustainable development or the environment, may, in the opinion of the Commission, have a bearing on its decision in relation to the application"

The proposed development is explicitly covered by the provisions of RED III, which mandates accelerated permitting and prioritisation of renewable energy infrastructure. The proposed development will contribute significantly to Ireland's renewable electricity generation, displacing fossil fuel-based generation and reducing greenhouse gas (GHG) emissions.

Under RED III and its Irish transposing regulations (European Union (Planning and Development) (Renewable Energy) Regulations 2025), renewable energy projects are subject to mandatory permitting timelines and mandatory scoping for EIARs for applications made from 1 November 2026 onwards. The directive obliges competent authorities to ensure

proportionate environmental assessments and streamlined decision-making, particularly for projects outside sensitive ecological areas.

4.2 Regional Policy

At a regional level, the assessment will consider the Regional Spatial and Economic Strategy (RSES) for the Northern and Western Region, which covers eight counties – Galway, Roscommon, Leitrim, Sligo, Donegal, Monaghan, Mayo and Cavan. The Northern and Western Regional Assembly (NWRA) agreed to make the Regional Spatial and Economic Strategy (RSES) 2020 – 2032 in January 2020. The NWRA are currently consulting on the future spatial and economic development of the Northern and Western Region. The primary statutory objective of the RSES is to support implementation of the National Planning Framework and National Development Plan. Policies in the RSES which are directly relevant to the proposed wind farm include:

- **Regional Policy Objective 4.16** - The NWRA shall co-ordinate the identification of potential renewable energy sites of scale in collaboration with Local Authorities and other stakeholders within 3 years of the adoption of the RSES. The identification of such sites (which may extend to include energy storage solutions) will be based on numerous site selection criteria including environmental matters, and potential grid connections.
- **Regional Policy Objective 4.17**- To position the region to avail of the emerging global market in renewable energy by:
    i. Stimulating the development and deployment of the most advantageous renewable energy systems.
    ii. Supporting research and innovation.
    iii. Encouraging skills development and transferability.
    iv. Raising awareness and public understanding of renewable energy, encourage market opportunities for the renewable energy industry to promote the development and growth of renewable energy businesses.
    v. Encourage the development of the transmission and distribution grids to facilitate the development of renewable energy projects and the effective utilisation of the energy generated from renewable sources having regard to the future potential of the region over the lifetime of the Strategy and beyond.
- **Regional Policy Objective 4.18** - Support the development of secure, reliable and safe supplies of renewable energy, to maximise their value, maintain the inward investment, support indigenous industry and create jobs.

- **Regional Policy Objective 5.1** - The Assembly will support the preparation through Climate Change Action Plans (CARO) and Local Authorities the preparation and implementation of Local Climate Strategies which will, inter alia, address vulnerability to climate risks and provide prioritised actions in accordance with the guiding principles of the National Adaptation Framework.

Section 8.2 of the RSES relates to the electrical grid network and again reinforces the strengths of the region in relation to renewable energy resources. It notes that the existing transmission network is predominantly lower capacity 110kV with very little higher capacity of 220kV and 400kV transmission infrastructure. Developing the grid will enable the transmission system to safely accommodate more diverse power flows from surplus regional generation and also to facilitate future growth in electricity demand, particularly from wind. The RSES states that these developments will strengthen the network for all electricity users, and in doing so will improve the security and quality of supply. This is particularly important if the region is to attract high technology industries that depend on a reliable, high-quality, electricity supply. The following relevant regional policy objectives are:

- **Regional Policy Objective 8.1** - The Assembly support the development of a safe, secure and reliable electricity network, and the transition towards a low carbon economy centred on energy efficiency and the growth projects outlined and described in this strategy.
- **Regional Policy Objective 8.3** - The Assembly support the necessary integration of the transmission network requirements to allow linkages with renewable energy proposals at all levels to the electricity transmission grid in a sustainable and timely manner.
- **Regional Policy Objective 8.4** - That reinforcements and new electricity transmission infrastructure are put in place and their provision is supported, to ensure the energy needs of future population and economic expansion within designated growth areas and across the Region can be delivered in a sustainable and timely manner and that capacity is available at local and regional scale to meet future needs. Ensure that development minimises impacts on designated areas.

4.3 Local policy

4.3.1 Mayo County Development Plan 2022-2028

The Mayo County Development Plan 2022-2028, (hereafter referred to as "the Plan") was adopted by Mayo County Council on the 29th June 2022 and came into effect on the 10th August 2022. The Plan establishes policies and objectives for the proper planning and sustainable development of County Mayo and is aligned with the NWRA RSES, to give effect to National Strategic Outcomes and the National Climate Action Plan. Chapter 11 of the Plan provides Climate Action & Renewable Energy policy with the stated strategic aim:

> *"to transition to a low carbon and climate resilient county, with an emphasis on reduction in energy demand and greenhouse gas emissions, through a combination of effective mitigation and adaptation responses to climate change; in addition to maximising the opportunities to become a national leader in renewable energy generation, whilst increasing the resilience of our Natural and Cultural Capital to climate change by planning and implementing appropriate adaptation measures"*

The Plan sets a minimum target of 600MW of renewable energy to be delivered across Mayo County over the Plan period. The Plan considers this target to be achievable but may need to be revised over the lifetime of the Plan to ensure alignment with the Northern and Western Regional Assembly's forthcoming Renewable Energy Strategy.

The Plan further recognises the importance of onshore wind energy as a renewable energy source with the Plan stating that it will "endeavour to continue to facilitate wind energy projects that accord with the Mayo RES [Renewable Energy Strategy], the Landscape Appraisal of County Mayo and the relevant Section 28 ministerial guidelines.

The following renewable energy policies and objectives are provided under the Plan in support of the proposed development:

- REP-1: To support Ireland's renewable energy commitments outlined in national policy by facilitating the development and exploitation of a range of renewable energy sources at suitable locations within the county, where such development does not have a negative impact on the surrounding environment (including water quality), landscape, biodiversity or local amenities to ensure the long-term sustainable growth of the county.
- REP-3: To actively encourage and support the sustainable development, renewal and maintenance of energy generation infrastructure in order to maintain a secure energy supply, while protecting the landscape, archaeological and built heritage and having regard to the provisions of the Habitats Directive.
- REP-4: To ensure that developers of proposed large-scale renewable energy projects carry out community consultation in accordance with best practice and commence the consultation at the initiation of project planning.
- REP-5: To promote the use of efficient energy storage systems and infrastructure that supports energy efficiency and renewable energy system optimization, subject to the proper planning and sustainable development of the area and consideration of environmental and ecological sensitivities.
- REP-7: To promote the harnessing of wind energy to contribute toward decarbonising County Mayo, including new emerging by-product markets.
- REO-1: To co-operate with the Northern and Western Regional Assembly in identifying Strategic Energy Zones as areas suitable for larger, energy generating projects, community and micro energy production, whilst ensuring environmental constraints and a regional landscape strategy are considered.
- RE0-3: To encourage and facilitate, where possible, the production of energy from established and emerging renewable technologies.
- REO-6: To ensure all renewable energy proposal comply with the provisions of the Mayo County Council Renewable Energy Strategy 2011-2022 (or as updated).
- REO-8 To encourage the development of wind energy, in accordance with Government policy, and having regard to the Landscape Appraisal of County Mayo and the Wind Energy Development Guidelines (2006) and Mayo Renewable Energy Strategy, or any revisions there of or future guidelines, and ensure consistency with the provisions of RPO 4.16 and RPO 5.2(b) of the RSES (2020-2032).

Renewable Energy Strategy for County Mayo 2011-2020 The Renewable Energy Strategy (Strategy) has been prepared for County Mayo in the context of EU and national renewable energy targets. The Strategy is underpinned by Strategic Environmental Assessment (SEA) and Habitats Directive Assessment (HDA). The SEA has evaluated five potential strategy options and their effects on the environment and designated sites, including Natura 2000 sites (European Sites). The HDA assessed the effect the Strategy would have on the conservation objectives of any Natura sites in the County and within 15km of the County boundary. According to the Strategy Mayo has been identified as having one of the best wind regimes in Europe 17, and notes that,

"in order to achieve the national renewable energy targets and the objectives of the Strategy, improvements and the provision of new infrastructure to the electricity transmission network in Mayo is considered imperative for all renewable energy technologies."

4.3.1.1 *Site Location*

The site is currently identified in the Strategy as a '**Tier 2 (Open for consideration)**' location, Open for consideration identifies areas which may be considered for wind farms or small clusters of wind turbines but where the visual impact on sensitive or vulnerable landscapes, listed highly scenic routes, scenic routes, scenic viewing points and scenic routes will be the principal consideration.

5. Population and Human Health

5.1 Introduction

This chapter will assess a number of topics under the umbrella of Population and Human Health, including (but not limited to): Population; Human Health, Health and Safety; Socio-economics; Land Use; Tourism/Recreation and Amenities. A review of the most recent Census data (2022) will be completed. The existing local population will be described and the projected change in the population, if any, will be assessed. This section will address, in particular, the effects of the proposed wind farm on nuisance and residential amenities in the surrounding area.

Any impacts on recreational activities as a result of the wind farm will also be considered. In addition, the positive economic impacts will be examined, as employment will be created during the construction an operational phase of the wind farm. The wind farm will also generate a community benefit fund and create investment opportunities for the local community.

This section will also consider public access and adjacent landowners/dwellings. The Human Health assessment will be prepared in accordance with the relevant 2022 EPA EIAR Guidelines as detailed in Section 5.4. Aspects examined in this section of the chapter will primarily relate to impacts from the wind farm on socio-economic activities, tourism and on local community health.

5.2 Study Area

The study area for the "*Population and Human Health*" assessment will include County level data in relation to Electoral Divisions. In addition, the mapping in relation to residential receptors will include an area within 1km of the proposed wind farm site boundary or 10 times the potential rotor diameter from turbine locations (whichever is greater). The assessment will be informed by topic-specific assessments, including noise and air quality, for which study areas will be defined within the relevant technical chapters in accordance with applicable guidance.

5.3 Sensitive Receptors

All properties in close proximity to the site boundary will be mapped as potential sensitive receptors. Properties will include residential dwellings, commercial properties, schools, derelict buildings, agricultural buildings and pre-planning infrastructure (such as sites containing planning applications for domestic dwellings). All properties 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. As part of the turbine layout design process, a buffer (or distance setback) of a minimum of four times the proposed turbine tip height will be extended from the location of any proposed turbines to sensitive receptors. The currently proposed turbine tip height is 150 metres, therefore a setback of 600 metres will be applied (i.e. 4 x tip height).

5.4 Desktop and Field Surveys

The following information sources and references are of relevance in relation to the desktop study for the Population and Human Health assessment;

- Department of Housing, Planning and Local Government (DoHPLG), Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018);
- Environmental Protection Agency (EPA), Guidelines on the Information to be contained in Environmental Impact Assessment Reports (2022);
- European Commission (EC), Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (2017);
- Department of the Environment, Heritage and Local Government Wind Energy Development Guidelines (2006);
- DoHPLG, Draft Revised Wind Energy Development Guidelines (2019);
- Institute of Public Health Ireland, Health Impact Assessment Guidance: Manual & Technical Guidance (2021);
- IWEA Best Practice Guidelines for the Irish Wind Energy Industry (2012);
- IWEA Best Practise Principles in Community Engagement and Community Commitment (2013); and
- Fáilte Ireland, EIAR Guidelines for the Consideration of Tourism and Tourism Related Project (received from Failte Ireland in 2023).

Relevant Information sources:

- OSI mapping and Aerial Photography to identify land use and possible amenity sites;
- Mayo County Development Plan 2022-2028;
- Central Statistics Office (CSO) information;
- Fáilte Ireland Information in relation to tourism amenity in conjunction with websites of relevant tourism sites and amenities for the area;
- Health Impact Assessment Resource and Tool Compilation (US EPA, 2016);
- Guidelines for Community Noise (WHO,1999);
- Health in Environmental Impact Assessment - A Primer for a Proportionate Approach (IEMA, 2017);
- Health Impact Assessment (Institute of Public Health Ireland, 2009);
- Air Quality Standards Regulations 2011 (S.I. No. 180 of 2011);
- Air Quality Guidelines (WHO, 2005);
- British Standard (BS) 5228-1:2009+A1:2014 – Code of Practice for Noise and Vibration Control on Construction and Open Sites Part 1: Noise;
- Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4) (EPA, 2016); and
- WHO Environmental Noise Guidelines for the European Region 2018.

The Population and Human Health impact assessment evaluates the receiving environment/land use and includes analysis of local population patterns. The assessment also

includes a review of appropriate demographic documentation and incorporates Census Reports and Electoral Division Information, Land use, Population, Employment and Planning Permissions. In addition, the evaluation will provide details of RGE's Community Benefit proposals and any consultation with regard to the same.

There are separate health profiles available for all local authority areas. The most recent profile published for Mayo will be used to establish a community health profile for the proposed wind farm. The assessment of human health for the proposed development, in terms of health protection, will follow the approach set out in the EPA Guidelines, Guidelines for on the information to be contained in Environmental Impact Assessment Reports (May 2022) and in the Commission's SEA Implementation Guidance.

5.5 Cumulative Effects

The potential cumulative impact of the proposed wind farm with other relevant projects in the area on the local community and human health will also be addressed. This may include other wind farm developments, other renewable energy projects or any proposed project which could have the potential to have a cumulative impact.

5.6 Factors Scoped Out

Wind turbines, when designed and maintained to recognised standards, are considered safe. The proposed layout includes appropriate buffers from sensitive receptors, minimising potential health risks or nuisance. Risks such as ice throw, lightning strike, or structural failure are highly unlikely due to adherence to best practice and design standards. Therefore, no significant adverse effects on human health are anticipated.

Given the nature of the development, embedded and additional mitigation measures to be included for the proposed development, air quality effects during the operational phase, and electromagnetic interference are proposed to be scoped out of further assessment. Other factors to be scoped out include population demographics and operational phase traffic (with associated amenity, dust, noise, etc. effects).

5.7 Questions to Consultees

The following are the question in relation to Population and Human Health

1. Is the study area defined in section 5.2 marked for assessment sufficient for completing a robust Population and Human Health assessment?
2. Do you consider the data sources identified for informing the EIA baseline characterisation to be appropriate?
3. Do you consider the proposed surveys for informing the EIA baseline characterisation to be appropriate?
4. Are there any receptors, assets, or resources not currently identified that you believe should be included in the EIAR?
5. Do you agree with the receptors and matters proposed to be scoped in and out of the EIAR?

6. Do you require any shapefiles to assist in your assessment of the proposed development?

6. Biodiversity (Including Ornithology)

6.1 Introduction

The assessment will address the potential impacts on biodiversity due to construction, operation and decommissioning of the proposed development. The objectives of the assessment are to:

(I) Produce a baseline study of the existing ecological environment in the vicinity of the proposed development.
(II) Identify likely beneficial and adverse effects of the proposed development on biodiversity during the construction, operational and decommissioning phases of the development.
(III) Identify mitigation measures to avoid, remediate or reduce likely or significant adverse effects; and,
(IV) Assess likely or significant cumulative effects of the proposed development as a result of other developments.
(V) Assessment of residual effects following the implementation of avoidance and mitigation measures, including consideration of likely significant cumulative effects arising from other plans or projects.

6.2 Study Area

6.2.1 Zone Of Influence

The study area for the biodiversity assessment will cover the 'zone of influence' of the proposed project. The zone of influence depends on the type of development taking place, its likely impacts and the presence of ecological connections which enable such impacts to affect sensitive ecological features. The zone of influence may extend beyond the boundaries of the proposed development site where relevant ecological or hydrological pathways exist.

The ecological study area was defined as all lands made available for the proposed development. This includes the proposed wind farm site, the grid connection options, the proposed 110 kV off-site substation and all associated auxiliary works. Extensions of the zone of influence beyond the main ecological study area were determined by ecological features with broader functional connectivity, as well as aquatic sensitivities downstream of the proposed development where existing hydrological linkages required consideration.

The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change. It may therefore be appropriate to identify different zones for different features. The features affected could include habitats, species, and ecosystems and the processes on which they depend.

All ecological and/or hydrological connections which provide pathways for impacts between the proposed development site and ecological features in the surrounding area are identified and described in the ecological baseline. Ecological features with no credible pathway for impact are not considered to fall within the zone of influence, irrespective of their proximity to the proposed development.

In terms of the zone of influence for construction works, potential for direct effects to occur will be assessed within 20m of the proposed site infrastructure, including temporary features (site compound, deposition areas) and for the grid connection route this will be reduced to a 5m corridor along the route. This assessment area is referred to as the works/construction corridor within this section of the EIAR scoping document. Indirect effect on ecological receptors to works occurring within the construction corridor are assessed with regard to types of works proposed and the sensitives of the receptor, as published.

In terms of the zone of influence for the proposed project once operational the infrastructural footprint is assessed and for operational turbines species-specific sensitivities are assessed as pertaining to birds and bats.

6.3 Sensitive receptors

6.3.1 Potential Impacts

Likely Sources of Direct Effects during the Construction Phase, include:

- Clearance of vegetation, soil and rock for access road, hardstands and turbine bases;
- Clearance of vegetation around turbines to facilitate proposed development infrastructure and reduce turbulence;
- Clearance of vegetation around turbines to implement bat feature buffers;
- Creation of temporary infrastructure such as site compound, blade set-down areas and crane pads;
- Excavation trenches for cable ducting; and
- Placement of material arising from infrastructure works.

Likely Sources of Secondary Effects during the Construction Phase, include:

- Stockpiling of materials on-site (run-off, erosion etc.);
- Collection/drainage of surface water runoff;
- Spreading of non-native plant species; and
- Construction activity/noise resulting in avoidance by birds and mammals due to disturbance.

Likely Sources of Direct Operational Phase Effects:

- Collisions or barotrauma risk with turbines for bats; and
- Collisions risk with turbines for birds.

Likely Sources of Secondary Operational Phase Effects:

- Collection/drainage of surface water runoff;
- Operational activities and servicing - though this would be limited to relatively few visits per year and would not be considered to add significantly to existing/background levels of human activity in the area;
- Displacement effect of operating turbines;
- Displacement effects of lighting for substation.

6.3.2 Designated Sites

Assessment of potential impacts on designated sites will use the National Parks & Wildlife Service (NPWS) Designations Viewer[2] to investigate connectivity (source-receptor pathways) between all aspects of the development (source) and all sites designated for nature conservation, together with the features of interest for each site (receptors). The assessment will cover Nationally designated sites, including: proposed Natural Heritage Areas (pNHAs), Natural Heritage Areas (NHAs), National Parks, Nature Reserves and Wildfowl Sanctuaries; and Internationally designated sites, including: Special areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. For European Sites (SPAs & SACs) this assessment will incorporate the conclusions of AA Screening Report and the Natura Impact Statement (NIS) if the latter report is required to support the planning application. Shapefiles and metadata for designated sites have been downloaded and are updated annually for use on local GIS, which allows detailed measurements to be taken and assessment with other data sets, such as the indicative flow network provided by the EPA[3] that is used to investigate hydrological linkages.

The potential for the development to impact any features recognised as locally important for biodiversity, as identified in the County Development Plans and Biodiversity Action Plan will also be assessed, including:

- National Biodiversity Action Plan 2023-2030
- Mayo County Development Plan 2022-2028
- County Mayo Biodiversity Action Plan 2010-2015
- Galway County Development Plan 2022-2028
- Galway County Heritage and Biodiversity Plan 2017-2022

European Sites (Natura 2000 sites)

The proposed development does not occur within any sites designated for nature conservation.

Cloughmoyne SAC is situated directly adjacent to the west of the development site, and the only Qualifying Interest (QI) is Limestone pavements. This nationally important habitat has the potential to be affected by the development if associated structures such as access tracks or construction works directly interfere with it or indirectly if site run off during construction impacts soil chemistry.

The Lough Corrib SAC (Site Code: 000297), which is delineated by the Black River and associated riparian habitat, lies to the east of the proposed development, occurring c. 147m away at its nearest point, while the Lough Corrib SPA (Site Code: 004042) occurs c. 2.9km west of the proposed project. One of the main considerations is the potential impacts on water quality due to the proposed development affecting downstream freshwater pearl mussel populations, which are one of the QIs of this SAC. Other important aquatic features including lamprey, salmonids and otter also occur downstream. Wintering waterbirds ecologically linked to the Lough Corrib SPA/SAC have the potential to be displaced or impacted by turbines.

2 NPWS Designations Viewer online ArcGIS mapping available at:
https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba

3 EPA Geo Portal Data Download Section https://gis.epa.ie/GetData/Download

A portion of the proposed development site lies within the same sub-catchment as Mororha Lough SAC, and therefore any drainage or water contamination during development could impact the Loughs QI, Cladium Fens, which are sensitive to groundwater fluctuations. Any potential impacts on ground water could also adversely effect Shrule Turlough SAC, which supports some rare turlough plant species, as it lies within the same hydrological sub catchment as a large proportion of the proposed development site.

European Sites within the potential zone of influence and associated Qualifying Interest (QIs)/Special Conservation Interest (SCIs) are shown in Figure 6-1 and listed below:

Cloughmoyne SAC	Limestone pavements [8240]
Lough Corrib SAC	*Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029] *Austropotamobius pallipes* (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Salmo salar* (Salmon) [1106] *Rhinolophus hipposideros* (Lesser Horseshoe Bat) [1303] *Lutra lutra* (Otter) [1355] *Najas flexilis* (Slender Naiad) [1833] *Hamatocaulis vernicosus* (Slender Green Feather-moss) [6216] Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or Isoeto-Nanojuncetea [3130] Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Note: Non-aquatic QIs apart from bats are not in the ZoI
Lough Corrib SPA	Gadwall (*Anas strepera*) [A051] Shoveler (*Anas clypeata*) [A056] Pochard (*Aythya ferina*) [A059] Tufted Duck (*Aythya fuligula*) [A061] Common Scoter (*Melanitta nigra*) [A065] Hen Harrier (*Circus cyaneus*) [A082] Coot (*Fulica atra*) [A125] Golden Plover (*Pluvialis apricaria*) [A140] Black-headed Gull (*Chroicocephalus ridibundus*) [A179] Common Gull (*Larus canus*) [A182] Common Tern (*Sterna hirundo*) [A193] Arctic Tern (*Sterna paradisaea*) [A194] Greenland White-fronted Goose (*Anser albifrons flavirostris*) [A395] Wetland and Waterbirds [A999]
Mocorha Lough SAC	Calcareous fens with Cladium mariscus and species of the Caricion davallianae [7210]
Shrule Turlough SAC	Turloughs [3180]

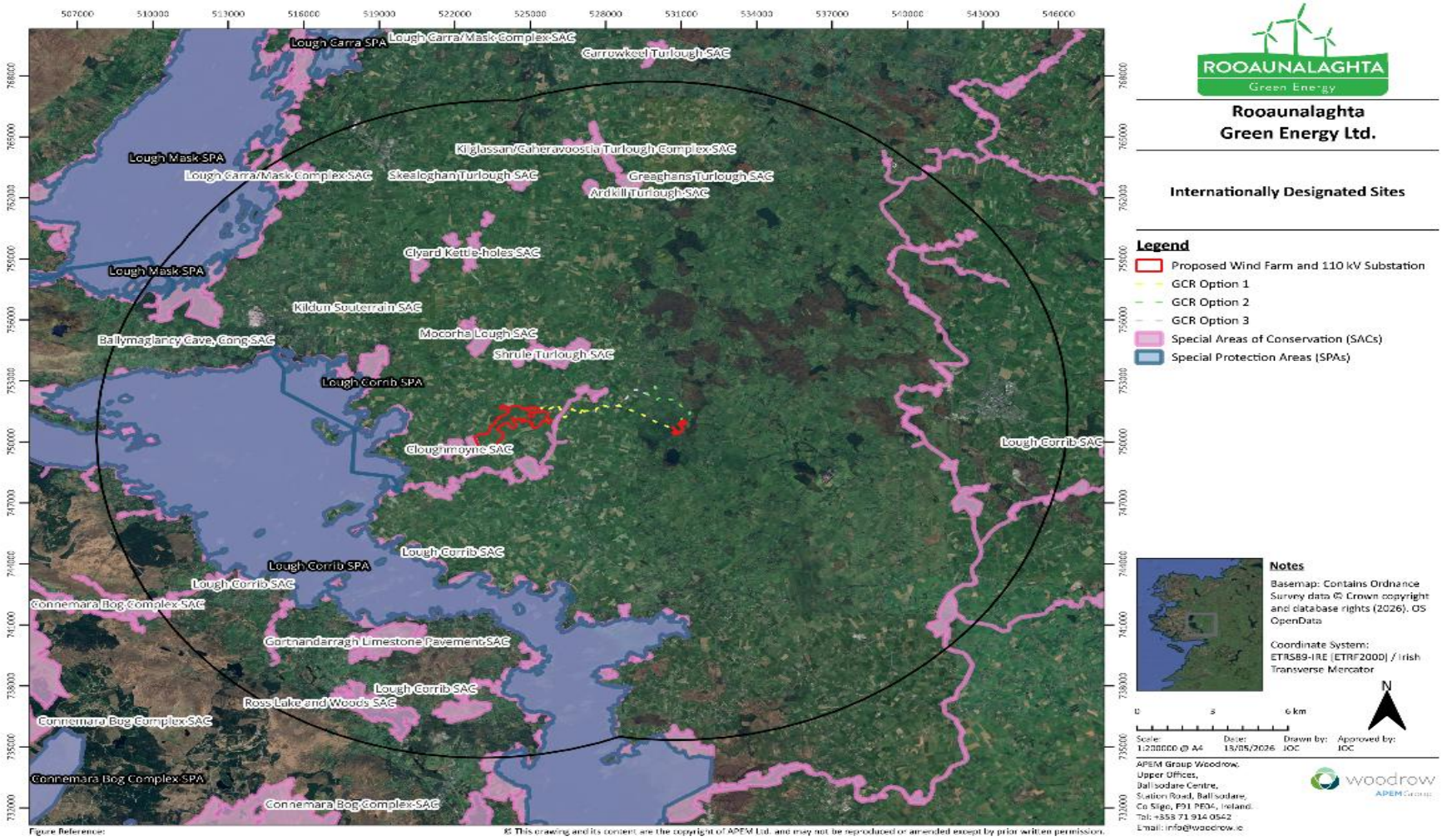


Figure 6-1: SAC and SPA Designated sites

Nationally important sites

Nationally important sites within the potential zone of influence and associated Qualifying Interest (QIs)/Special Conservation Interest (SCIs) are shown in Figure 6-2 and listed below:

- Cloughmoyne pNHA
- Rostaff Turlough pNHA
- Mocorha Lough pNHA
- Shrule Turlough pNHA
- Lough Hacket pNHA
- Turlough O'Gall pNHA
- Turlough Monaghan pNHA
- Turloughcor pNHA
- Killower Turlough pNHA
- Belclare Turlough pNHA
- Knockmaa Hill pN

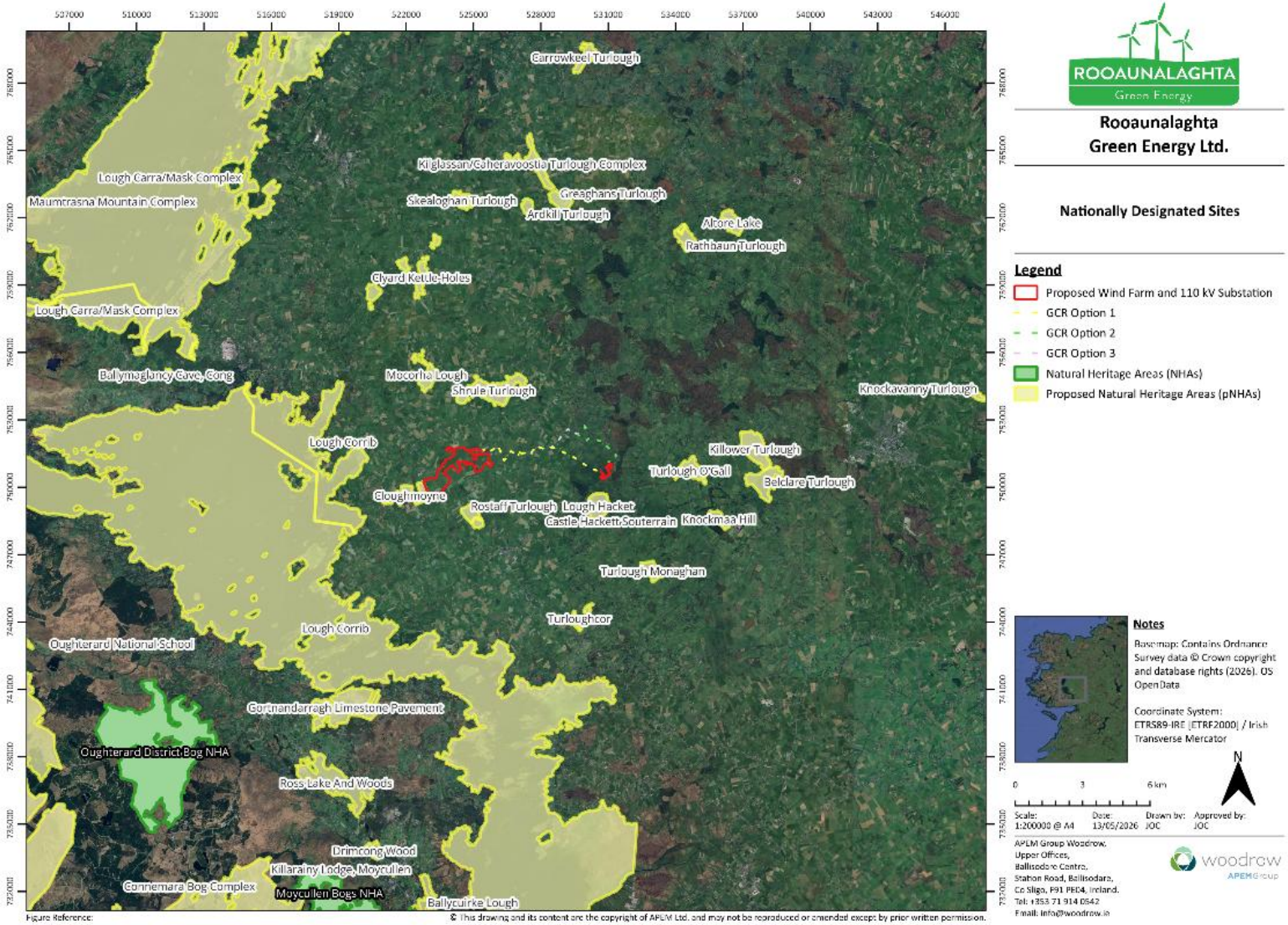


Figure 6-2: NHA and pNHA Designated Site

6.3.3 Habitats

The receiving environment supports a range of habitats, including agricultural grasslands with associated linear features like stonewalls and hedges; as well as hazel dominated woodland, exposed calcareous rock, heathland and grassland habitats ranging from highly improved to semi-natural. A particularly sensitive habitat being limestone pavement. The large expanse of limestone pavement in the north of the site is in favourable ecological condition and would likely be considered nationally important. Furthermore, limestone pavement is listed in the EU Habitats Directive as a Priority Habitat, meaning this habitat is in danger of disappearing within the EU territory and the project will be designed to avoid this habitat where possible.

The study area also includes limestone pavement in unfavourable condition as well as, European dry heaths, calcareous grassland and lowland hay meadows which are listed in Annex I of the Habitats Directive and should be avoided across all phases of the proposed development.

6.3.4 Aquatic ecology

In the absence of best-practice mitigation, the proposed development has the potential to result in a deterioration in water quality. The Black River flows into Lough Corrib along the eastern and southern side of the proposed development site. This section of the Black River is designated as part of the Lough Corrib SAC. Therefore, downstream sensitive water species have the potential to be affected by the proposed development, including otter, fish species, white-clawed crayfish and several freshwater habitats.

An initial review of species distribution was able to exclude freshwater pearl mussel as species at risk. Based on Article 17 reporting (NPWS, 2019)[4] and the Conservation Objectives for the SAC, this species is only known to occur on the Owenriff River, which is separated from the proposed development site by the waters of Lough Corrib, i.e. occurs upstream. Based on the Margaritifera Sensitive Areas Map[5] there are no sensitive catchments within the zone of influence for the proposed development.

6.3.5 Birds

Based on a comprehensive desk-based review and ornithological surveys conducted to date (i.e., commencing September 2022), species with high potential sensitivity recorded, include:

(I) Occasional hen harrier flights recorded during winter. To date, these comprise infrequent, low-level hunting flights(<20m), with no roosting activity observed within the site. Overall flight activity has been limited and irregular and currently does not meet the threshold for Collision Risk Modelling (CRM) due to low flight activity.

(II) There are regular sightings of wetland and waterbirds which are Special Conservation Interests (SCIs) of the nearby Lough Corrib SPA. The majority of records relate to gull

4 NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn & Fionnuala O'Neill

5 Margaritifera Sensitive Areas Map accessed via:
https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=2fae3c393baa4b79b7dfb1e3c19f3fab

species, although there are occasional observations of golden plover flights, particularly towards the southern part of the site, as well as infrequent records of gadwall, tufted duck, pochard and shoveler.

(III) A confirmed peregrine falcon pair breeding in Kinlough castle to the southeast of the site, c. 750m from the nearest turbine

(IV) Kestrel regularly forage throughout the site and are suspected to be breeding locally outside the site boundary. However, most flights comprise single individuals.

(V) Gulls are recorded using the site regularly for commuting, foraging and moving between roosts within the wider Corrib–turlough system. To date, most flights are transit movements at height over the site.

(VI) Migratory swans and geese occur in significant numbers within the wider Corrib–turlough system and within the general environs of the site; however, interactions with the site itself remain low based on survey data collected to date. Habitat within the site is limited for these species, and their use of the area is intermittent, typically involving brief foraging or commuting movements, with modest numbers observed.

6.3.6 Mammals

Otters are reported as occurring throughout the Lough Corrib SAC and also occur within the Black River. There is no suitable otter habitat within the site itself, as there is no viable watercourse present other than field drains. However, there is ample foraging opportunity in the surrounding area, and while direct effects such as habitat loss are unlikely, there is potential for indirect effects through deterioration of water quality, particularly in the Black River and further downstream within the wider Lough Corrib SAC, which could reduce prey biomass.

Other protected mammals likely to occur in the site include badgers, Irish stoats and Irish hares. Woodland habitats for pine marten and red squirrel are limited and these species are unlikely to be regularly occurring.

6.3.7 Bats

A data request for bat records, including known roosts within 10km of the proposal has been submitted to Bat Conservation Ireland (BCI). Based on NBDC's Biodiversity Maps all nine species of bats regularly occurring in Ireland have been recorded within c. 10km of the proposed development site, including:

- Brown long-eared bat
- Common pipistrelle
- Soprano pipistrelle
- Nathusius's pipistrelle
- Lesser horseshoe bat
- Leisler's bat (lesser noctule)

- Daubenton's bat
- Whiskered bat
- Natterer's bat

In terms of bat habitat suitability, the proposed development site offers suitable foraging habitats for the full range of bat species occurring in Ireland. The lack of building and mature/veteran trees means that potential roost features (PRFs) were found to be limited within the proposed development site. Linear features including hedgerows and possibly stonewalls provide connectivity through the site and with the wider area. Apart from some areas of hazel scrub, areas of woodland are limited, as is the occurrence of water features.

Lesser horseshoe bats (*Rhinolophus hipposideros*) are a QI of the Lough Corrib SAC and based on the conservation objectives for the SAC, the closest known roost within the SAC is approximately 8km from the development site on the northern shoreline of Lough Corrib. This roost is beyond the core sustenance zone (2-2.5km) reported for lesser horseshoe bats, however, is within the range reported for seasonal movements between hibernation and maternity roosts (10km). In addition, there is another roost non-designated lesser horseshoe bat roost reported to east of the proposed site, approximately 8km away.

Further roost data with be requested for BCI and NPWS, which will provide more insight into the distribution of roosts in the wider area.

6.4 Desktop and Field Surveys

6.4.1 Ecological impact assessment

Ecological surveys for the proposed development have been and are currently being undertaken following specific guidelines for habitats and species, as outlined in the following sections, and with reference to the relevant legislation and policy. The importance of the habitats and species present is evaluated using the guidance document *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal, and Marine* published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018, updated 2024). This document outlines an accepted approach for the evaluation of potential impacts from such developments and is outlined in the following sections.

Ecological features which occur within the zone of influence, such as nature conservation sites, habitat or species are evaluated in geographic hierarchy of importance. The hierarchical categories used for this evaluation are based on those listed in NRA (2009)[6]. Approaches to attributing nature conservation value to species have been previously developed for some groups such as birds and bats. The specific assessment criteria employed for assessing avian and bat populations are detailed below:

- Ornithological impact assessment follows Percival (2003)[7], which requires that an evaluation is undertaken of the population status and trends for the bird species recorded to determine the nature conservation importance, which is based on links to European Sites (Natura 2000 Sites), Annex 1 status on EC Birds Directive and

[6] NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority. Available at: https://www.tii.ie/technical-services/environment/planning/Guidelines-for-Assessment-of-Ecological-Impacts-of-National-Road-Schemes.pdf

[7] Percival, S. M. 2003. Birds and wind farms in Ireland: A review of potential issues and impact assessment. Ecology Consulting, Coxhoe, Durham

conservation status as listed on the BoCCI - Bird of Conservation Concern in Ireland - BoCCI 2020-2026 (Gilbert *et al*., 2021)[8]).

- Specific assessment criteria employed are applied for the assessment of avian and bat populations, including: NatureScot *et al*. (2021)[9] provides guidelines for conducting risk assessment for bat species occurring on wind farms, which is modified slightly to align the assessment methodology with Irish bat populations.

'Important ecological features' (also referred to as key ecology receptors – KERs) are defined as those features which are within the zone of influence and are evaluated as being of Local Importance or greater.

In summary the following ecological studies and field surveys are required to inform the ecological impact assessment:

- Desk-based study to compile baseline for ecological records;
- Assessment of potential impacts on designated sites;
- Habitat mapping (Fossitt, 2000), with Annex I habitat assessments where required;
- Invasive species surveys;
- Invertebrate habitat suitability assessment (marsh fritillary, Irish damselfly);
- Aquatic and fisheries assessments, including: physio-chemical analysis, Q-values, freshwater pearl mussel (FWPM), crayfish, salmonid and lamprey suitability assessments.
- Amphibian and reptile suitability assessments;
- Bird surveys (compliant with SNH, 2017);
- Terrestrial (non-volant) mammal surveys; and
- Bat surveys (compliant with NatureScot *et al*., 2021).

Field surveys conducted to inform the ecological impact assessment have been undertaken with regard to:

- Potential for occurrence ecological receptors based on site conditions (e.g. substrate, hydrology) for habitats and habitat suitability/availability for species; and
- the specific sensitivities of ecological receptors in relation to the potential zone of influence of the proposed development during construction (decommissioning) and operational phases.

The following provides an overview of the study areas that have been or are currently being applied for ecological surveys, along with survey guidelines/methodologies that have been adopted.

6.4.2 Desk study

A preliminary desk-based ecology study was carried out in 2022, and updated again in 2025, as part of the project scoping exercise. This work collated information from multiple data sources documenting the occurrence of habitats and species in Ireland. This study identified the protected and potentially sensitive species and habitats recorded in the environs of the proposed development. The desktop survey informed the iterative project design process and

8 Gilbert, G., Stanbury, A. & Lewis, L. (2021). Birds of Conservation Concern in Ireland 2020-2026. Irish Birds 9: 523-544

9 NatureScot, Natural England, Natural Resources Wales, Renewable UK, Scottish Power Renewables, Ecotricity Ltd, University of Exeter & Bat Conservation Trust (2021). Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.

enabled an assessment of the likely ecological effects of the proposed development; and provided information on the species and habitats that could be affected by the development. These initial desktop surveys also facilitate a targeted approach to ongoing ecological surveying.

6.4.3 Designated sites

Assessment of potential impacts on **designated sites** will use the NPWS Designations Viewer[10] to investigate connectivity (source-receptor pathways) between all aspects of the development (source) and all sites designated for nature conservation, together with the features of interest for each site (receptors). The assessment will cover Nationally designated sites, including: proposed Natural Heritage Areas (pNHAs), NHAs, National Parks, Nature Reserves and Wildfowl Sanctuaries; and Internationally designated sites, including: SACs, SPAs and Ramsar sites. For European Sites (SPAs & SACs) this assessment will incorporate the conclusions of the NIS for AA. Shapefiles and metadata for designated sites have been downloaded and are updated annually for use on local GIS, which allows detailed measurements to be taken and assessment with other data sets, such as the indicative flow network provided by the EPA[11] that is used to investigate hydrological linkages. The potential for the development to impact any features recognised as locally important for biodiversity, as identified in Co. Mayo Biodiversity Action Plan 2010-2015 and the Mayo County Development Plan 2022-2028, will also be assessed. As the site is in close proximity to Co. Galway and the ZoI extends across the county boundary, similar documents will be reviewed for this county.

An AA Screening will be undertaken to assess the potential for significant effects on the integrity of European Sites within the zone of influence of the project. Where the Screening concludes that significant effects cannot be ruled out, either alone or in combination with other plans or projects, an NIS will be prepared and submitted in accordance with Article 6(3) of the Habitats Directive. The NIS will be a separate, standalone document to the EIAR.

6.4.4 Habitat surveys

High level habitat surveys were initially undertaken within the lands-made-available for the project to ensure sensitive areas were avoided as part of the design process. These initial surveys will be refined to ensure detailed mapping of the habitats within the proposed development area is prepared. Habitat surveys and mapping was undertaken following Smith *et al*. (2011)[12], with all habitats classified into recognised communities defined by Fossitt (2000)[13]) and cross-referenced to Annex I habitats. Given the higher level of classification required by, and protection afforded to, Annex I habitats, careful consideration was given to species composition, location, and physical characteristics of the surveyed habitats, as described in European Commission (2013)[14]. A follow-up assessment was carried out in May 2025 to evaluate the status of potential Annex I habitats. The Annex I habitat assessments

10 NPWS Designations Viewer online ArcGIS mapping available at:
https://dahg.maps.arcgis.com/apps/webappviewer/index.html?id=8f7060450de3485fa1c1085536d477ba

11 EPA Geo Portal Data Download Section https://gis.epa.ie/GetData/Download

12 Smith G.F., O'Donoghue P., O'Hara K. & Delaney E. (2011). Best practice guidance for habitat survey and mapping. The Heritage Council

13 Fossitt J.A. (2000). A guide to habitats in Ireland. The Heritage Council

14 European Commission (2013) The Interpretation Manual of European Union Habitats - EUR28

followed the approach outlined in Wilson and Fernandez (2013)[15] for limestone pavement, Martin *et al*. (2018)[16] for Annex I grasslands and Perrin *et al*. (2014)[17] for upland habitats including heath. Targeted detailed botanical quadrat surveys were also undertaken at proposed turbine locations in June and July 2025.

One of the main outputs of the habitat mapping was a Fossitt (2000) habitat map for the site that will be submitted as part of the planning application. This allows direct habitat loss to be quantified and assessed.

6.4.5 Invasive non-native species (INNS)

Locations of invasive non-native species (INNS) were mapped within the proposed wind farm during 2024 and 2025 surveys. Further survey work was completed along grid connection routes, which included extended sections of public road. Particular attention was given to accurately identifying the occurrence of non-native species listed on Schedule III Part I of S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011.

6.4.6 Habitat suitability for invertebrates

Habitat availability for invertebrates (excluding aquatic species) has been assessed within the land-made-available for the project, during multidisciplinary site walkover surveys. Although marsh fritillary are recorded within the 10km squares encompassing the proposed site, the occurrence of devil's-bit scabious (*Succisa pratensis*), which is the food plant of the marsh fritillary butterfly, has not been identified. Therefore, no further surveys are required for this species. Article 17 reporting (NPWS, 2019)[18] confirms that proposed site is beyond the range for other protected invertebrates listed on Annex II of the Habitats Directive, including three species whorl snails (*Vertigo* species) and Kerry slug. Geyer's whorl snail (*Vertigo geyeri*) does occur in the 10km square M24, which borders the proposed site, however these records are associated with calcareous flush/fen habitat near Lough Corrib.

In terms of important habitats for other rare invertebrate species occurring within proposed site, such as wetlands, these were judged to be limited. The species rich calcareous grasslands identified are likely to have a high value for pollinator species.

6.4.7 Aquatic and fisheries assessments

Aquatic and fisheries assessments were carried out between 2023 and 2024 and covered waterbodies with downstream hydrological connectivity to the proposed development area. Surveys included:

- Water quality was determined both with a handheld device in situ and through more in-depth analysis at an accredited laboratory. Water quality was analysed in situ, using

15 Wilson, S. & Fernández, F. (2013). National survey of limestone pavement and associated habitats in Ireland. Irish Wildlife Manuals, No. 73. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

16 Martin, J.R., O'Neill, F.H. & Daly, O.H. (2018) The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. Irish Wildlife Manuals, No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.

17 Perrin, P. M., Barron, S. J., Roche, J. R. & O'Hanrahan, B. (2014). Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. Irish Wildlife Manuals, No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland

18 NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 3: Species Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn & Fionnuala O'Neill

a portable, multi-meter probe to provide a baseline profile of pH, temperature (°C), conductivity (µS/cm) and dissolved oxygen (mg/L & percent concentration), conductivity and turbidity. Water samples (1 Litre) were collected in pre-sterilised sampling bottles and rinsed with river water before the sample is taken. Water samples were taken from just below the surface ensuring that the riverbed is not disturbed during sampling. Once sample bottles were filled, they were stored on ice and transported to an accredited laboratory for analysis within the recommended holding time for the selected more detailed water quality parameters.

- Nitrate levels at Site WQ01, located on the Rooaunalaghta tributary, were significantly above the Guideline value to support Good Ecological Status of 1.8 (EPA, 2021)[19].
- Biological scoring of the streams associated with the proposed development site was conducted to provide for Q-rating of each watercourse, up and down stream of the works corridor, including the grid connection route. This is undertaken using macro-invertebrate sampling (kick-sampling). As detailed in Toner *et al*. (2005)[20], macro-invertebrate samples will be converted to Q-ratings and assigned to WFD status classes. Results indicate that water quality matches the result recorded by the EPA in 2023 at Site WQ3 where a Q-value Classification of Q4 was recorded[21].
- A *Margaritifera margaritifera* Stage 1 survey has been carried out according to the standard methodology used by the NPWS, 2004)[22]. Based on the findings of the Stage 1 FWPM survey, no further surveys for FWPM are required.
- Based on Article 17 reporting, white-clawed crayfish have been recorded throughout the Lough Corrib catchment but have not been recorded on the Black River. No crayfish were identified during two white-clawed crayfish surveys which were carried out on the Black River in line with survey methodology recommended by Reynolds *et al*. (2010)[23] and Gammell *et al*. (2021)[24].
- The guidance published in JNCC (2015)[25] was applied to lamprey habitat assessments. The approach followed Natura 2000 guidance for the monitoring of river lamprey *Lampetra fluviatilis*, brook lamprey *Lampetra planeri* and sea lamprey *Petromyzon marinus* (Harvey & Cowx, 2003)[26] and included assessment of habitats using visual mapping of substrates suitable for adult and juvenile lamprey, as detailed in Maitland (2003)[27].
- Salmonid suitability assessments of the watercourses hydrologically linked to the proposed development were carried out. The principal instream physical habitat variables that determine suitability for juvenile salmonids are; water depth, water

19 EPA (2021). Assessment of the catchments that need reductions in nitrogen concentrations to achieve water quality objectives. WFD River Basin Management Plan – 3rd Cycle. Version 1.6, June 2021. EPA Catchments Unit. Catchment-nitrogen-reductions-assessment---June-2021.pdf (epa.ie)

20 Toner P, Bowman J, Clabby K, Lucey J, McGarrigle M, Concannon C, Clenaghan C, Cunningham P, Delaney J, O'Boyle S, MacCarthaigh M, Craig M and Quinn R. (2005) Water Quality in Ireland: 2001– 2003. Environmental Protection Agency, Johnstown Castle Estate, Wexford, Ireland.

21 EPA Maps

22 National Parks and Wildlife Service (2004). Margaritifera margaritifera. Stage 1 and Stage 2 survey guidelines. Irish Wildlife Manuals No. 12. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland).

23 Reynolds JD, O'Connor W, O'Keeffe C and Lynn D (2010) A technical manual for monitoring white-clawed crayfish Austropotamobius pallipes in Irish lakes. Irish Wildlife Manuals No 45, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin.

24 Gammell M, McFarlane A, Brady D, O'Brien J, Mirimin L, Graham C, Lally H, Minto C and O'Connor I (2021) White-clawed Crayfish Austropotamobius pallipes survey in designated SACs in 2017. Irish Wildlife Manuals, No. 131. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage, Ireland.

25 JNCC (2015) Common Standards Monitoring Guidance for Freshwater Fauna (2015). Joint Nature Conservation Committee, Peterbrough.

26 Harvey JP and Cowx IG (2003) Monitoring the River, Brook and Sea Lamprey, Lampetra fluviatilis, L. planeri and Petromyzon marinus. Conserving Natura 2000 Rivers Monitoring Series No. 5, English Nature, Peterborough.

27 Maitland PS (2003) Ecology of the River, Brook and Sea Lamprey. Conserving Natura 2000 Rivers Ecology Series No. 5. English Nature, Peterborough, 54pp.

velocity, streambed substratum and cover (Heggenes 1990)[28]. Information on other factors affecting water quality in the streams were collected, such as physical barriers to fish migration, areas of excessive erosion (e.g. locations where cattle enter streams), dense bankside vegetation. Salmonid fry and parr were observed during the survey.

- A supplementary walkover resurvey was completed in November 2025 to confirm that land use, riparian conditions and surface-water features had not changed since the primary aquatic surveys (2023–2024).
- Biosecurity - In order to protect the environment, employees and the public against biological hazards, the APEM Group adopts a robust and comprehensive biosecurity measures which is complied with at all times.

6.4.8 Amphibian and reptile suitability assessments

Amphibian and reptile habitat suitability assessments were carried out to identify suitable habitat for amphibians and reptiles that could be affected by the proposed development.

No waterbodies of sufficient permanence or ecological suitability to support breeding smooth newt were identified within 200-250m of proposed site infrastructure, with only minor field drains present. As outlined in Meehan (2013)[29] such features are unlikely to support newt breeding, and on this basis no targeted newt surveys were undertaken.

Habitat with potential to support common lizard is also limited, consisting mainly of isolated rocky crevices associated with limestone features which provide occasional shelter or basking opportunities but offer poor foraging potential (Edgar et al., 2010[30], Farren, 2010[31]). Although the extent and quality of suitable habitat is low and targeted surveys were therefore not completed, the presence of potentially suitable refugia and hibernacula means that the species is assumed to be present and standard mitigation will be applied as a precautionary measure.

6.4.9 Ornithological surveys

Ornithological surveys are ongoing at the proposed development site and will provide a two-year study compliant with SNH (2017)[32] survey guidelines. A range of different study areas are being applied, including (Note: Initially the buffers were applied to the potential build area):

- 500m turbine buffer: Vantage point watch to assess avian collision risk and site walkover surveys to locate potentially sensitive breeding birds, including waders and raptors. Dusk surveys for crepuscular species are also undertaken;
- 1km turbine buffer: Barn owl surveys - surveys targeting old building and veteran trees potentially utilised by breeding barn owls;

28 Heggenes J (1990) Habitat utilization and preferences in juvenile Atlantic salmon (Salmo salar) in streams. Regulated Rivers: Research & Management 5, 341-354.

29 Meehan, S.T. (2013) National Newt Survey 2013 Report. Irish Wildlife Trust, Dublin. Available at: https://iwt.ie/wp-content/uploads/2017/09/Newt-Survey-2013.pdf

30 Edgar, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth

31 31 Farren, A., Prodöhl, P.A., Laming, P. and Reid, N. (2010). Distribution of the common lizard (Zootoca vivipara) and landscape favourability for the species in Northern Ireland. Amphibia-Reptilia 3 Vol 31 p387.

32 Scottish Natural Heritage, 2017. Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms. Scottish Natural Heritage

- 2km turbine buffer: Breeding raptor surveys and hen harrier winter roost surveys targeting suitable habitat;
- 5km turbine buffer: Wider area wintering waterbird surveys conducted on a monthly base to provide contextual data on local waterbird populations potentially affected by the proposed development.

6.4.10 Terrestrial mammals

For terrestrial mammal surveys species-specific surveys areas were covered based on receptor sensitivities to proposed development actives. Scoping surveys that covered the land-made-available were refined to cover the proposed development area, ensuring coverage of the proposed works corridor/infrastructural footprint with regard to species-specific sensitivities and habitat availability, including:

- 150m up and downstream of proposed construction works for otter;
- Suitable habitat within 100m of proposed construction work for pine marten;
- Suitable habitat within 50m of proposed construction work for badger and red squirrel.

Targeted mammal surveys were undertaken in April 2025, before foliage and vegetation were in full growth.

6.4.11 Bat surveys

Initial scoping surveys for bats assessed habitat availability within the lands-made-available for potential roost features (PRFs) and foraging potential, according to criteria set out in the Bat Conservation Trust (BCT) guidance (Colins, 2023)[33]. The survey area will be refined to cover an area within 300m of proposed turbine locations and within 30m of other proposed infrastructure including substation and access tracks. For proposed infrastructure with a more constrained footprint, such as the grid connection route the survey area may be limited to a buffer of 5-10m. All PRFs identified have been classed as negligible, low, moderate or high status in terms of potential to support roosting bats. A range of dusk/dawn emergence/re-entry surveys and internal roost inspections have been conducted for PRFs classified as high and moderate with further surveys scheduled for 2025.

In 2024 bat activity surveys, as required by NatureScot *et al*. (2021), to assess potential effects of operational turbines covered the development area where turbines are proposed.

6.5 Cumulative Effects

Cumulative impacts with other developments, including but not limited to other wind farms, will be assessed for all sensitive receptors. A clear rationale will be provided outlining the criteria for determining the other developments considered and the zone of influence with be relative to the range of sensitive species or habitats. Where available reference with will made to relevant guidance, such as SNH (2018) which provides guidelines for the assessment of cumulative impacts and the effects of onshore wind farms on ornithological receptors.

33 Colins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3th Edition). The Bat Conservation Trust, London

6.6 Factors Scoped Out

The potential for connectivity (i.e., *via* ecological or hydrological pathways) between the proposed development and designated sites has been examined at scoping stage using the Source-Pathway-Receptor (S-P-R) model.

For ornithological receptors, designated sites were identified up to a 20km radius from the proposed wind farm site. This approach reflects the potential mobility and ranging behaviour of bird species associated with wetlands and open landscapes and is consistent with SNH (2016) guidance.

With respect to hydrological and ecological pathways, an initial search radius of 15km was applied to identify designated sites, which was informed by DoEHLG (2010) guidance. Each designated site identified within this area was then considered on an individual basis using the S-P-R model to determine the potential for connectivity and effects. Preliminary review indicates that any European or national designated sites situated more than 15km downstream have no credible pathway for impact, given the scale of the proposed development, the nature of the intervening watercourses, and the dilution, dispersion and attenuation processes that occur over such distances. In the absence of a credible S-P-R linkage, designated sites located beyond 15km are therefore proposed to be scoped out of further assessment within the EIAR.

At scoping stage, several potential ornithological considerations have been reviewed and are proposed to be scoped out of further detailed assessment within the EIAR. These factors have been excluded on the basis of two full years of baseline survey data, desk-based review, the absence of credible impact pathways, and alignment with relevant guidance, including NatureScot (2017; 2025). The rationale for scoping out each factor is outlined below.

- BoCCI (Gilbert *et al.*, 2021) green-listed bird species, which are of favourable conservation status and low sensitivity to the impact pathways relevant to the project.
- Passerine species (with the exception of chough) are generally not considered sensitive receptors in the context of onshore wind farms within this habitat type, as they are generally not subject to significant collision, displacement or barrier effects. NatureScot guidance confirms that detailed passerine surveys are not required in commercial forestry or improved agricultural landscapes, and baseline surveys at the Site recorded only common and widespread passerine species with no evidence of species of high conservation concern and therefore there is no potential for significant effects on these species. Chough is retained as an exception due to its Annex I listing, small and geographically restricted Irish population, and its locally breeding presence in proximity to the Site. All other passerine species are therefore scoped out of further assessment.
- Buzzard and sparrowhawk, which are also green-listed species, are proposed to be scoped out of further assessment at this stage. Baseline surveys recorded very low levels of activity for both species across the proposed development, with no evidence of regular use for foraging or commuting, no confirmed breeding territories within the proposed wind farm site, and no observations of high-risk flight behaviour within the rotor-swept height. Although both species are widespread, adaptable and not generally considered particularly sensitive to onshore wind farm development, the scoping decision is based on site-specific evidence indicating negligible usage and the absence of a meaningful S-P-R linkage. As such, there is no realistic potential for significant

collision, displacement or barrier effects, and these species do not warrant further detailed assessment within the EIAR.

6.7 Approach To Mitigation

Where appropriate additional mitigation will be implemented to further reduce impacts on receptors. This will include:

- Production of a Habitat Management Plan which will set out measures for the compensation, enhancement and long-term management of habitats affected by the proposed development.
- Production of a Breeding Birds Protection Plan which will be informed by pre-construction surveys and include a range of typical mitigation measures and good practice to protect breeding species and comply with relevant legislation; and
- Specific mitigation measures as required for those species listed on Schedule 1 or Annex I which may require additional mitigation. This could include species-specific plans, for example for the breeding and potentially breeding raptors occupying the proposed development site and surrounding area.

6.8 Questions to Consultees

1. Do you agree with the proposed biodiversity-related consultees included within Table 19.1?
2. Do you agree with the approach to the proposed study areas / zones of influence (Section 6.2)?
3. Do you consider the data sources identified (Section 6.3) for informing the EIA baseline characterisation to be appropriate?
4. Are there any receptors, assets, or resources not currently identified (Section 6.3) that you believe should be included in the EIAR?
5. Do you consider the proposed desktop research and field surveys (Section 6.4) for informing the EIA baseline characterisation to be appropriate?
6. Do you agree with the receptors and matters proposed to be scoped in and out (Section 6.6) of the EIA?
7. Do you require any shapefiles to assist in your assessment of the Proposed Development?

7. Land, Soils and Geology

7.1 Introduction

The principal objectives of the Land, Soils and Geology Chapter of the EIAR will be to identify and mitigate potential issues of the proposed wind farm to ensure that the impact on the environment is minimised.

A desk study shall be undertaken to acquire all available topographic, geological, geotechnical and hydrogeological data (including geotechnical and site stability data) for the proposed wind farm and surrounding area. The desk study will include a geotechnical risk assessment to identify and mitigate potential issues that may arise during the construction stage (including geohazard, geomorphology features). The land cover in the vicinity of the current wind turbine locations is currently a mixture of agricultural grassland, scrub, exposed limestone pavement and woodland. There is an existing private quarry directly adjacent to the northern site boundary from which limestone aggregate has been extracted for many years. This quarry is regulated and uses occasional blasting to break out the material.

7.2 Study Area

The EIAR study area of the land, soils and geology will primarily focus on the wind farm site. In addition, the assessment will consider the lands adjacent to the site boundary, environs downstream of the site area to an appropriate extent. It will also include the grid connection route, 110kV substation location and any areas of works required along the road network to bring turbine components to site.

7.3 Sensitive Receptors

Any geological sensitive receptors will be identified at the outset of the scoping process and prior to site investigation.

Bedrock is close to or is at the surface over most of the proposed wind farm site. The soils underlying the site range from shallow to deep well drained renzinas, lithosols and podzolics with isolated areas of poorly drained gleys. There are no mapped areas of peat within the site boundaries, but peat deposits are located approximately 140m south of the site. Walkover surveys will confirm if peat is present within the site and should it be identified, peat depth investigations will be undertaken as part of site investigations at the site.

A number of bedrock formation underlie the site. The bedrock underneath the site includes the Oakport Limestone Formation which comprises massive limestone and the Oldchapel Limestone Formation and the Illaunagappul Formation, both of which comprise limestone and shale.

There are several karst features located within 2km of the proposed wind farm site which include seven turloughs including the Polbeg Turlough, the Rostaff Turlough, Lough Nakill and Shrull Turlough; three swallow holes and eight enclosed depressions. There are no mapped karst features according to the Geological Survey of Ireland (GSI) database within the proposed wind farm site, however a karst feature mapping survey is being carried out to confirm this and identify potential hazards.

According to the GSI's Landslide Susceptibility Mapping, the majority of the proposed development site and surrounding area is not at risk of landslides.

7.4 Desktop and Field Survey

A desk study shall be undertaken to acquire all available topographic, geological, geotechnical and hydrogeological data (including geotechnical and site stability data) for the proposed wind farm and surrounding area. The desk study will include a geotechnical risk assessment to identify and mitigate potential issues that may arise during the construction stage.

Consultations will be undertaken, and feedback requested from a number of statutory bodies, including:

- The Geological Survey of Ireland (GSI). Well data will be sourced and information on pNHAs, County Geological Sites (CGS) and any recorded Landslide Events (from the historical landslide database) in the region of the study area will be requested;
- Inland Fisheries Ireland (IFI);
- The Environmental Protection Agency (EPA);
- Mayo County Council Environment Officer; and

The assessment will include:

- Desk study of soils, subsoils, bedrock, geological, groundwater vulnerability, groundwater resources maps and aerial photography;
- Geomorphology assessment and mapping will be undertaken of geomorphological features;
- Aquifer assessment, in terms of the underlying aquifer and shallow groundwater system;
- Impact assessment on water schemes/ water supplies within 2km radius;
- Surface water and groundwater interaction (if present);
- Desktop assessment for the identification of potential karst features or landforms;
- Development of Geotechnical Risk register;
- Design of appropriate erosion and sediment control measures; development of erosion and sediment control procedures for implementation on site;
- Conduct preliminary geotechnical site investigations to inform the following:
    a. Identify any presence (or absence) of peat within the site and if found, confirm the depth of peat and any required specialist peat parameters e.g., shear vane strength etc if required;
    b. Access routes construction methodology;
    c. Cable route construction methodology;
    d. Foundation construction methodology;
    e. Borrow Pits / quarry potential;

f. Earthworks and Material Balance calculations (rock won on site in relation to rock fill required during construction of roads, hardstands, crane pads etc.);

g. Groundwater management, as required;

h. Drainage design;

i. Overburden (Soils) Storage and management;

j. Temporary works design; and

k. Site reinstatement, (including erosion control).

- Geohazard Mapping and Risk Assessment, verifying landslide hazards and associated risk if identified;
- Karst feature mapping and risk assessment, verifying karstic hazards and associated risk if identified; and
- Interpretation and reporting of all geological, hydrogeological and geotechnical data collected from preliminary site investigations.

7.5 Cumulative Effects

Cumulative impacts with other developments, including but not limited to other wind farms and the adjacent quarry, will be assessed for all sensitive receptors. A clear rationale will be provided outlining the criteria for determining the other developments considered and the zone of influence. Based on the site investigation findings and the likely impacts and risks that may be anticipated, and the potential cumulative effects that may arise, guidance will be provided towards the mitigation of these impacts and minimisation of the associated risks during construction, operation and decommissioning of the proposed wind farm.

7.6 Factors Scoped Out

Based on the nature of the proposed development, several potential effects are considered unlikely to give rise to significant impacts and are therefore proposed to be scoped out of further assessment in the EIAR.

A review of baseline information, including GSI geological mapping, soil and peat datasets, hydrological information, and the characteristics of the proposed development, has been undertaken to identify aspects that do not warrant further detailed assessment within the EIAR. The following factors are proposed to be scoped out on the basis that no credible impact pathway exists, the receptor is absent from the study area, or the potential for significant effects is negligible.

Contaminated Land: No historical or current land uses within the Site or the 2km study area indicate a risk of contaminated soils. The Site comprises agricultural grassland, forestry, and lowland habitats with no evidence of industrial activity, waste disposal, fuel storage, or other contamination sources. As such, contaminated land is scoped out of further assessment.

Soil Compaction During Operation: Operational activities will be limited to routine maintenance using established access tracks. No significant soil compaction or disturbance is expected during the operational phase. Operational soil compaction is therefore scoped out.

7.7 Questions to Consultees

1. Do you agree with the proposed study areas?
2. Do you consider the data sources identified for informing the EIA baseline characterisation to be appropriate?
3. Do you consider the proposed surveys for informing the EIA baseline characterisation to be appropriate?
4. Are there any receptors, assets, or resources not currently identified that you believe should be included in the EIAR?
5. Do you agree with the receptors and matters proposed to be scoped in and out of the EIA?
6. Do you require any shapefiles to assist in your assessment of the proposed development?

8. Hydrology and Hydrogeology

8.1 Introduction

The principal objectives of the Hydrology and Hydrogeology Chapter of the EIAR will be to identify and mitigate potential issues of the proposed wind farm to ensure that the impact on surface water and groundwater is minimised. A flood risk and a water frameworks directive assessment will also be completed in accordance with published guidelines.

8.2 Study Area

The EIAR study area of the Hydrology and Hydrogeology assessment will extend outside the final wind farm site boundary and will include watercourses which will receive surface water from within the proposed wind farm site. It will also include the grid connection route and areas of works along the turbine delivery route.

8.3 Sensitive Receptors

The proposed development site is located approximately 2.8km east of Lough Corrib. Lough Corrib is classified as an SAC, a pNHA, SPA and is also a geological heritage area.

There are no mapped rivers, streams or lakes located within the site, however the Black river flows alongside the northeastern and southwestern boundaries and enters Lough Corrib located approximately 3.6km southwest of the proposed wind farm site. A site walkover identified a drain flowing along the southern boundary of the northern section of the proposed wind farm site, approximately 75m east of turbine T10.

There are no European Sites within the proposed wind farm site. The Black river flowing along the northeastern site boundary is part of the Lough Corrib SAC. This river flows through the Rostaff Turlough pNHA, which is also part of the Lough Corrib SAC.

Several karst features including seven turloughs including the Polbeg Turlough, the Rostaff Turlough, Lough Nakill and Shrull Turlough; three swallow holes and eight enclosed depressions are located within 2km of the proposed wind farm site and some of these features are associated with the Black river.

The proposed wind farm site is located over a regionally important aquifer with karstified (conduit) flow (Rkc) and groundwater vulnerability is extreme across the site. A karst feature survey is being carried out to identify potential features within the boundaries of the proposed wind farm site.

8.4 Desktop and Field Surveys

A desk study shall be undertaken to acquire all published hydrological data for the proposed wind farm and surrounding area, including flood data and surface water quality data. Consultations will be carried out with a number of statutory bodies as stated in Section 19 of this document.

8.5 Hydrological Assessment

As part of the EIAR, TOBIN will establish baseline/existing hydrological conditions, identify potential impacts and propose appropriate mitigation measures. TOBIN will also:

- Identify the existing surface water drainage characteristics of the wind farm (including any natural or man-made drainage). A surface water feature survey/catchment assessment of the study area will be carried out to record all streams, rivers and lakes within the wind farm boundary and surrounding area; and
- Establish baseline water quality across the wind farm site. Any historical water quality for this area will be reviewed and existing EPA water quality data will also be examined as part of the study including any available data relating to the river catchments in this area. Where required, surface water samples will be collected in order to provide a baseline set of water quality results for the area. Biological assessments of the rivers will also be carried out, if required.

TOBIN will also assess the potential for siltation as a result of the proposed wind farm, particularly during the construction phase and propose mitigation measures for associated pollution control. Any existing siltation management practices will be reviewed as part of this assessment.

8.6 Karst Feature Mapping

The presence of karst features in the surrounding area and the karstic nature of the underlying bedrock aquifer suggests unmapped karst features may be present within the proposed wind farm site. A site walkover will be carried out with the aim of identifying potential karst features, particularly in the area of the proposed turbine locations.

Additional surveys and hydrogeological assessments will be carried out if karst features are identified.

8.7 Water Quality Assessment

TOBIN will complete the following as part of the EIAR:

- Conduct water sampling (surface water and groundwater where possible) in accordance with industry standards;
- Interpret and identify surface and groundwater linkages through specific water quality parameters;
- Establish baseline/existing conditions, identify potential impacts and propose appropriate mitigation measures.

8.8 Flood Risk Assessment

The Flood Risk Assessment for this project will include the following works:

- Review of available information, planning guidelines and historical flooding records;
- Topographical survey of site, including survey of smaller water courses;
- Assessment of hydrometric data (water levels and flows) for adjacent water bodies; and
- Assessment to take cognisance of climate change and the 1 in 100 year to 1 in 1000-year flood events.

The Flood Risk Assessment will be completed as part of the EIAR. This assessment shall include undertaking the following tasks:

- A visual Inspection of site and watercourses by hydrologist;
- Site topographical survey;
- Site survey of watercourses for hydraulic modelling;
- A review of existing information and planning guidelines;
- An assessment of historical flooding;
- Estimation of the 100 and 1000 MRFS (Mid-Range Future Scenario) design flood events at the proposed win dram site, as recommended by *'The Planning System and Flood Risk Management Guidelines'* (OPW, 2009). The hydrological assessment of the site may include:
    a. Statistical estimation of design flood flow from available hydrometric data;
    b. Analysis of watercourses using the OPW's Flood Studies Update Portal; and
    c. Estimation of design flood flow from catchment descriptors and rainfall.
- Hydraulic Modelling, using HEC-RAS or similar, of watercourses for the 100- and 1000-year design flood events. Where possible, the model shall be calibrated against historical and gauged flow data if available from the OPW and EPA hydrometric station network in the vicinity of the site;
- Modelling and assessment of one flood risk solution proposed by the design team; and Floodplain Mapping for the 100 and 1000-year MRFS design flood events for the watercourses.

8.9 Cumulative Effects

The potential for cumulative effects of the proposed project with other existing and proposed developments in the region will be undertaken. A 5 km radius was selected for the cumulative assessment of hydrology and hydrogeology effects as it represents a conservative zone of Influence beyond which cumulative interactions are not credible for this topic.

The primary potential for cumulative effects will occur during the construction phase of the proposed project, as this is when earthworks and excavations will be completed. The potential for cumulative effects during the operational phase of the proposed project will be significantly reduced as there will be no exposed excavations, there will be no sources of sediment to reach watercourses, no use of cementitious materials and fuels/oil will be kept to a minimum and bunded at the site. During the decommissioning phase, the potential cumulative effects are similar to the construction phase, but to a lesser degree with less ground disturbance.

8.10 Factors Scoped Out

Based on baseline information currently available and the nature of the proposed development, several potential hydrological and hydrogeological effects are considered unlikely to result in significant impacts and are therefore proposed to be scoped out of further assessment. Long-term operational impacts on surface water and groundwater regimes are not anticipated, as no ongoing abstractions, discharges or water dependent operational activities are proposed. The proposed development is not expected to influence regional groundwater levels or flow systems beyond the immediate construction footprint. therefore, wider aquifer impacts are

scoped out. Routine operational maintenance is minimal in scale and is not expected to generate measurable hydrological or hydrogeological effects.

8.11 Questions to Consultees

1. Do you agree with the proposed list of consultees?
2. Do you agree with the proposed study areas?
3. Do you consider the data sources identified for informing the EIA baseline characterisation to be appropriate?
4. Do you consider the proposed surveys for informing the EIA baseline characterisation to be appropriate?
5. Are there any receptors, assets, or resources not currently identified that you believe should be included in the EIA Report?
6. Do you agree with the receptors and matters proposed to be scoped in and out of the EIA?
7. Do you require any shapefiles to assist in your assessment of the proposed development?

9. Air Quality

9.1 Introduction

The purpose of the Air Quality assessment will be to assess the potential impacts of the proposed wind farm on the Air environments. The development of renewable energy is identified as having the potential to be a clean form of energy production and as such to have a potential net beneficial effect on the Air Quality environments.

Impacts will also be assessed cumulatively in conjunction with other construction phase off-site activities including turbine haul routes, quarrying and borrow pits. The assessments will include the impact of the proposed windfarm development during the construction phase and associated GHG emissions during construction and operation.

9.2 Policy and plan context

The assessment of air quality will be conducted with consideration of the relevant legislation and guidance including the following EPA guidelines:

- *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)* (EPA, 2003);
- *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA 2015a); and
- The EPA EIAR Guidelines (2022).

In order to reduce the risk to health from poor air quality, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are health or environmental-based levels for which additional factors may be considered. For example, natural background levels, environmental conditions and socio-economic factors may all play a part in the limit value which is set. The statutory ambient air quality standards in Ireland are outlined in S.I. No. 180 of 2011 Air Quality Standards Regulations 2011 (hereafter referred to as the 'Air Quality Regulations'), which incorporate the ambient air quality limits set out in Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (hereafter referred to as 'the CAFE Directive'), for a range of air pollutants.

The assessment of air quality will be conducted with consideration of the relevant legislation and guidance including:

- *Guidance on the Assessment of Dust from Demolition and Construction V1*. (IAQM, 2016);
- *A Guide to The Assessment Of Air Quality Impacts On Designated Nature Conservation Sites* (Version 1.1) (IAQM, 2020);
- The *TII Air Quality Guidelines* (TII, 2011);
- German VDI (2002) *Technical Guidelines on Air Quality Control – TA Luft*;
- *Guidelines for Assessment of Ecological Impacts of National Roads Schemes* (hereafter referred to as the 'TII Ecological Guidelines') (TII, 2009);
- *Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report* (European Commission, 2017);

- United Kingdom (UK) Department of Environment Food and Rural Affairs (DEFRA) Part IV of the Environment Act 1995: *Local Air Quality Management Policy Guidance (PG16)* (hereafter referred to as LAQM (PG16)) (DEFRA, 2016);
- Part IV of the Environment Act 1995: Local Air Quality Management Technical Guidance (TG16) (hereafter referred to as LAQM (TG16)) (DEFRA, 2018);
- UK Highways Agency (Highways England) *Design Manual for Roads and Bridges (DMRB) – LA 105 Air Quality* (hereafter referred to as 'LA 105 Air Quality') (Highways England, 2019);
- World Health Organization (WHO) *Air Quality Guidelines for Particulate Matter, Ozone, Nitrogen Dioxide and Sulphur Dioxide Global* (Update 2021) (hereafter referred to as the 'WHO Air Quality Guidelines') (WHO, 2021); and
- Local Authority air quality and planning guidance.

9.3 Sensitive Receptors

The surrounding area includes a number of potential air-quality sensitive receptors, which may include residential properties, schools, childcare facilities, healthcare facilities, and other locations where prolonged human exposure may occur.

Measurement results from air monitoring stations closest to the site will be reviewed and evaluated in order to assess the current environment in relation to sensitive (residential) receptors. The air quality assessment will consider potential effects at these receptors and will take account of standard good practice mitigation measures typically employed to minimise impacts on sensitive receptors, particularly during the construction phase. Detailed mitigation measures will be defined as part of the EIAR.

9.4 Desktop and Field Survey

A desktop review of available baseline air quality data within the study area will be undertaken. Assessment criteria for the impact of dust during the construction phase are set out in the TII guidelines (TII, 2011) and the Institute of Air Quality Management (IAQM) guidelines (IAQM, 2014). These are used to assess the impact of dust emissions from construction and demolition activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. It is important to note that the predicted impacts associated with the earthworks and construction phases of the proposed development are short term and temporary in nature.

The following data sources will be referred to during the air quality assessment:

- EPA National Ambient Air Quality Monitoring Data Archive;
- EPA Air Quality in Ireland 2021 Report and previous reports (1997 – 2020);
- EPA Geo Portal Data and Mapping; and
- EPA Integrated Pollution Control Licences.

Air quality monitoring programs have been undertaken in recent years by the EPA and Local Authorities. The most recent annual report on air quality, the *Air Quality Monitoring Annual Report 2021* (EPA, 2022), details the range and scope of monitoring undertaken throughout Ireland. A review of existing baseline levels of NO_2, PM10 and PM2.5 based on extensive long-

term data from the EPA are well below ambient air quality limit values in the vicinity of the proposed wind farm.

9.5 Cumulative Effects

The air quality assessment will also consider the potential cumulative impacts of other developments in the area including the cumulative contribution to decarbonisation strategies and national GHG reduction targets.

9.6 Factors Scoped Out

Operational phase of a wind farm does not involve combustion processes or other emission generating activities. Therefore, operational air quality impacts are not anticipated and are excluded from further consideration.

Given the expected low level of operational traffic and the absence of congestion sensitive road links in the surrounding area, operational traffic emissions are also proposed to be excluded. Accordingly, the air quality assessment in the EIAR will focus on construction phase emissions only, where the potential for short term dust generation and construction traffic exhaust emissions may warrant further evaluation.

9.7 Questions to Consultees

1. Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?
2. Are there any receptors, assets, or resources not identified that you would like to see included in the EIAR Air Quality chapter?
3. Do you agree with the proposed additional (secondary and tertiary) mitigation measures, and are these measures appropriate?
4. Do you agree with the receptors/matters that are proposed to be scoped in and out of further assessment?

10. Climate

10.1 Introduction

The purpose of the Climate assessment will be to assess the potential impacts of the proposed wind farm on the Climate environments. The development of renewable energy is identified as having the potential to be a clean form of energy production and as such to have a potential net beneficial effect on the Climate environments.

The climate impact assessment will consider the targets and objectives of the latest Climate Action Plan (2024) and how the project will contribute to achieving these targets. The assessment will also consider the direct and indirect effects of the project on climate change in the context of the current and proposed land use and consideration of national objectives on forestry development.

10.2 Policy and Plan Context

In order to reduce the risk due to climate change, National and European statutory bodies have set targets for future GHG emissions. Ireland has signed up to the Climate Action Plan 2021, which commits Ireland to a legally binding target of net-zero GHG emissions no later than 2050, and a reduction of 51% by 2030. This plan specifically targets delivery of up to 80% renewable electricity by 2030.

The assessment of Climate will be conducted with consideration of the relevant legislation and guidance relating to climate which are set out in the following sections. In addition to specific climate guidance documents, the following guidelines were considered and consulted in the preparation of this Chapter:

- *Advice Notes on Current Practice (in the preparation of Environmental Impact Statements)* (EPA, 2003);
- *Draft Advice Notes for Preparing Environmental Impact Statements* (EPA, 2015); and
- The EPA EIAR Guidelines (EPA, 2022).

The assessment of climate will be conducted with consideration of the relevant legislation and guidance including:

- Climate Action and Low Carbon Development Act (Act. No. 46 of 2015) (hereafter referred to as the "Climate Act");
- Department of Communications, Climate Action & Environment (DCCAE) *National Mitigation Plan* (DCCAE, 2017a);
- Sustainable Energy Authority of Ireland (SEAI) Public Sector Climate Action Roadmap Guidance. (2025);
- Climate Action Plan 2024 (hereafter referred to as the CAP) (DECC, Dec 2023);
- Department of Transport, Tourism and Sport (DTTAS) *Transport – Climate Change Sectoral Adaptation Plan* (DTTAS, 2019);
- *Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment* (European Commission, 2013);

- General Scheme of the Climate Action (Amendment) Bill 2019 (hereafter referred to as the General Scheme) (DECC, 2021);
- *European Commission 2030 Climate and Energy Policy Framework* (European Commission, 2014);
- Transport Infrastructure Ireland (TII) *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (TII, 2011);
- Design Manual for Roads and Bridges (DMRB): *LA 114 – Climate* (UKHA, 2019);
- Institute of Environmental Management & Assessment (IEMA) *Assessing GHG Emissions and Evaluating their Significance* (IEMA, 2022);
- *IEMA EIA Guide to: Climate Change Resilience and Adaptation* (IEMA, 2020a);
- *IEMA GHG Management Hierarchy* (IEMA, 2020b);
- *Technical guidance on the climate proofing of infrastructure in the period 2021-2027* (European Commission, 2021a);
- *Forging a climate-resilient Europe - the new EU Strategy on Adaptation to Climate Change* (European Commission, 2021b);
- Climate Action and Low Carbon Development (Amendment) Act 2021 (No. 32 of 2021) (hereafter referred to as the "2021 Climate Act"); and
- Local Authority's climate and planning guidance.

10.3 Sensitive Receptors

Measurement results from the relevant air monitoring stations will be reviewed and evaluated in order to assess the current environment in relation to sensitive (residential) receptors.

10.4 Desktop and Field Survey

Climate is defined as the average weather over a period of time, whilst climate change is a significant change to the average weather. Climate change is a natural phenomenon but in recent years human activities, through the release of GHGs, have impacted on the climate (Intergovernmental Panel on Climate Change (IPCC), 2022). The release of anthropogenic GHGs is altering the Earth's atmosphere resulting in a 'Greenhouse Effect'. This effect is causing an increase in the atmosphere's heat trapping abilities resulting in increased average global temperatures over the past number of decades. The release of CO_2 as a result of burning fossil fuels, has been one of the leading factors in the creation of this 'Greenhouse Effect'. The most significant GHGs are CO_2, methane (CH_4) and nitrous oxide (N_2O).

For the purposes of this assessment, the definition outlined in Council Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (European Union 2009) for GHGs has been used. In 'Annex V, C. Methodology Point 5' the relevant GHGs are defined as CO_2, CH_4 and N_2O. In 2022, CO_2 accounted for 60.4% of total GHG emissions in Ireland, while CH_4 and N_2O combined accounted for 38.4%. Agriculture is the single largest contributor to the overall emissions, at 38.4% (EPA, 2023).

10.5 Cumulative Effects

The climate assessment will consider the potential cumulative effects of the proposed development in combination with other existing, permitted and reasonably foreseeable plans and projects. This will include an assessment of cumulative greenhouse gas emissions and the collective contribution of mitigation measures to national and sectoral decarbonisation strategies and Ireland's greenhouse gas (GHG) reduction targets.

The assessment considers climate effects at local, regional and national levels, with particular reference to Ireland's climate policy framework, including national greenhouse gas reduction targets and sectoral decarbonisation strategies.

10.6 Factors Scoped Out

A review of the proposed development, relevant climate policy, baseline conditions, and the nature of potential GHG emission sources has been undertaken to identify aspects that do not warrant further detailed assessment within the EIAR. Significant adverse climate impacts during decommissioning are scoped out on the basis that decommissioning activities will be short-term and limited in scale, with GHG emissions arising only from plant and vehicle use. These emissions will be substantially lower than those generated during construction and can be effectively managed through standard best-practice measures, and no significant negative climate effects are anticipated. While decommissioning will mark the end of renewable energy generation at the Site, this does not constitute a negative climate impact under EIAR methodology. National climate policy assumes ongoing decarbonisation of the electricity system and the replacement or repowering of renewable assets over time, and the cessation of generation at the end of the project's life is not treated as an adverse climate effect. The only direct climate effects associated with decommissioning relate to short-term, low-level GHG emissions, which are not considered significant. Accordingly, decommissioning-phase climate impacts are scoped out of detailed assessment.

Further assessment for Climate Change Risk for the Construction, Operation & Decommissioning phases is scoped out based on findings from the National Climate Change Risk Assessment (NCCRA) which already indicates significant risks requiring urgent action within the next five years including:

- The risk of disruption and damage to communications and energy distribution infrastructure due to extreme wind.
- The risk of disruption and damage to buildings and transport infrastructure due to extreme wind, coastal erosion and coastal flooding.

10.7 Questions to Consultees

1. Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?
2. Are there any receptors, assets, or resources not identified that you would like to see included in the EIA Report climate chapter?
3. Do you agree with the proposed additional (secondary and tertiary) mitigation measures, and are these measures appropriate?

4. Do you agree with the receptors/matters that are proposed to be scoped in and out of further assessment?
5. Are you happy with the proposed study area?

11. Shadow Flicker

11.1 Introduction

The purpose of the Shadow Flicker assessment will be to assess the potential effects of the shadow flicker from proposed wind turbines to sensitive receptors in the surrounding environment.

11.2 Study Area

The shadow flicker assessment will be carried out using windPRO modelling software and in accordance with the guidelines set out in the Wind Energy Development Guidelines (2006). Due regard will also be given to the Draft Revised Wind Energy Development Guidelines (December 2019).

In addition, account will be taken of any relevant National Planning Statements or updated policy guidance relating to wind energy development that may be in force prior to the determination of the application. Consideration will also be given to relevant UK guidance, including the Update of UK Shadow Flicker Evidence Base (Parsons Brinckerhoff, 2011).

11.3 Sensitive Receptors

The envelope within which sensitive receptors will be evaluated will be determined by the size, scale and layout of the final wind farm. The current 2006 WEDG outline that at distances greater than ten rotor diameters from a turbine, the potential for shadow flicker is very low. To ensure that a conservative approach is taken, the assessment will initially consider all sensitive receptors within 2km of the proposed turbines. The design will also consider the 2019 Draft Guidelines and any subsequent updates.

11.4 Desktop and Field Survey

The extent and impact of Shadow Cast Analysis and Shadow Flicker depends on the relative positions and orientation of nearby houses and wind turbines, the presence of windows facing on to the proposed wind farm, the absence/presence of vegetation or other obstructions between the houses and the wind farm etc. This will be assessed as part of the EIA.

WindPRO Computer Modelling software will be employed, for this element of the assessment, through the use of the shadow module. This facilitates calculation and documentation of flickering effects in terms of hours per year during which a specific receptor or an area would be exposed to flickering from nearby turbine rotors.

For each receptor identified, maximum minutes of potential shadow flicker per day are calculated. The software can calculate the worst-case results (sun always shining in daytime, turbines always rotating and wind direction "worst case") or the "real expected values", based on assumptions on solar statistics and operating hours divided by wind direction. Typically, calculations are made in a worst-case scenario assuming that each sensitive receptor location has windows on all sides (i.e., glasshouse effect) but can also allow for user defined windows on properties.

Results will be presented in the form of calendars, cumulated hours with flicker or, for the area calculation, as maps of flicker hour isolines.

11.5 Cumulative Effects

Cumulative impacts of shadow flicker from existing operational or consented wind farms will also be included in the assessment. The configuration of existing or consented wind farms can be added to the model and is particularly relevant to consider properties which may experience low levels of shadow flicker from one or more wind farms on their own but may be significantly impacted by adjacent wind farms.

11.6 Factors Scoped Out

Shadow flicker assessment can generally be scoped out where turbines are located at sufficient distance from sensitive receptors, typically beyond 10 times the rotor diameter as per Scottish Government *Planning Advice* for Onshore Wind Turbines (2014). This is in accordance with WEDGs for Planning Authorities (2006).

Where no windows are present, no significant impact will occur, and no mitigation will be required and therefore scoped out of further assessment.

11.7 Questions to Consultees

1. Are the consultees content with the proposed methodology and scope for the shadow flicker assessment?
2. Do the consultees have any information, particularly with reference to new guidance, which should be taken into consideration?
3. Do you require any shapefiles to assist you in your review of the proposed development?
4. Are you happy with the proposed study area for the assessment?
5. Are you satisfied with the proposed scoped out elements?

12. Material Assets

12.1 Introduction

This chapter will detail the material assets relevant to the proposed development. For proposed wind farm developments, the following material assets are typically considered: Telecommunications, Aviation, Electrical Infrastructure, Water Supply and Wastewater Infrastructure.

Any telecommunications links that cross the site and the surrounding area will be mapped and the possibility of interference occurring to telecommunications and radio transmissions as a result of the proposed wind turbines will be assessed as well as potential impacts for commercial/private aviation authorities and associated communications. In terms of electrical assets, overhead and underground cables on or near the site will be mapped and will need to be accounted for in the wind farm design, particularly any proposed electrical cabling and appropriate exclusion corridors specified. Any mains, gas networks infrastructure, water supply pipes and foul wastewater pipes and treatment on or near the site will be identified and assessed.

12.2 Study Area

The study area for Material Assets will be asset specific and defined by the zone of influence of each infrastructure type. The approach reflects the differing operational characteristics, statutory consultation requirements, and potential interaction mechanisms associated with aviation, telecommunications, utilities, and energy infrastructure. The operators of telecommunications and aviation assets in the vicinity of the proposed development will be identified, and through consultation, it will be determined whether there is any potential interaction or interference with the assets within the study area as a result of the proposed development. Uisce Eireann and ESB Networks will be contacted in relation to electrical and water/wastewater infrastructure and Gas Networks Ireland will be contacted in relation to known gas infrastructure.

12.3 Sensitive Receptors

As part of the study of potential impact to material assets by the proposed development, identified stakeholders will be approached with project details and asked to revert with any potential impacts on their communications and flight management infrastructure. An initial list of telecommunications consultees has been prepared and will be added to as necessary throughout the project.

12.4 Desktop and Field Survey

Telecommunications Impact Assessment:

- 2D software modelling of all operator links, telecommunications link analysis details including calculations for all Fresnel Zones clearance/interference based on turbine site layout in shapefile format;
- Tabulated results for each operator for each telecoms link, including calculations for interference/clearance zones;

- Updating Report including Mitigation Measure Proposals (subject to Telecoms Operator Agreement);
- 3D software modelling of all operator links, telecommunications link analysis details including calculations for all Fresnel Zones clearance/ interference based on turbine site layout based on final set of turbine coordinates;
- Telecoms Operator Consultations & Agreement on Mitigation Measure Proposals.

Aviation Impact Assessment:

- Desktop assessment of all identified aviation infrastructure (airports, airfields aerodromes & associated flight paths etc) which could potentially be impacted by the proposed project;
- Instrument Flight Procedures review;
- Safeguarding Assessment Statement including Obstacle Limitation Surfaces, Annex 15 surfaces, Visual Flight Procedure;
- Consultation with IAA, Airport Authorities, and the Irish Air Corps/Dept. of Defence.

12.5 Cumulative Effects

The potential for cumulative impacts is low because the interference that is generated from a wind turbine is directly related to the presence of that turbine in the path of television or communication link signal and less likely to be generated from multiple cumulative reflections. However, consideration will be given to other wind farm developments and relevant infrastructure as part of this assessment.

In assessing cumulative effects on material assets, consideration will be given to whether additional or contingency mitigation measures may be required to avoid or minimise interactions with infrastructure. The suitability and necessity of such measures will be informed through consultation with asset operators and addressed in detail at the assessment stage.

12.6 Factors Scoped Out

The proposed development will not introduce any processes, equipment, or infrastructure capable of generating electromagnetic interference (EMI) beyond the very low-level emissions associated with modern wind turbines, which are designed to comply with international EMI standards. Given the compatibility of contemporary turbine technology with telecommunications, broadcast systems, and mobile networks, and the availability of established safeguarding protocols, significant EMI effects are not anticipated and are proposed to be scoped out of further assessment.

Certain material asset considerations are also proposed to be scoped out, as they are not likely to experience significant effects from the proposed development. These include local water supply, and wastewater infrastructure during the operational and decommissioning phases as there will be no potential for disturbance. Likewise, rail infrastructure is excluded due to the absence of proximity, operational dependency, or any foreseeable interaction with the proposed project. These factors will not be assessed further in the EIAR.

Decommissioning-phase impacts on aviation, telecommunications, or material assets are also proposed to be scoped out. Decommissioning activities will be confined to the original

construction footprint and will not introduce new infrastructure or new safeguarding requirements. Crane operations may require routine notification to aviation authorities, but such interactions are procedural, short-term, and not significant in EIA terms. The removal of turbines will progressively eliminate any operational safeguarding considerations, resulting in a net reduction of potential effects.

Given the limited duration of construction and decommissioning activities, the compatibility of modern turbine technology with telecommunications systems, and the availability of established aviation safeguarding procedures, no significant effects are anticipated for the scoped-out factors identified above.

12.7 Questions to Consultees

1. Do you agree with the approach to defining interactions and proposed study areas and assessment approach?
2. Do you agree that the data sources listed to inform the EIA baseline characterisation are appropriate?
3. Do you agree that the surveys proposed to inform the EIA baseline characterisation are appropriate?
4. Are any receptors/assets/resources not identified that you would like to see included in the EIA Report?
5. Do you agree with the proposed additional (secondary and tertiary) mitigation measures and is this mitigation appropriate?
6. Do you agree with the receptors/matters that are proposed to be scoped in and out of the EIAR?
7. Do you require any shapefiles to assist you in your review of the proposed development?

13. Noise and Vibration

13.1 Introduction

The Noise and Vibration chapter of the EIAR will assess the potential impacts of the proposed development on sensitive receptors in the surrounding environment during the construction, operational and decommissioning phases. The principal objectives of the Noise and Vibration assessment will be to specify appropriate limit values and mitigation measures to ensure that the specific limits can be achieved and to minimise impact on the noise sensitive receptors where possible.

The assessment of wind turbine noise will be undertaken with reference to the most appropriate guidance documents relating to environmental noise and vibration, such as the Institute of Acoustics (IOA) publication, A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise (May 2013), and its Supplementary Guidance Notes, hereafter referred to as the IOA GPG.

In addition to these specific guidance documents for the assessment of noise and vibration, the EPA EIAR Guidelines (2022) will be followed when preparing the EIAR chapter.

13.2 Study Area

The study area for the operational phase will cover at least the area predicted to exceed 35 dB L_{A90} when all existing and proposed turbines are at their maximum output noise level and will include all identified Noise Sensitive Locations (NSL's) that are within this area.

Potential NSL's to be considered will include residential dwellings, commercial properties, schools, derelict buildings, and pre-planning infrastructure (including relevant properties with planning permission). All properties 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.

For the construction phase, all properties within 500m of the proposed wind farm construction activities or the nearest NSL if greater than 500m will be considered in the assessment. The distance considered will be smaller for the grid connection works, which will be transient in nature and thus will not affect any one property for more than a few days.

13.3 Sensitive Receptors

Initial iterations of the noise model will be developed and expected noise levels predicted at the nearest noise sensitive locations. This initial exercise will be used to inform the selection of appropriate baseline noise monitoring locations in the vicinity of the wind turbines.

13.3.1 Background Noise Survey

A background noise monitoring survey has recently been completed at representative NSL's in the vicinity of the proposed development site. All measurements will be conducted in accordance with the IoA document "A Good Practice Guide to the Application of ETSU-R-97 for The Assessment and Rating of Wind Turbine Noise" (GPG) and the associated supplementary guidance notes.

The results of the background noise survey will be used to identify appropriate noise criteria for the various phases of the proposed development with reference to the appropriate guidance documents.

13.4 Impact Assessment

The baseline work will characterise the noise climate existing in the area and facilitate the quantification of potential noise impact which may arise from the proposed development. The potential noise and vibration impacts will be considered for the following phases:

(I) Construction Phase;

(II) Operational Phase; and

(III) Decommissioning Phase.

A cumulative assessment that includes existing and consented wind farms, and other relevant developments, will be undertaken in accordance with best practice guidance.

13.4.1 Construction Phase

Construction noise levels associated with various elements of the proposed development will be predicted at the facades of the closest noise-sensitive locations in the vicinity of the development by developing detailed construction calculations. All predictions will be conducted in accordance with the guidance contained in ISO 9613:1996: Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation. Source noise levels will be obtained from BS 5228 2009 +A1 2014 Code of practice for noise and vibration control on construction and open sites.

Vibration during construction will also be considered regarding the potential impact on residential amenity and structural damage to buildings.

13.4.2 Operational Phase

Noise levels at all the identified noise sensitive locations will be predicted using a proprietary noise modelling package. All predictions will be done in accordance with ISO 9613: Acoustics – Attenuation of Sound Outdoors, Part 2: General Method of Calculation (ISO, 1996) using the recommended calculation settings outlined in the IOA GPG. The use of a computer-based noise model lends itself to ongoing evaluation of design changes and provides output that is detailed and extensive. Noise contour maps will be generated for the site noise models illustrating turbine noise levels in the study area.

The results obtained from the prediction calculations will be used to assess the likely noise impact from the operation of the proposed turbines. This will include the assessments at various noise sensitive locations with consideration of various wind direction sectors. Where necessary, noise control measures will be considered.

Discussion of other issues will be undertaken where appropriate (e.g., tonality, low frequency noise/Infrasound, amplitude modulation etc.).

The potential noise impact associated with road traffic movements and other ancillary parts of the development including the substation and any other permanent source of noise will be assessed and included as part of the noise chapter.

13.5 Cumulative Effects

A cumulative assessment will be undertaken, considering; existing and permitted wind farms and the nearby quarry insofar as these are reasonably likely to interact with noise generated by the proposed development.

13.6 Factors Scoped Out

A review of the proposed development, baseline noise and vibration environment, and relevant guidance has been undertaken to identify aspects that do not warrant further detailed assessment within the EIAR. Operational traffic noise is proposed to be scoped out on the basis that routine vehicle movements during operation will be minimal, infrequent, and well below levels that could give rise to perceptible noise increases at nearby noise-sensitive locations.

Vibration effects during the operational and decommissioning phases are also proposed to be scoped out. Operational activities do not involve any plant or processes capable of generating perceptible vibration, and decommissioning works will be limited in scale and duration, with typical dismantling activities occurring at sufficient separation distances from sensitive receptors to ensure vibration levels remain well below thresholds for human perception or structural damage.

13.7 Questions to Consultees

The following questions are addressed to the consultees.

1. Do you agree with the proposal to exclude the assessment of construction and operational vibration from the scope for further assessment?
2. Do you agree with our proposed approach to the noise assessment and the application of relevant standards and guidance?
3. Do you agree that an assessment of vibration and low-frequency noise from wind farm operation can be excluded from further assessment?
4. Do you require any shapefiles to support your assessment of the proposed development?

14. Landscape and Visual Impact Assessment

14.1 Introduction

The purpose of this section is to describe the scope of work and methods to be applied in the identification and assessment of landscape and visual impacts associated with the proposed wind farm.

14.2 Study Area

The current 2006 WEDG 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:

(I) 15km radius for blade tips up to 100m;

(II) 20km radius for blade tips greater than 100m; and

(III) 25km in order to incorporate features of national or international renown.

In the case of this project, the blade tips will be over 100 high and, thus, the minimum ZTV radius required is 20km from the outermost turbines of the proposed development.

Consideration will also be given to the guidelines set out in the Draft Revised Wind Energy Guidelines (December 2019) and various Scottish Natural Heritage (known as NatureScot) wind farm guidelines in respect of landscape and visual impact.

14.3 Sensitive Receptors

In terms of landscape receptors, the proposed development and much of the northern extent of the study area within County Mayo is contained within the 'Landscape Policy Area 4 – Drumlin and Inland Lowland'. This landscape policy area is considered the most robust in the county in respect of the county 'landscape sensitivity matrix' and is designated with a 'high-medium' landscape sensitivity in relation to wind farm developments. It is important to note that this is the lowest classification for wind farm developments out of all four policy areas identified in the county. Other sensitive landscape receptors include the lakelands located in the western extent of the study area.

Whilst the development is wholly located in County Mayo, it is important to consider wind energy policy/designations in the adjoining counties, as the proposed development may have the potential to influence these landscape areas.

In terms of sensitive visual receptors, the most notable of these in relation to the proposed development relates to the nearest surrounding residential receptors (local community receptors), in addition to designated scenic views and heritage features such as Ross Errilly Friary located to the south of the proposed array.

The wider study area also includes numerous designated scenic views, prominent heritage features and waymarked walking trails, many of which are contained in the surroundings of Lough Corrib.

Visual receptors will be selected from the following categories;

- Designated scenic routes/views (CDP)

- Local Community views (roads and residences within approximately 5km)

(I) Centres of Population

(II) Major Transport Routes

(III) Amenity, Heritage and Tourism locations

14.4 Survey Methods

14.4.1 Desktop and Field Survey

The desktop study will comprise of the following:

(I) Prepare and review of ZTV maps, which indicates areas from which the development is potentially visible in relation to terrain within the Study Area;

(II) Review of relevant County Development Plans, particularly with regard to sensitive landscape and scenic view/route designations;

(III) Selection of potential Viewshed Reference Points (VRPs) from key visual receptors to be investigated during fieldwork for actual visibility and sensitivity; and

(IV) Preparation of an initial VRP selection report and associated map for consultation purposes (Planning Authorities).

Fieldwork will consist of:

- 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.

14.5 Impact Assessment Methodology

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 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 significant effects associated with the proposed development 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 Figure 14-1.

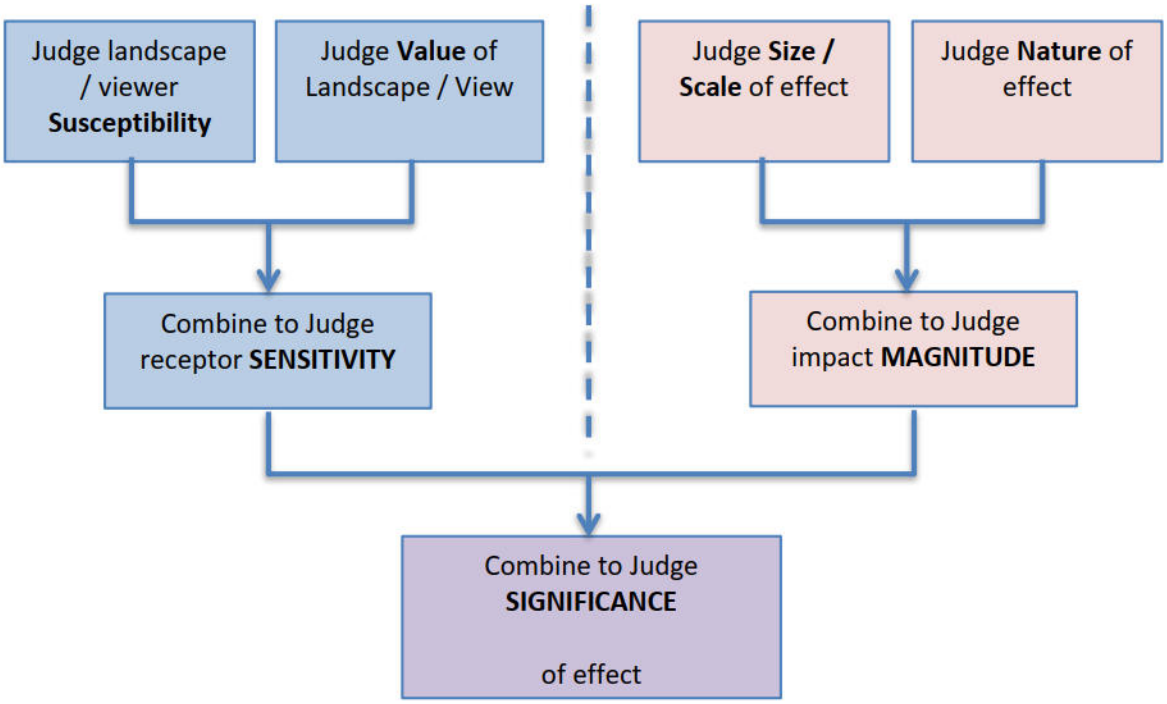


Figure 14-1: Method for assessing Landscape Impact significance and Visual Impact significance (based on GLVIA – 2013)

14.5.1 LVIA Assessment tools / Techniques

The following assessment tools and techniques will be considered for this project and applied as appropriate and beneficial to the assessment.

Photomontages

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

It is imperative that base photography is captured in the clearest of viewing conditions, especially where existing turbines are contained within the view.

Route Screening Analysis (RSA)

The project team landscape specialist has developed a 360° vehicle mounted photo-capture unit to gather imagery every second (approximately 15m intervals). The images are then synchronised with a 3D model of the proposed development for rapid analysis of screening levels. When used in vegetated lowland landscapes, RSA has shown actual visibility to be much less than indicated by traditional ZTV maps.

Theoretical Visual Intensity (TVI) Mapping

Because traditional ZTV maps are of limited value in illustrating likely comparative visual prominence over distance, a more advanced form of visibility mapping will also be utilised, which takes into account both the scale in relation to distance of the proposed development and the degree to which it is visible within the 'bare-ground' terrain context. TVI mapping will highlight, at the baseline stage, those areas that have the most potential to be significantly

affected by views of the proposed development as well as areas where visual impacts are not likely to be significant.

360° On-line Photomontage Viewer

This is principally a design team collaboration tool but can be used for consultation purposes also. All viewpoint photography will be captured in 360° and early-stage design iterations will be presented on an on-line photomontage viewer, which is calibrated to a 24-inch screen allowing the viewer to pan around the image as if turning their head. This resource allows the project team to efficiently compare design options and discuss potential impacts / design solutions.

14.6 Cumulative Effects

Cumulative impacts will be assessed in accordance with the SNH guidance note for 'Assessing the cumulative impact of onshore wind energy developments' (2012) taking account of 'Combined Views' 'Succession Views' and 'Sequential Views'. The landscape specialist will use their own on-line viewer (see detailed description above) to compare 360° photography against corresponding 360° cumulative Wireframe images to aid the cumulative impact assessment.

In assessing cumulative landscape and visual effects, consideration will be given to the potential role of mitigation measures where significant effects are identified. The suitability and effectiveness of any such measures will be examined at LVIA stage, having regard to cumulative interactions with other existing or proposed developments and informed by consultation.

14.7 Factors Scoped Out

The following factors are proposed to be scoped out of further assessment as they are not expected to result in likely significant landscape or visual effects:

- Decommissioning-phase effects, as activities will be short-term, largely confined to existing construction footprints, and significantly less visually intrusive than construction works.
- Operational lighting effects other than aviation lighting, as no additional lighting is proposed and standard substation/security lighting will be low-level and screened.
- Visual impacts on distant receptors beyond the defined study area, where ZTV analysis indicates no theoretical visibility and no potential for significant effects.
- Landscape effects on areas with no predicted visibility, where baseline appraisal confirms no change to landscape character or perceptual qualities.
- Temporary construction lighting, which will be minimal, short-duration and restricted to working hours, with no anticipated night-time visibility.
- Landscape effects on urban centres outside the wider study area.

14.8 Questions to Consultees

1. Do you agree with the proposed study areas for the various components of the LVIA?
2. Do you agree that the data sources identified to inform the LVIA baseline characterisation are appropriate?
3. Do you agree with the initial selection process for viewpoints?

4. Are there any receptors or viewpoints not identified that you would like to see included in the LVIA?
5. Do you agree with the proposed mitigation measures in the event significant effects are identified, and do you consider these measures appropriate?
6. Do you agree with the receptors and effects proposed to be scoped in and out of the LVIA?
7. Do you agree with the proposed LVIA assessment approach?
8. Do you require any shapefiles to assist in your assessment of the proposed development?

15. Cultural Heritage

15.1 Introduction

This section describes the scope of work and proposed methodology to be applied in the identification and assessment of cultural heritage impacts associated with the proposed development. This includes:

- An overview of the relevant legislation, policy and guidance;
- A description of the relevant study area;
- Assessment methodologies to be applied;
- A summary of sensitive receptors; and
- An overview of the potential environmental effects of the proposed development.

The cultural heritage assessment will consider the effects on archaeological, architectural and cultural heritage as part of the EIA. Archaeological heritage refers to sites and areas of archaeological significance. Cultural heritage is a collective term for features/structures of architectural, archaeological or local (folklore/traditional) heritage merit. Architectural heritage refers to recorded historical buildings and designed landscapes.

15.2 Study Area

IAC Archaeology will map the study area in GIS and identify the cultural heritage resource within the broader area. The various data sources (including but not limited to OSI mapping and historic mapping, aerial photography, archaeological sites, architectural sites and other cultural heritage sites) will be presented as GIS datasets which will be combined with desktop data. The study area will be defined as an area measuring up to 10km from the proposed wind farm with an area of 50m studied from any associated grid connection route or turbine delivery route works areas. Full consultation will be carried out with the Landscape and Visual specialist as part of this assessment and may include requests for specific photomontages or wire modelling.

15.3 Sensitive Receptors

The archaeological and architectural sites noted above will be reviewed in GIS to ascertain whether there is a potential for direct or indirect impacts or for impacts on the setting of cultural heritage sites. Where sites are in visually prominent locations and may be susceptible to impacts on their setting from visually prominent development in the wider area these will also be mapped. Sensitive receptors within and in the vicinity of the project study area will be identified as part of the scoping, constraints and EIAR process. These will include National Monuments, sites with Preservation Order, Recorded Monuments, Protected Structures, designed landscapes, structures listed within the National Inventory of Architectural Heritage (NIAH) survey and sites and structures of archaeological or architectural heritage merit that may be identified during the course of the assessment, which are not included in any existing register or record.

There are four recorded archaeological monuments located within the proposed development area. The proposed layout will avoid all of the monuments except the zone of archaeological

potential associated with a field system (MA123-038), which will be crossed by an access road. The closest monument to the development comprises a hill fort (MA123-041001), located 68m west of Turbine 13.

There are ten sites that are listed as National Monuments or sites with Preservations Orders located within 10km of the proposed development. The closest is Kinlough Castle (National Monument 95), located c. 730m to the southeast of Turbine 11.

15.4 Desktop and Field Surveys

The assessment of the archaeological, architectural and cultural heritage resource will be conducted with consideration of the relevant legislation and guidance including:

- National Monuments Acts 1930 (as amended);
- The Planning and Development Act 2000 (as amended);
- The Heritage Council Act 1995 (as amended).
- European Communities (EC) (Environmental Impact Assessment) (Amendment) Regulations 1999;
- Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 2000;
- Draft Advice Notes for Preparing Environmental Impact Statements (Environmental Protection Agency (EPA) 2015);
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA 2022);
- Frameworks and Principles for the Protection of the Archaeological Heritage (Department of Arts, Heritage, Gaeltacht and Islands 1999); and
- Architectural Heritage Protection Guidelines for Planning Authorities (Department of the Environment, Community and Local Government (DECLG) 2011).

A number of phases of research will be carried to inform the assessment. The first phase comprises a paper survey of all available archaeological, historical and cartographic sources. The second phase involves a field inspection of the development area, which has already been completed.

The paper survey comprises analysis of the following resources:

- Record of Monuments and Places for Counties Galway and Mayo;
- Sites and Monuments Record for Counties Galway and Mayo;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Mayo County Development Plan;
- Aerial photographs & LiDAR coverage; and

- Excavations Bulletin (1970-2026)

All cultural heritage work will be cognisant of best current practice. IAC Archaeology have undertaken preliminary surveys, including a field inspection, to ensure that any potentially significant cultural heritage constraints are noted as early as possible.

Cultural heritage sites located in the immediate vicinity of the proposed development, which could be subject to direct physical impacts during the construction phase, will be highlighted for review of design to avoid impacts where possible. We will also undertake a review of the data to highlight sites with particular sensitivity to impacts on setting that are located within the surrounding landscape. IAC Archaeology will assist the lead consultant in the layout optimisation process as necessary, providing specialist feedback in relation to cultural heritage issues.

A detailed assessment will be carried out on any potential direct and indirect impacts that the proposed development may have on the cultural heritage resource, based on analysis of the data sources listed above and elsewhere herein. Any potential impacts identified will be discussed with the project team and amendments made to the proposed design where possible to eliminate or minimise the potential impact.

15.5 Cumulative Effects

The cumulative effects assessment will consider the potential for the proposed development, in combination with other permitted and reasonably foreseeable developments or activities, that may give rise to cumulative effects on archaeological, architectural or cultural heritage resources. Where relevant cumulative risks are identified, consideration will be given to appropriate mitigation measures at the assessment stage to avoid or minimise potential impacts, particularly during construction.

15.6 Factors Scoped Out

Construction phase setting effects will be temporary and, due to their short duration, are not considered significant in EIA terms and therefore, they are proposed to be scoped out of the assessment. Similarly, decommissioning phase will involve ground disturbance confined to the original construction footprint, meaning no setting effects on heritage assets within the Site boundary will occur. Any residual operational setting effects will be reversed, and decommissioning impacts are therefore also proposed to be scoped out.

Decommissioning-phase effects are likewise proposed to be scoped out. Decommissioning will involve ground disturbance confined to the original construction footprint, with no new areas of impact and no potential to affect heritage assets within or adjacent to the site. Any operational setting effects that may have arisen during the lifetime of the proposed development will diminish as turbines and associated infrastructure are removed, resulting in a progressive restoration of the wider historic landscape. As decommissioning will not introduce new impacts and will ultimately reverse long-term operational effects, significant cultural heritage impacts during this phase are not anticipated and are therefore scoped out of further assessment.

15.7 Questions to Consultees

The ZTV for the scoping layout used at preliminary stage of assessment has been provided as a digital shapefile with this submission. Consultees are invited to confirm whether any additional digital datasets are required to inform their scoping opinion.

Further consultation is sought on the following:

- Agreement with the proposed list of 'Receptors/Matters to be Scoped Out' in the Cultural Heritage assessment for the EIA Report.
- Identification of any additional relevant consultees beyond and the Department of Housing, Local Government and Heritage who should be engaged regarding the Cultural Heritage assessment.

16. Traffic and Transport

16.1 Introduction

The purpose of the traffic impact assessment will be to assess the potential impacts of the proposed wind farm on the surrounding roads and potential sensitive receptors. The potential requirement for construction stage traffic management will be assessed as part of the EIAR process.

16.2 Study Area

The Traffic and Transport study area comprises the road network likely to experience changes in traffic conditions as a result of the proposed development, particularly during the construction phase.

The national secondary road, the N84, is located approximately 4km from the proposed development and forms part of the wider strategic road network accessible to construction and delivery traffic. The subject site is located either side of the R334 regional road, which runs in a northwest–southeast direction connecting Headford and Cross, and which is anticipated to form the primary access route to the site.

Accordingly, the study area includes the R334 and associated local roads in the vicinity of the site, together with relevant sections of the wider road network associated with the turbine delivery route. Sensitive Receptors

As detailed in Section 5, sensitive receptors in the vicinity of the proposed wind farm will be identified as part of the EIAR process. These are likely to include residential properties, roadside users, and other sensitive land uses located along the R334 and local access roads, as well as receptors along the proposed grid connection route and in the vicinity of turbine delivery works areas. The final identification of sensitive receptors will be confirmed following detailed route confirmation and baseline surveys at EIAR stage.

16.3 Desktop and Field Survey

The primary traffic related impact caused by a wind farm generally occurs during the construction stage of the project. As such, the traffic assessment within the EIAR will focus on the impacts that will be associated with the construction of the wind farm.

The extent of rock, sand and gravel on-site will be identified, and it is expected that if present that this will be exploited in order to minimise traffic movements to and from the site. The wind farm will also be designed such that all surplus excavated materials will be used on-site for reinstatement and landscaping purposes thereby minimising the volume of materials leaving the site, reducing the cost of disposal and minimising the construction traffic.

Using aerial photography and mapping, haul and TDR routes will be identified for the construction process. These haul routes will be originally assessed by undertaking a site visit and driving the route identifying pinch points, tight bends, steep elevations, poor pavement conditions, road structures, watercourse crossings etc. and the haul routes will be revised where necessary. Swept path analysis will be undertaken at identified constraints by the traffic specialists to inform the assessment. Early engagement with third party landowners will be

undertaken where details of external road improvements are proposed, and these will be included in the EIA as appropriate.

The traffic team will also look at traffic access to the site from the public road network, including sightlines and advise on any limitations. They will consider if the existing site access is appropriate for construction and work vehicles to enter and exit the site in a safe manner. Longitudinal profiles and sections shall be undertaken in accordance with the TII Publication Rural Road Link Design (DN-GEO-03031 June 2017) to develop suitable road levels.

Using information on the project construction methodology, an estimate of the number of vehicles (both light and heavy good vehicles) that would be generated by the construction phase, will be produced. These estimates can be used to assess the impact on the road network in numerical terms and will also feed into other EIAR chapters such as noise and air quality. The Road / Traffic Section of Mayo County Council will be consulted, and the relevant information will be taken into consideration in accordance with the Traffic and Transportation Assessment Guidelines, May 2014 (PE-PAV-02045).

The Traffic Chapter of the EIAR will be completed, taking into consideration the information generated during the processes described above, identifying impacts and proposing mitigation measures where appropriate. A separate report, a Traffic and Transportation Assessment Report, will be appended to the EIAR.

Typically, wind farms are located in rural areas and this poses challenges for the delivery of abnormal load turbine components to site. The proposed Wind Farm is no different in this respect and so one of the key roads and traffic issues will be identifying suitable haul routes for the successful and safe delivery of turbine components and construction materials to site. It is worth noting that access to the site for large turbine components appears to be good at this stage, predominantly utilising the national and regional road network.

A Construction Traffic Management Plan will be prepared for the Haul Route for the construction traffic and the abnormal load haul route, outlining;

- Objectives
- Existing site conditions
- Proposed Construction (Traffic volumes, staffing levels, construction equipment and Abnormal Loads)
- Proposed Traffic Management Plan (Accesses, Signage, Vehicle Routing, Material Deliveries, Construction Speed Limits, Road Cleaning and CTMP Enforcement); and
- Proposed Emergency Procedures for the Construction Stage

The requirement for the preparation of a Stage 1 Road Safety Audit (RSA) will be considered and discussed with the traffic department in Mayo County Council. Where required, this will be completed by a suitably qualified traffic expert and included in the EIAR.

16.4 Cumulative Effects

Cumulative traffic and transport effects arising from the interaction of traffic generated by the proposed development with existing traffic, background traffic growth, and traffic associated with other permitted and reasonably foreseeable developments in the area. The cumulative

assessment will focus on the site access, key junctions, and affected parts of the surrounding road network.

Where significant cumulative traffic and transport effects are identified mitigation measures may be considered. Such measures could include, where necessary, traffic management measures, timing or phasing of construction traffic, route management for abnormal loads, and liaison with relevant roads authorities and stakeholders. The need for and appropriateness of any such measures will be confirmed at EIAR stage.

Based on the site investigation findings and the likely impacts and risks that may be anticipated, and the potential cumulative effects that may arise, guidance will be provided towards the mitigation of these impacts and minimisation of the associated risks during construction, operation and decommissioning.

16.5 Factors Scoped Out

All factors relating to traffic and transport during the operational and decommissioning phases are scoped out for further assessment based on the following understanding.

- During the operational phase, impact on the local road network is anticipated to be negligible. Access will be required periodically for routine maintenance and, less frequently, for major maintenance or component upgrades. It is not expected that traffic volumes on the existing network will increase by more than 10% for Heavy Goods Vehicles (HGVs) or 30% for overall vehicle movements as per IEMA 2023 guidelines. These thresholds represent the defining criteria for determining significant environmental effects on the local transport network.
- Traffic levels associated with the decommissioning phase will be significantly lower than those generated during the construction phase. On this basis, so are the potential impacts compared to those assessed for the construction phase. It is therefore proposed to scope out decommissioning traffic impacts from further detailed assessment.

16.6 Questions to Consultees

Consultees are invited to provide feedback on the following:

1. Do you agree with the proposed list of consultees?
2. Do you agree with the proposed study areas?
3. Are the proposed surveys to inform the EIA baseline characterisation appropriate?
4. Are the data sources identified to inform the EIA baseline characterisation appropriate?
5. Are there any receptors, assets, or resources, not currently identified, that should be included in the EIA Report?
6. Do you agree with the receptors/matters proposed to be scoped in and out of the EIA?

7. Do you agree with the proposed mitigation measures, and are these measures appropriate?
8. Do you require any shapefiles to assist in your review of the proposed development?

17. Interaction of the Foregoing

A section of the EIAR entitled "Interaction of the Foregoing" will summarise the primary interrelationships of aspects of the various environmental topics with the potential for significant effects as a result of the proposed development.

17.1 Factors Scoped Out

Based on the preliminary review and professional judgment, the following factors are scoped out of further assessment as they are unlikely to result in significant interactive or cumulative effects:

- Air quality and noise interaction during operation: Operational emissions are negligible for a wind farm, and noise levels are predicted to remain within acceptable limits. therefore, combined effects on human health are not significant.
- Shadow flicker and water quality: No plausible pathway for interaction exists between shadow flicker and hydrological or water quality impacts.
- Traffic and ecological effects during operation: Traffic movements during operation are minimal and will not interact with ecological receptors in a significant way.
- Visual and air quality effects: Visual impacts do not interact with air quality changes, as emissions are not anticipated during operation.

These factors will not be considered further in the EIAR, as they do not present a reasonable risk of combined or synergistic impacts.

17.2 Questions To Consultees

1. Do you agree with the proposed approach to assessing interactions between environmental topics, including the identification of pathways through which significant combined effects may arise as a result of the proposed development?
2. Are there any key interactions between environmental topics (for example, between landscape and cultural heritage, noise and population, traffic and material assets, or biodiversity and water) that you consider should be specifically addressed or expanded upon in the EIAR?
3. Do you consider that the topics scoped into the EIAR adequately capture those environmental aspects most likely to interact in a manner that could give rise to significant combined or secondary effects?
4. Are there any topic interactions arising during specific project phases (such as construction, operation, or decommissioning) that you consider require particular attention within the EIAR?

5. Do you consider that cumulative effects arising from interactions between different environmental topics (rather than within a single topic area) should be further examined, and if so, please specify?

18. Schedule of Mitigation Measures

A summary chapter collating all the mitigation measures relevant to the proposed development will be included in a standalone section of the EIAR i.e., a Schedule of Mitigation Measures.

19. Consultation

19.1 Scoping Consultation

Following the preliminary design of the proposed wind farm layout, turbine locations, grid connection and substation, it is proposed that the project team will commence consultation initially with the bodies listed below (in Table 19-1), in order to allow sufficient time for receipt of meaningful feedback.

Table 19-1: Proposed List of Consultees

Consultee List
2RN*
AirNav*
Airwave*
An Garda Síochána
An Taisce - The National Trust for Ireland
Bat Conservation Ireland
BirdWatch Ireland
BT Ireland*
Coimisiún na Meán (formerly Broadcasting Authority of Ireland)
Commission for Communications Regulation (COMREG)
Commission for Regulation of Utilities (CRU)
Coras Iompair Eireann (CIE) / Irish Rail/ Iarnrod Eireann
Department of Agriculture, Food and Marine
Department of Defence
Department of Environment, Climate and Communications
Department of Housing, Local Government and Heritage – Development Applications Unit
Department of Housing, Local Government and Heritage - National Parks & Wildlife Service
Department of Housing, Local Government and Heritage - National Monuments Service
Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media
Department of Transport
Eir*
EirGrid
Enet*
Environmental Protection Agency (EPA)
ESB Networks
Fáilte Ireland
Galway County Council
Gas Networks Ireland
Geological Survey of Ireland (GSI)
Health & Safety Authority (HSA)
Health Service Executive (HSE)
Imagine Broadband*
Inland Fisheries Ireland (IFI)
Ireland West Airport, Knock
Irish Aviation Authority (IAA)

Consultee List
Irish Raptor Study Group
Irish Trails/Sport Ireland
Irish Wildlife Trust
Met Éireann
Mountaineering Ireland
Northern and Western Regional Assembly
Office of Public Works (OPW)
Mayo County Council
Sustainable Energy Authority of Ireland
Teagasc
Tetra Ireland (TI)*
The Arts Council
The Heritage Council
Three Ireland*
Transport Infrastructure Ireland (TII)
Uisce Éireann (Irish Water)
Waterways Ireland
Viatel*
Virgin Media*
Vodafone Ireland*

*Telecoms-specific consultees

Any additional consultees identified during the course of the EIA process will be contacted.

19.2 Public Consultation

The Community Engagement Strategy for the Project is based on engaging with the local community in an open, honest and transparent manner with the aim to not only provide clear and understandable information but also to gain feedback to understand the views of the local community. A dedicated Community Liaison Officer will be available throughout the pre-planning process via phone and email and will also offer one-to-one consultations for residents in the project vicinity. TOBIN will be providing assistance to the RGE Engagement Team where needed, particularly in areas where technical specialist knowledge is required.

RGE plan to share informational leaflets, conduct a round of door-to-door consultations in the community and host a community clinic in a local venue. The project will also have detailed information and resources available online via a dedicated website.



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