

1 INTRODUCTION

This chapter of the Environmental Impact Assessment Report (EIAR) introduces the proposed Moanmore Lower Wind Farm (the Development) and provides details of the Environmental Impact Assessment (EIA) project team and the structure of the report. It defines the key terms of reference used in the environmental assessment of the Development. The Development is subject to an EIA, under the Environmental Impact Assessment Directive 2011/92/EU¹ as amended by Directive 2014/52/EU² (EIA Directive) and the Planning and Development Act 2000 (as amended) (the 'PDA') as it contains 3 wind turbines, and with a total output of up to 15 MW.

The EIAR has been prepared by Jennings O'Donovan & Partners Limited, on behalf of Moanmore Lower Green Energy Limited, to accompany the planning application seeking planning permission for the Development. This EIAR assesses the Development as a whole, and all direct and indirect effects, cumulative impacts and interactions, including all relevant ancillary and subsidiary elements of the overall Project.

This chapter also provides a description of the temporary accommodation requirements required along the turbine delivery route (TDR) which are outside the Redline Boundary and which together with the works *within* the Redline Boundary are defined as the Project which form the basis of the assessments presented within Chapters 5 to 14. In addition to the identification, description, and assessment of the Project, this EIAR identifies, describes, and assesses the overall Project cumulatively with any other existing, permitted and proposed developments (see **Section 2.3.4 of Chapter 2**). This EIAR has been prepared by competent and qualified experts and includes the conclusions as to the significance of any such environmental effects, to assist the competent authority in undertaking an EIA.

This application is accompanied by an Appropriate Assessment Screening Report and Natura Impact Statement (NIS) which are intended to assist the competent authority in carrying out an appropriate assessment screening under Section 177U of the Planning and Development Act 2000 (as amended) (the "**Planning Acts**") and an Appropriate Assessment required in accordance with Article 6(3) of the EU Habitats Directive (92/43/EC). The potential for likely significant effects resulting from the Project, both individually and in combination with other activities, plans and developments, on European

¹ The European Council Directive 2011/92/EU. Available online at <https://eur-lex.europa.eu/eli/dir/2011/92/oj> [Accessed 23/11/2024]

² The European Council Directive 2014/52/EU. Available online at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0052> [Accessed 23/11/2024]

Site(s) in light of the conservation objectives for their qualifying species and habitats have been screened and assessed in the AA screening report and the NIS assesses any adverse effects on the integrity of European Sites in light of the relevant conservation objectives.

This chapter is supported by Figures and the following Appendices in **Volume IV**:

- **Appendix 1.1:** Author Qualifications
- **Appendix 1.2:** Cumulative Wind Farms
- **Appendix 1.3:** Scoping Opinion
- **Appendix 1.4:** Glossary of Common Acronyms
- **Appendix 1.5:** Community Engagement Report

1.1 KEY DEFINED TERMS

In order to provide clarity in the EIAR, the following defined terms will be used throughout.

Table 1.1: Defined Terms used throughout the EIAR

Term	Definition
Site	Refers to all land that falls within the Proposed Moanmore Lower Wind Farm Site Boundary as shown on Figure 1.2a.
Redline Boundary	Refers to the proposed Development planning boundary and includes all the proposed works to be completed as part of the Development. It is shown on the planning drawings accompanying this EIAR.
Baseline	Refers to the relevant aspects of the current state of the existing environment in the area where the Project is proposed to be located and the surrounding areas.
Development	Refers to all elements of the proposed Development as described in the planning application and public notices for Moanmore Lower Wind Farm, the details of which are set out within Chapter 2: Project Description. These elements include the wind turbines, all site infrastructure, the Grid Connection Route from the onsite substation to Tullabrack 110kV substation, blade set-down area and all permanent works required on the Turbine Delivery Route within the Redline Boundary.
Project	Refers to the Development works within the Redline Planning Boundary, and the temporary accommodation requirements along

Term	Definition
	the Turbine Delivery Route which are outside the redline and landholding boundaries.
Survey Areas	Refers to areas within which surveys are undertaken. These are specifically defined within each discipline chapter in the EIAR.
EIAR Study Areas	Refers to areas which are considered as part of the assessment process. These are specific and defined within each discipline chapter in the EIAR.
Council	Refers to Clare County Council i.e. the Competent Authority.
Developer	Moanmore Lower Green Energy Ltd.
EIA Regulations	The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) transpose the requirements of the 2014 EIA Directive into the Planning and Development Regulations 2001 (As Amended).
EIA Directive	Refers to Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU.
The 2014 EIA Directive	Refers to Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment.
Scoping	Scoping is the process of determining what information should be included in the EIAR and the methodologies that should be used to collect and assess that information.
Electrical Substation	Refers to the on-site substation and control building, including the compound in which it is located – the proposed Moanmore Lower Wind Farm Electrical Substation.
Construction Haul Routes	Refers to the proposed routes from local quarries and concrete suppliers to the Site.
Turbine Delivery Route (TDR)	Refers to the proposed Turbine Delivery Route from Shannon Foynes Port to the Site.
Grid Connection Route (GCR)	Refers to the proposed route of connecting the proposed Moanmore Lower Wind Farm Electrical Substation to the national grid at Tullabrack 110kV ESNB Substation.
Wind Farm Internal Cabling	Refers to the electrical cables and ducting connecting the turbines to the electrical substation

Term	Definition
Temporary Construction Compound	Refers to the compound to be developed and used by the appointed contractor(s) for the purposes of constructing the wind farm which will be reinstated when construction is completed.
Turbine Hardstand	Refers to a small, fixed area at the base of each wind turbine used by cranes for erection of turbine structure, hub, nacelles and rotor blades.
Turbine Foundation	Refers to turbine concrete base located under ground level and used to support the turbine structure.
Decommissioning	Refers to the end of the operational life of the wind farm when turbines are dismantled and taken off site for reuse, recycling, or disposal, as appropriate. The turbine foundations will remain in-situ and will be covered with earth and reseeded as appropriate. The turbine hardstands will also be reinstated, and the site roads will be left in-situ. The wind farm internal cabling will be removed while the ducting will remain in-situ. The Electrical Substation will be left in-situ.
Reinstatement	Reinstatement means restoring the habitat to its original state in the areas of the site where infrastructure was developed.

1.2 THE DEVELOPER

The Developer – Moanmore Lower Green Energy Ltd, is a subsidiary of Greensource Sustainable Developments Limited (Greensource Ltd.).

Greensource is an innovative Irish renewable energy company based in Adare, Co. Limerick that specialises in the development of renewable energy projects, working with communities from pre-planning to operation, and creating long-lasting local partnerships. Greensource has over ten years development and operational experience. Greensource has a highly skilled and experienced team who are committed to developing projects with successful outcomes for all stakeholders. Working with integrity and care for the local environment, the team has a strong track record, having successfully completed wind energy and other renewable projects in the west of Ireland.

1.3 THE SITE

The Site boundary area extends to approximately 26.84ha all of which is owned by private third-party landowners. The Redline Boundary extends to 36.77ha. The Site is characterised by a combination of agricultural grassland and cutover peatland bog.

The Site is located 3km north-west of Kilrush, Co. Clare, 6.8km south-west of Cooraclare village, and 7.1km north of the county boundary between counties Clare and Kerry. The Site is located on relatively level ground, at elevations ranging from 11m AOD in the northern side of the Site, where the site access track is proposed, to 9m AOD towards the middle of the Site. A Site Location Map showing the Redline Boundary is appended as **Figure 1.1** and a map which comprises of all elements of the Project is outlined as **Figure 1.2a and 1.2b**.

The Development is located in a rural setting. Housing density in the area is low to medium. There are 183 receptors within a 2km radius of the proposed turbines which includes 181 houses, comprising one off houses and farm holdings, 1 No. school and an old cottage which has been converted to a tack-room (**Figure 1.3**). The nearest settlement is Kilrush which is located approximately 3km south of the Site boundary.

A full description of the Development is provided in **Chapter 2: Project Description**.

Based on the feasibility study and constraints mapping, the Site has the potential to accommodate 3 no. 4-5MW wind turbines with an overall blade tip height of 150m. The proposed wind turbines have a rotor diameter of 136m and a hub height of 82m.

Initial Grid Connection feasibility work has been completed for the Development which has identified the preferred route that will connect the Development to the national grid via the existing Tullabrack substation.

This EIAR accompanies the planning application for Development which will be submitted to Clare County Council as the competent planning authority.

1.4 SUMMARY OF PROPOSED DEVELOPMENT DESCRIPTION

Permission is being sought by the Developer for the construction of 3 No. wind turbines, an Electrical Substation and all ancillary works. Also, it includes localised temporary works along the Turbine Delivery Route and construction of an underground grid connection route to Tullabrack 110kV ESBN Substation.

The Development will include the following main components:

- Erection of 3 no. 4-5MW wind turbines with an overall ground to blade tip height of 150m. The proposed wind turbine will have a rotor diameter of 136m and a hub height of 82m and a total generating capacity of 15MW.
- Construction of site access tracks, Turbine Hardstand areas and Turbine Foundations.
- Construction of 1. No new site entrance along the Turbine Delivery Route with access onto the adjoining local road network (L6132).
- Construction of 1 no. Temporary Construction Compound with associated temporary site offices, parking areas and security fencing.
- Construction of new internal site access tracks and upgrade of existing site track, to include all associated drainage.
- Development of a site drainage network.
- Construction of 1 no. Electrical Substation with all associated electrical plant and equipment, security fencing, lightening protection, security cameras and gates, and all ancillary structures and works.
- 1 no. permanent spoil storage area.
- All Wind Farm Internal Cabling connecting the wind turbines to the Electrical Substation.
- All works associated with the permanent connection of the wind farm to the national electricity grid comprising a 38kV underground cable in permanent cable ducts from the proposed, permanent, on-site substation and to the existing Tullabrack 110kV ESNB Substation.
- 2 no. flood compensation areas.
- Vertical realignment of an existing crest curve on the L6132 local road in order to prevent grounding of abnormal load vehicles during delivery of turbine components.
- Construction of a Blade Transfer Area off the L6132.
- Ancillary forestry felling to facilitate construction and operation of the development.
- Provision of 2 no. biodiversity enhancement areas.
- Upgrade of an existing site entrance onto the adjoining local road network (L2034) including the demolition of an existing wall and removal of hedgerow at the site entrance to facilitate abnormal load vehicles during delivery of turbine components.
- Landscaping and all associated ancillary works

A 10-year planning permission and 40-year operational life from the date of commissioning of the entire wind farm is being sought. However, part of the substation and all of the grid connection will be handed over to ESB networks to own and operate. As part of the national grid infrastructure, their life can extend beyond the life of the wind farm. Accordingly, permission is sought for the grid connection and substation in perpetuity.

The EIAR assesses the Project which includes the Development as outlined above; it includes improvements and temporary modifications to the existing public road infrastructure to facilitate delivery of abnormal loads and turbine delivery.

1.5 ENVIRONMENTAL IMPACT ASSESSMENT

1.5.1 Environmental Impact Assessment Requirement and National Legislation

The EIA Directive requires that, before consent is given for certain public and private projects, an assessment of the effects on the environment is undertaken by the relevant competent authority. The EIA Directive has been transposed into Irish legislation by the inter alia the Planning Acts and the Planning and Development Regulations 2001, as amended ("the Planning Regulations").

Section 171A of the Planning and Development Act 2000 (as amended) defines an Environmental Impact Assessment (EIA) as 'a process —

(a) consisting of —

- (i) the preparation of an environmental impact assessment report by the applicant in accordance with this Act and regulations made thereunder,*
- (ii) the carrying out of consultations in accordance with this Act and regulations made thereunder,*
- (iii) the examination by the planning authority or the Board, as the case may be, of— (I) the information contained in the environmental impact assessment report, (II) any supplementary information provided, where necessary, by the applicant in accordance with section 172(1D) and (1E), and (III) any relevant information received through the consultations carried out pursuant to subparagraph (ii),*
- (iv) the reasoned conclusion by the planning authority or the Board, as the case may be, on the significant effects on the environment of the proposed development, taking into account the results of the examination carried out pursuant to subparagraph (iii) and, where appropriate, its own supplementary examination, and*
- (v) the integration of the reasoned conclusion of the planning authority or the Board, as the case may be, into the decision on the proposed development, and*

(b) which includes —

- (i) an examination, analysis and evaluation, carried out by the planning authority or the Board, as the case may be, in accordance with this Part and regulations made thereunder, that identifies, describes and assesses, in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of the proposed development on the following: (I) population and human health; (II) biodiversity, with particular attention to species and habitats protected under the Habitats Directive and the Birds Directive; (III) land, soil, water, air and climate; (IV) material assets, cultural heritage and the landscape; (V) the interaction between the factors mentioned in clauses (I) to (IV), and*

(ii) as regards the factors mentioned in subparagraph (i)(I) to (V), such examination, analysis and evaluation of the expected direct and indirect significant effects on the environment derived from the vulnerability of the proposed development to risks of major accidents or disasters, or both major accidents and disasters, that are relevant to that development.

Section 172(1)(a)(ii)(I) requires projects of a class specified in Part 2 of Schedule 5 of the Planning Regulations to be subject to an EIA where:

“(I) such development would exceed any relevant quantity, area or other limit specified in that Part”.

Part 2 of Schedule 5 of the Planning Regulations includes the following classes of an EIA Development:

Class 3(i) *“Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts.”*

Class 10(dd) *“All private roads which would exceed 2000 metres in length”*

The Development comes within the scope of Class 3(i) because it will have a total output greater than 5 MW and Class 10(dd) and an EIA is therefore required.

1.5.2 Directive 2014/52/EU

The EIA Directive (2011/92/EU) was amended by the 2014 EIA Directive (2014/52/EU).

On 1st September 2018, the Minister for Housing, Planning and Local Government published updated guidelines for planning authorities and An Bord Pleanála on carrying out EIAs³. The publication of the Guidelines coincides with the coming into operation on 1st September 2018 of the provisions of the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018), which were signed by the Minister on 26th July 2018. These Regulations transpose the requirements of Directive 2014/52/EU, amending previous Directive 2011/52/EU, on the assessment of the effects of certain public and private projects on the environment (the EIA Directive) into planning law.

³ Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment* [Accessed 23/11/2024]

Accordingly, this EIAR complies with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018). To the extent relevant and necessary, the existing provisions of the Planning Acts and the Planning Regulations insofar as they transpose the EIA Directive, have been complied with. Article 5 of the EIA Directive provides where an EIA is required, the developer shall prepare and submit an Environmental Impact Assessment Report (EIAR). The information to be provided by the developer shall include at least:

- (a) *a description of the Development comprising information on the site, design, size and other relevant features of the Development*
- (b) *a description of the likely significant effects of the Development on the environment*
- (c) *a description of the features of the Development and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment*
- (d) *a description of the reasonable alternatives studied by the developer, which are relevant to the Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Development on the environment*
- (e) *a non-technical summary of the information referred to in points (a) to (d) and*
- (f) *any additional information specified in Annex IV relevant to the specific characteristics of a particular Development or type of Development and to the environmental features likely to be affected*

The EIAR provides information on the receiving environment and assesses the likely significant effects of the Development and proposes mitigation measures to avoid or reduce these effects. The function of the EIAR is to provide information to allow the competent authority to reach a reasoned conclusion on the effects of a development

1.5.2.1 EIA Definition

Article 1(2)(g) of the 2014 EIA Directive defines EIA as a process consisting of:

- “(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2)*
- (ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7*
- (iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information*

- provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7*
- (iv) *the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination, and*
- (v) *the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a”.*

1.5.2.2 Factors of the Environment

The EIA Directive as amended requires the EIA to identify, describe and assess, in an appropriate manner and in light of each individual case, the direct and indirect significant effects of a project on the following factors:

- (a) population and human health;
- (b) biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives;
- (c) land, soil, water, air and climate;
- (d) material assets, cultural heritage and the landscape;
- (e) the interaction between the factors referred to in points (a) to (d).

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

Table 1.3: Outline of respective chapters relating to the requirements of the EIA Directive

EIA Directive	Chapter	Title
(a) <i>population and human health</i>	5	Population and Human Health
	10	Noise and Vibration
	13	Shadow Flicker
(b) <i>biodiversity, with particular attention to species and habitats protected under the Habitats and Birds Directives</i>	6	Biodiversity
	7	Aquatic Ecology
(c) <i>land, soil, water, air and climate</i>	2	Project Description
	6	Biodiversity
	7	Aquatic Ecology
	8	Soils and Geology
	9	Hydrology and Hydrogeology
	12	Air Quality and Climate

EIA Directive	Chapter	Title
(d) material assets, cultural heritage and the landscape	11	Landscape and Visual Amenity
	14	Archaeology and Cultural
	15	Heritage
	16	Material Assets & Other Issues Traffic Impact Assessment
(e) the interaction between the factors referred to in points (a) to (d)	17	Interactions of the Foregoing

1.5.2.3 Major Accidents and Disasters

A wind farm is not a recognised source of chemical pollution. Should a major accident or natural disaster occur, the potential sources of pollution on Site during both the construction and operational phases are limited. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects on health include bulk storage of hydrocarbons or chemicals and storage of waste. The Site is not regulated under the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 i.e. SEVESO sites and so there is no potential effect from this source. The closest SEVESO site, at the Moneypoint Generating Station at Killimer, County Clare, is located approximately 10km south-east from the Development.

There is limited potential for significant natural disasters to occur at the Site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to peat-slide, flooding and fire. The Site is relatively flat and so the risk of peat slide is negligible. The risk of peat-slide is further addressed in **Chapter 8: Soils and Geology, Appendix 8.1 – Site Investigations & Stability Risk Assessment and Chapter 9: Hydrology and Hydrogeology.**

Provisional analysis of the OPW Flood Maps indicates that part of the Site lies within probable flood zones. A portion of the Development lies within a low and medium probability flood plain, classified as Flood Zone A & B. No flooding has been recorded on Site to date.

The wind farm Site is located in the Wood River sub-catchment (Wood_SC_010) and the Moyasta_010 WFD river sub-basin. The Moyasta River (EPA Code: 27M04) is mapped to flow to the northwest along the northern boundary of the wind farm Site, approximately 90m north of the T1. In addition to the EPA mapped Moyasta River, the natural drainage of the wind farm Site is further facilitated by an extensive network of manmade surface water drainage features. These features comprise of several deeply incised drains which flow to the north, draining the cutover bog and the rough agricultural lands which comprise the Site,

before discharging into the Moyasta River as detailed in **Chapter 9: Hydrology and Hydrogeology – Figure 9.2.**

The risk of flooding is addressed fully in **Chapter 9: Hydrology and Hydrogeology.**

An article in Wind Power Engineering Magazine estimated that 1 in 2,000 wind turbines catch fire each year⁴. Overall, the data shows that wind turbine fires are relatively rare⁵. It is therefore considered that the risk of significant fire occurring, affecting the wind farm and causing the wind farm to have significant environmental effects is limited. As described earlier, there are no significant sources of pollution in the wind farm with the potential to cause environmental or health effects. Also, the spacing of the turbines and distance of turbines from any properties and infrastructure limits the potential for impacts on human health.

1.5.2.4 Alternatives to the Development

Article 5(1)(d) of the EIA Directive requires that the EIAR includes a description of the reasonable alternatives studied by the Developer, which are relevant to the Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Development on the environment.

In addition, Annex IV, paragraph 2 provides that the EIAR include “A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”.

This is addressed in **Chapter 3, Alternatives Considered** of this EIAR.

1.5.2.5 National Guidance

The preparation of this EIAR has regard to the following documents:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, May 2022)⁶
- Draft Wind Energy Development Guidelines for Planning Authorities (DHPLG, 2019)
- The Department of Housing, Planning and Local Government (2018) Circular PL. 05/2018 -Transposition into Planning Law of Directive 2014/52/EU

⁴ <https://www.windpowerengineering.com/is-rope-based-descent-emergency-evacuation-at-the-end-of-its-tether/> [Accessed 23/11/2024]

⁵ <https://www.firetrace.com/fire-protection-blog/wind-turbine-fire-statistics> [Accessed 23/11/2024]

⁶ Environmental Protection Agency, (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports.* https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf - [Accessed 23/11/2024]

- Department of Housing, Planning and Local Government 'Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment' (August 2018)
- Review of the Wind Energy Development Guidelines – Preferred Draft Approach (DoHPCLG, 2017)
- Best Practise Guidelines for the Irish Wind Energy Industry (IWEA, 2012)
- Guidelines for Environmental Impact Assessment of Electricity Transmission Projects (Eirgrid, various)
- Electricity Transmission Studies Evidence-Based Environmental Studies (Eirgrid, various)
- Wind Energy Development Guidelines for Planning Authorities (DoEHLG, 2006)

1.5.2.6 European Guidance

- Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report (European Commission, 2017)
- Guidance on Integrating Climate Change and Biodiversity into Environmental Impact Assessment (European Commission, 2013)

1.5.2.7 Competent Experts and Quality of the EIAR

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

Article 94(e) of the Planning and Development Regulations 2001 (as amended) requires the following information to be provided in an EIAR:

“(e) a list of the experts who contributed to the preparation of the report, identifying for each such expert—

(i) the part or parts of the report which he or she is responsible for or to which he or she contributed,

(ii) his or her competence and experience, including relevant qualifications, if any, in relation to such parts, and

(iii) such additional information in relation to his or her expertise that the person or persons preparing the EIAR consider demonstrates the expert's competence in the preparation of the report and ensures its completeness and quality."

The Developer considers that each of the experts involved in the preparation of this EIAR is competent, having regard to the task he or she has performed, taking account of the scope of the study for which he or she undertook the work, the person(s) possesses sufficient training, experience and knowledge appropriate to the nature of the work. The competencies of the experts involved in the EIAR preparation are outlined in **Appendix 1.1 Author Qualifications and Experience**.

This EIAR has been prepared by Jennings O'Donovan & Partners Limited (JOD), Consulting Engineers, Finisklin Business Park, Sligo, F91 2HH9, on behalf of the Developer. JOD are one of the longest established and most reputable multi-disciplinary engineering consultancies in Ireland. Established in 1950, it has grown to be the largest engineering consultancy in the north-west of Ireland. JOD have been an established presence in the renewable energy wind farm sector since 1998. To date, the company has a portfolio of project involvement extending to over 2,500 MW of power in Ireland and Northern Ireland and is a recognised market leader in the area of wind energy development. This portfolio will equate, when completed, to an investment of €3 billion in the wind energy sector. Additionally, JOD has attained certificates in line with industry standards as follows:

- ISO 9001:2015 – Quality Management System
- ISO 14001:2015 – Environmental Management System
- ISO 45001:2018 – Occupational Health and Safety Management System

Possession of these certificates is, in itself, evidence that JOD, have developed, maintained and implemented systems in quality, safety and environmental related matters

This Project has been completed in line with JOD's Integrated Management System (IMS) which is based on the current versions of ISO 9001 (Quality Management System), ISO 14001 (Environment Management System) and ISO 45001 (Safety Management System). JOD are fully certified and accredited to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 for the provision of project management, environmental, civil and structural consulting engineering services.

JOD have developed a Quality Policy Statement, an Environmental Policy Statement and a Safety Health and Welfare Policy Statement. It is a stated objective in our Quality Policy Statement that:

"...Jennings O'Donovan and Partners Limited is committed to complying with the requirements of the quality management system and to continually improve its effectiveness..."

JOD staff are degree qualified in their respective specialist fields and have developed their competence through both experience on the job and through training. Each team member has developed the following:

- Sufficient knowledge of the specific tasks to be undertaken and the risks which may arise.
- Sufficient experience and ability to carry out their duties in relation to the project and to take appropriate actions required under the EIA Directive.

Specialist consultancies have been employed to complete some of the EIAR chapters. Each chapter of the EIAR includes a statement of authority regarding the competency of the author and relevant qualifications. **Table 1.4** provides details of the contributors of each aspect of the EIAR. Further details on the qualifications of each lead author can be found in **Appendix 1.1** and in the Statement of Authority in each individual technical assessment chapter.

1.6 NEED FOR THE DEVELOPMENT

The extent of the challenge to reduce greenhouse gas emissions in line with our International and EU obligations is well understood by Government and is reflected in the National Policy Position on Climate Action and Low Carbon Development (2014) and the Climate Action and Low Carbon Development Acts 2015 to 2021.

Both the policy position and legal framework are key elements of the effort to progress the national low carbon transition agenda.

In 2015 the National Policy Statement on climate change made a commitment to transform Ireland into a Low Carbon Economy by the year 2050.

The Government quantified this as:

- An aggregate reduction in CO₂ emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors; and
- In parallel, an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise capacity for sustainable food production.

The Climate Action Plan 2025

The Climate Action Plan 2025⁷ (CAP2025) was published in April 2025 and is the latest assessment and measurement of what has been achieved over the past year, building on actions taken in 2024. It sets out what need to be done in 2025 so Ireland is prepared to take on the challenges of our second carbon budget period 2026-2030.

Ireland's Progress to date:

- in 2023 emissions reduced by nearly 7%
- emissions in the first half of 2024 were down over 17%
- compared with the same period in 2023, emissions in the first half of 2024 reduced by 3.5%
- Irish wind farms generated nearly 40% of Ireland's total electricity demand in the first half of 2024
- over the past year, emissions in agriculture have reduced by over 4%
- in the built environment, emissions have decreased by 21% since 2018
- in transport, emissions increased by 0.3% in 2023

CAP25 re-affirms the previous commitment to increasing the share of renewable electricity to 50% by 2025 and 80% by 2030. Overall, the share of renewable electricity generation in Ireland increased from 38.6% to 40.7% from 2022 to 2023. The figure for 2024 will likely be between 40% and the interim, end of year target of 50% set out in CAP25.

The targets are:

- onshore wind, 2GWs by 2025 and 9 GWs by 2030
- offshore wind, at least 8GWs by 2030
- solar, up to 5GW by 2025 and 8GW by 2030

These targets are unchanged for the previous two years. CAP25 states

"A renewables-led system is at the core of Ireland's plan to radically reduce emissions in the electricity sector, protect our energy security, and ensure our economic

⁷Government of Ireland. (2025). Climate Action Plan 2025

https://assets.gov.ie/static/documents/Climate_Action_Plan_2025_updated_cover.pdf [Accessed 22/04/2025]

competitiveness. This requires the accelerated and increased deployment of new renewable electricity generation capacity and related infrastructure.

The Climate Action Plan 2024

Ireland's most recent climate action plan is the Climate Action Plan 2024 (CAP24), which was approved by the government on May 21, 2024. This plan serves as the third annual update to the original Climate Action Plan established in 2019 and is the second statutory update since the Climate Action and Low Carbon Development (Amendment) Act 2021 was enacted.

The Climate Action Plan 2024 sets out a detailed sectoral roadmap designed to deliver a 51% reduction in greenhouse gas (GHG) emissions by 2030. This requires significant reductions from all sectors. The Plan aims to evaluate in detail the changes that are required in order "to halve our emissions by 2030 and reach net zero no later than 2050, as we committed to in the Programme for Government".

In relation to electricity generation, the Plan sets an 80% target for electricity production from renewable sources by 2030, with an onshore wind energy target of 9GW in order to contribute to this.

These commitments highlight the need to remove barriers to the development of renewables, including onshore wind, such as streamlining regulation and encouraging reinforcement of the grid to facilitate greater renewables penetration.

The contribution of the Development to the de-carbonisation of the Irish electricity network will contribute positively to an issue of strategic social and economic importance. The significance of the Climate Action Plan 2024 is underlined by the Irish government's declaration of a Climate Emergency in 2019.

The Renewable Energy Directives 2018 and 2023

The first Renewable Energy Directive (2009/28/EC) (RED I) provided the framework for the promotion of energy from renewable resources across the EU. The second Renewable Energy Directive 2018/2001/EU (RED II) entered into force in December 2018 and was transposed into Irish law in September 2020 by S.I. No. 365/2020 - European Union (Renewable Energy) Regulations 2020. In 2023, the European Union (EU) adopted an

amendment of the Renewable Energy Directive (EU/2023/2413), which is referred to as "RED III".

The regulations set the parameters for the establishment of future Renewable Electricity Support Schemes (RESS), and build on the existing regime, which was created by the European Union (Renewable Energy) Regulations 2014 (as amended) (the "2014 Regulations").

The RED III sets an 80% target for electricity production from renewable sources by 2030. Ireland is facing significant challenges in efforts to meet these targets, alongside its commitment to transition to a low carbon economy by 2050. Ireland did not meet its 2020 target for renewable energy and is falling behind in the longer-term movement away from fossil fuels.

RED III raises the share of renewable energy in the European Union's overall energy consumption to 42.5% by 2030, with an additional 2.5% indicative top-up to allow the target of 45% to be achieved.

White Paper on Energy Policy in Ireland 2015 – 2030

A Government White Paper entitled '*Ireland's Transition to a Low Carbon Energy Future 2015-2030*' was published in December 2015 by the Department of Communications, Energy and Natural Resources⁸. This Paper provides a complete energy update and a framework to guide policy up to 2030. The Paper builds upon the White Paper published in 2007 and takes into account the changes that have taken place in the energy sector since 2007.

The policy framework sets out a vision for a low carbon future that maintains Ireland's competitiveness and ensures a supply of affordable energy.

The Development is critical to helping Ireland address these challenges as well as addressing the country's over-dependence on unsustainable imported fossil fuels. The need for the Development is driven by the following factors:

- A requirement to diversify Ireland's energy sources, to achieve national renewable energy targets;

⁸ <https://www.gov.ie/pdf/?file=https://assets.gov.ie/77389/e5aa9f25-da81-43eb-804d-57309615681e.pdf#page=null> [Accessed 16th September 2024]

- Avoid significant fines from the EU (the Promotion of the use of energy from renewable sources (recast) Directive 2018/2001/EU);
- A legal commitment under the Kyoto protocol to the United Nations Framework Convention on Climate Change (UNFCCC) from Ireland to limit greenhouse gas emissions;
- A requirement to increase Ireland's national energy security as set out in the Energy White Paper 'Ireland's Transition to a Low Carbon Energy Future 2015-2030';
- Provision of cost-effective power production for Ireland which would deliver local benefits;
- Increase energy price stability in Ireland by reducing an over-reliance on imported gas and exposure to international market price and supply fluctuations.

The Development will also offer opportunities such as:

- Provision of clean energy whilst minimising environmental impacts;
- Contributing to renewable energy targets which will continue to drive down the overall cost of energy with benefits to the Irish consumer.

The Project will create additional jobs and will encourage continued investment in the renewable industry in Ireland. Wind Energy Ireland (WEI), Ireland's largest renewable energy organisation, in its annual Wind Energy Report for 2022 noted that Ireland's wind energy share of electricity demand in 2022 was 34% compared to 30% in 2021.

The total installed capacity of the Republic of Ireland's wind farms is now 4,375 MW⁹; this is approximately enough to power 2.2 million Irish homes annually.

Chapter 4 of the EIAR relates to the Planning Policy Context and presents a full description of the international and national renewable energy policy context for the Development. **Chapter 5** addresses Climate Change, including Ireland's current status with regard to meeting greenhouse gas emission reduction targets.

1.6.1 Public Consultation

1.6.1.1 Informing the Public and Local Residents

The public were informed about the project via a newsletter which was issued on the 20 July 2022. This newsletter outlined who Greensource are, project proposals, project

⁹<https://windenergyireland.com/images/files/20221026windenergyirelandoireachtasmembersbriefing.pdf> [Accessed on the 23/11/2024].

schedule, community benefit, the proposed EIA process and studies to be undertaken, answers to frequently asked questions and contacts for further information requests and questions. The Community Engagement Report is attached as **Appendix 1.5**. There is also the Moanmore Lower Green Energy Limited website (<https://moanmorelowergreenenergy.ie/>) where updates on the project are posted.

1.6.2 Community Benefit and Community Involvement

Moanmore Lower Green Energy Limited will set up a community benefit fund which will allocate funds from the wind farm to community groups in the area should the wind farm be granted planning and be successful under the Government's Renewable Electricity Support Scheme (RESS) support programme.

If consented, the proposed Moanmore Lower Wind Farm will require an approximate investment of circa €25 million and will provide sustainable, low carbon energy generation infrastructure to meet Ireland's growing demand. The Development benefits to the local community would include significant investment in local infrastructure and electrical systems, local job creation, and a contribution of approximately €4.2million¹⁰ in Clare County Council rates over the project lifetime of 40 years.

If consented the proposed Moanmore Lower Wind Farm will also provide a community fund calculated in accordance with the RESS Terms and Conditions at €2 per MWh of electricity produced by the project. This is to be made available to the local community for the duration of the RESS (15 years). The average capacity factor of wind energy projects in Ireland is 28.3% (SEAI, 2019). Assuming this efficiency, and a capacity of c.15 MW, the community benefit fund would amount to an average of € 74,372 per annum. The actual fund will vary around this average from year to year, depending on each year's wind conditions. Wind resource monitoring undertaken in the Study Area indicate that Moanmore Lower Wind Farm could be capable of achieving an above average capacity factor, and therefore contribute towards a larger community fund.

Up to 50% of the fund will be distributed to near neighbours of the wind farm (within 1km). 40% of the fund, amounting to approximately €29,749 per year in this example, will be allocated to not-for-profit community enterprises, with an emphasis on low carbon initiatives. The fund will be directed towards local clubs, societies and other initiatives. It is envisaged that the communities nearest the Development will benefit most from any community fund.

¹⁰ Estimated €8,000 per mega watt installed for 35 year project lifespan

The community benefit fund will be managed by a fund committee comprised of local residents, the Developer and a fund administrator. The Developer and the administrator will ensure that all funding applications meet the fund's eligibility criteria.

1.6.2.1 *Information to be Included in a Decision to Grant*

Article 8a (1) of the EIA Directive states:

"The decision to grant development consent shall incorporate at least the following information:

(a) *the reasoned conclusion referred to in Article 1(2)(g)(iv);*

(b) *any environmental conditions attached to the decision, a description of any features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment as well as, where appropriate, monitoring measures".*

To assist the planning authority with this requirement, the EIAR includes a summary of all proposed mitigation and monitoring measures outlined within the technical assessments at the end of each chapter.

1.7 **EIAR STRUCTURE**

This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Development thereon and the proposed mitigation measures. Background information relating to the Development, scoping and consultation undertaken and a description of the Development are presented in separate sections. The grouped format sections describe the impacts of the Development in terms of population and human health, biodiversity, aquatic ecology, soils and geology, hydrology and hydrogeology, air and climate, noise and vibration, landscape and visual, shadow flicker, cultural heritage, material assets and traffic and transportation, together with the Interactions of the foregoing. Please note that the Irish Transverse Mercator (ITM) coordinate system is used in the EIAR document for precise geographical referencing of the Development.

The layout of this EIAR is arranged in four volumes, I-IV.

Volume I: This volume includes the opening **Non-Technical Summary (NTS)**. It is a condensed and easily comprehensible version of the EIAR document. The NTS is presented in a similar format to the main EIAR document and comprises descriptions of the Development, the receiving environment, impacts, mitigation measures and interactions presented in a grouped format. It is a standalone document.

Volume II: This volume contains the main text of the **Environmental Impact Assessment Report (EIAR)**.

The chapters in this **Volume II: EIAR** are as follows:

- Chapter 1: Introduction
- Chapter 2: Project Description
- Chapter 3: Alternatives Considered
- Chapter 4: Planning Policy
- Chapter 5: Population and Human Health
- Chapter 6: Biodiversity
- Chapter 7: Aquatic Ecology
- Chapter 8: Soils and Geology
- Chapter 9: Hydrology and Hydrogeology
- Chapter 10: Noise and Vibration
- Chapter 11: Landscape and Visual Assessment
- Chapter 12: Air Quality and Climate
- Chapter 13: Shadow Flicker and EMI
- Chapter 14: Archaeology and Cultural Heritage
- Chapter 15: Material Assets
- Chapter 16: Traffic and Transport
- Chapter 17: Interactions of the Foregoing

Volume III: EIAR Figures and Drawings

The Figures and Drawings referred to in each chapter of the EIAR are compiled separately in Volume III. Figures are numbered sequentially for each chapter in which they are principally referred.

Volume IV: Appendices

The appendices referred to in each chapter of the EIAR are compiled separately in Volume IV. They are also numbered sequentially for each chapter in which they are principally referred.

1.8 EIAR PREPARATION

1.8.1 Introduction

JOD had overall responsibility for the coordination of the EIAR with input from other independent specialist consultants where necessary. The competency of JOD has been outlined in **Section 1.5.2.7. Table 1.4** provides details of the contributors of each aspect of the EIAR. Further details on the qualifications of each lead author can be found in **Appendix 1.1** and in the Statement of Authority in each individual technical assessment chapter.

Table 1.4: EIAR Preparation Details

EIAR Chapter	Contributor & Qualifications	Years of Experience
1: Introduction	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
2: Project Description	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
	Ms. Kathlyn Feeney, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
3: Alternatives Considered	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
4: Planning Policy	Ms. Breena Coyle, BA, MSc MRTPI HD Planning and Environmental Planning Law, Senior Planner, Jennings O'Donovan & Partners Limited	15
	Ms. Sarah Jones, BSc., Environmental Consultant, Jennings O'Donovan & Partners Limited	14
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
	Ms. Kathlyn Feeney, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1

ElAR Chapter	Contributor & Qualifications	Years of Experience
5: Population and Human Health	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Padraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
6: Biodiversity	Mr. Brian Madden, MSc., BSc., CIEEM, Director, Biosphere Environmental Services	25+
	Mr Ryan Mitchell, BSc (Hons), Environmental Scientist, Ecologist and Project Manager, Jennings O'Donovan & Partners Limited	7+
7 Aquatic Ecology	Dr. Edward McCormack, PhD., BSc, Principal Ecologist, Aquafact	25+
	Ms. Aisling Hearty, M.Sc., Senior Ecologist, Aquafact	6
8: Soils and Geology	Mr. Sven Klinkenbergh, BSc., P.G.Dip, Geologist, RSK Limited	10+
	Dr. Deirdre Walsh - BSc, PhD, Environmental Consultant, RSK	10+
	Eilis Linehan, MSc, HDip, BSc, Environmental Consultant and Associate Director, RSK	12+
9: Hydrology and Hydrogeology	Michael Gill, P. Geo., B.A.I., MSc, Dip. Geol., MIEI, Environmental Engineer and Environmental Consultant, Hydro-Environmental Services	23+
	Conor McGettigan, BSc, MSc, Environmental Scientist, Hydro-Environmental Services	4+
Appendix 9.1 Flood Risk Assessment	Mr. Sven Klinkenbergh, BSc., P.G.Dip, Geologist, RSK Limited	10+
	Eilis Linehan, MSc, HDip, BSc, Environmental Consultant and Associate Director, RSK	12+
	Dr. Jayne Stephens, BS.c, PhD, Senior Environmental consultant, RSK	6
	Conor Campbell, BSc, Environmental Consultant RSK	3
10: Noise and Vibration	Mr. Shane Carr, MPhil., Director, Irwin Carr Consulting	21+
11: Landscape and Visual Assessment	Mr. Richard Barker, MLA, PGD, BA, MILI, Director, Macro Works Limited	25+
	Ms. Bridget Macfarlane, LVIA Consultant Macro Works Limited	6
	Ms. Amy Doran, LVIA Consultant Macro Works Limited	9
12: Air Quality and Climate	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40
	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18

EIAR Chapter	Contributor & Qualifications	Years of Experience
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Siobhan Roddy, BSc, Environmental Consultant, Jennings O'Donovan & Partners Limited	1
13. Shadow Flicker & EMI	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Ms. Aileen Byrne, BA, H.Dip., Environmental Consultant, Jennings O'Donovan & Partners Limited	2
14: Archaeology and Cultural Heritage	Mr. Tony Cummins, BA., MA., Senior Archaeologist, John Cronin & Associates	27
15: Material Assets	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18
	Mr. Pdraig O' Dowd, B.A., GradDip, MSc, Junior Environmental Scientist, Jennings O'Donovan & Partners Limited	2.5
	Mr. Kevin Hayes, B.Eng., M.Eng., Founding Director and Engineering Contracts Manager, Ai Bridges Limited	25+
	Mr. Patrick Tinney, B.Eng. Electronics, B.Eng. Computer and IT Systems, Communications Engineer, Ai Bridges Limited	12
	Martin Murphy, BSc (Hons), MSIF. Forester, Tree Officer, Arborist, VEON Ltd.	15
	Grainne Murphy BA, MSc, GIS Technician at VEON Ltd.	4
16: Traffic & Transport	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40
	Mr. John Doogan, NC., NDip. CEng. (HND), Senior Roads Technician, Jennings O'Donovan & Partners Limited	35
17: Interactions of the Foregoing	Mr. David Kiely, BSc., MSc., Director, Jennings O'Donovan & Partners Limited	40
	Ms. Sarah Moore, BSc., MSc, Senior Environmental Consultant, Jennings O'Donovan & Partners Limited	18

1.8.2 Chapter Structure

Each technical assessment included in the EIAR has followed the same general format:

- Assessment Methodology and Significance Criteria: A description of the methods used in baseline surveys and in the assessment of the significance of effects.

- **Baseline Description:** A description of the Site's existing baseline, based on the results of surveys and desk information and consultations.
- **Assessment of Potential Environmental Effects:** A description of how the baseline environment could potentially be affected by the Project including a summary of the measures taken during the design of the Project to minimise effects (including, where relevant, risks associated with major accidents).
- **Mitigation Measures and Residual Effects -** A description of measures recommended that will be implemented to reduce and/or off-set potential negative effects and a summary of the assessed level of significance of the effects of the Project after mitigation measures have been implemented.
- **Cumulative Effects:** A description identifying the potential for effects of the Project to combine with those from other existing, pending and/or permitted developments to affect resources.
- **Statement of Significance of Residual Effects.**

The significance of effects resulting from the Development will be determined through consideration of a combination of the sensitivity of the receiving environment and the predicted level of change from the baseline state. Environmental sensitivity can be categorised by several aspects including factors such as the transformation of natural landscapes, the protection afforded to, and presence of, European sites, rare or endangered species, land use and fisheries.

Sensitivity of classification of the receiving environment can vary between the different technical areas of assessment e.g., ecology, hydrology, population and human health and visual. In general, this EIAR largely follows the principles and terminology of the 2022, EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' in relation to the identification of significant effects. Where a technical assessment has adopted an alternative to this process, such as following technical guidance bespoke to that topic, such assessment criteria are made clear in that chapter. **Table 1.5** highlights the general framework for the assessment of significance of effects.

Table 1.5: Impact Classification Terminology (EPA Guidelines, 2022)

Impact Characteristic	Term	Description
Quality	Positive	A change which improves the quality of the environment
	Neutral	No effects or effects that are imperceptible within normal bounds of variation or within the margin of forecasting error
	Negative	A change which reduces the quality of the environment
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	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
	Moderate	An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
	Significant	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	An effect which obliterates sensitive characteristics
Extent & Context	Extent	Describe the size of the area, number of sites and the proportion of a population affected by an effect
	Context	Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions
Probability	Likely	Effects that can reasonably be expected to occur because of the planned project if all mitigation measures are properly implemented
	Unlikely	Effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented

Impact Characteristic	Term	Description
Duration and Frequency	Momentary	Effects lasting from seconds to minutes
	Brief	Effects lasting less than a day
	Temporary	Effects lasting less than a year
	Short-term	Effects lasting one to seven years
	Medium-term	Effects lasting seven to fifteen years
	Long-term	Effects lasting fifteen to sixty years
	Permanent	Effect lasting over sixty years
	Reversible	Effects that can be undone, for example through remediation or restoration
	Frequency	Describe how often the effect will occur, (once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually)
Type	Indirect	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	The addition of many minor or significant effects, including effects of other projects, to create larger, more significant effects.
	'Do Nothing'	The environment as it would be in the future should the subject project not be carried out
	'Worst Case'	The effects arising from a project in the case where mitigation measures substantially fail
	Indeterminable	When the full consequences of a change in the environment cannot be described
	Irreversible	When the character, distinctiveness, diversity, or reproductive capacity of an environment is permanently lost
	Residual	Degree of environmental change that will occur after the proposed mitigation measures have taken effect
	Synergistic	Where the resultant effect is of greater significance than the sum of its constituents

1.8.3 Significance Criteria

The significance of the potential effects of the Development have been classified by comparing the character of the predicted effect to the sensitivity of the receiving environment as defined in **Table 1.6**.

Table 1.6: Rating of Significant Environmental Impacts (EPA Guidelines, 2022)

Description of Effect Character/Magnitude/Duration/Probability/Consequences					
Existing Environment (Significance /Sensitivity)		Negligible	Low	Medium	High
Extremely High		Not Significant	Profound/ Very Significant	Profound	Profound
Very High		Not Significant	Moderate	Significant	Profound/ Very Significant
High		Not Significant	Slight	Significant/ Moderate	Very Significant
Medium		Not Significant/ Imperceptible	Slight	Moderate	Significant/ Moderate
Low		Imperceptible	Slight/ Not Significant	Slight	Slight/ Moderate
Negligible		Imperceptible	Imperceptible	Imperceptible	Imperceptible

1.8.3.1 Mitigation Measures and Residual Effects

There are three established strategies for impact mitigation - avoidance, reduction and remedy. The efficacy of each is directly dependent on the stage in the design process at which environmental considerations are taken into account, (i.e., impact avoidance can only be considered at the earliest stage, while remedy may be the only option available for projects where avoidance and reduction were not possible).

The EIA coordinator has engaged with stakeholders, which has provided the benefit of developing and refining mitigation through an iterative process rather than 'adding on' such measures at the end of the Project. Mitigation measures have been prioritised and embedded into the design phase of the Project to avoid, reduce and offset any significant adverse effects. These are referred to within this EIAR as 'embedded mitigation'.

Relevant mitigation measures are discussed within each technical chapter of this EIAR.

Chapter 17: Interactions of the Foregoing – Appendix 17.1 provides a summary of mitigation measures for all technical assessments.

1.8.3.2 Cumulative Effects

The assessment has considered 'cumulative effects'; these are effects that result from increasing changes caused by past, present or those which are reasonably foreseeable together with the Development. Consideration has been given to the combined cumulative effects of several developments that may, on an individual basis, be insignificant, but which cumulatively may give rise to a significant effect. A cumulative assessment has been carried out in each of the technical chapters.

1.8.3.3 Statement of Significance of Effects

The statement of significance outlines the conclusion of each technical assessment in order to provide a final overall conclusion as to the significance of the Development under the terms of the EIA Directive.

1.9 SCOPING AND CONSULTATION

The scoping and consultation process was carried out in accordance with the EIA Directive and in accordance with the Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022).

The 2014 EIA Directive Circular (PL 05/2018) notes that:

"It is a requirement of the EIA process to consult with statutory consultees and to take into account any submissions made by these consultees. Such submissions may contain expert specialist opinions on topics to be assessed in the EIA process..."

A scoping exercise was carried out in August 2024. **Table 1.7** documents individuals and organisations that have been consulted as part of the EIA process. The purpose of this consultation process was to identify the content and extent of the information to be submitted to the Competent Authority under the EIA process. As such, the consultation process informs the various organisations of the Development, thereby providing an opportunity to submit comments and to offer information relevant to the preparation of this EIAR. Responses can be found in **Volume IV, Appendix 1.3: Scoping Opinion**.

Table 1.7: Scoping Responses Received on The Project

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
Agriculture		
Department of Agriculture, Food and the Marine	Response received on the 28/08/2024 states: The following are the comments from this Division in relation to the proposed development: If the proposed development will involve the felling or removal of any trees, the developer must obtain a Felling Licence from this Department before trees are felled or removed. A Felling Licence application form can be obtained from Felling Section, Department of Agriculture, Food and the Marine, Johnstown Castle Estate, Co. Wexford. Email: felling.forests@agriculture.gov.ie or www.gov.ie - Tree Felling Licences A Felling Licence granted by the Minister for Agriculture, Food and the Marine provides authority under the Forestry Act 2014 to fell or otherwise remove a tree or trees and/or to thin a forest for silvicultural reasons. The Act prescribes the functions of the Minister and details the requirements, rights and obligations in relation to felling licences. The principal set of regulations giving further effect to the Forestry Act 2014 are the Forestry Regulations 2017 (S.I. No. 191 of 2017). The developer should take note of the contents of Felling and Reforestation Policy document which provide a consolidated source of information on the legal and regulatory framework relating to tree felling; www.gov.ie - Tree Felling Licences As this development is within forest lands, particular attention should be paid to deforestation, turbulence felling and the requirement to afforest alternative lands. In order to ensure regulated forestry operations in Ireland accord with the principles of sustainable forest management (SFM), as well fulfilling the requirements of other relevant environmental protection laws, the Department (acting through its Forest Service division) must undertake particular consultations, and give certain matters full consideration during the assessment of individual Felling Licence applications. This includes consultation with relevant bodies, the application of various protocols and procedures (e.g. Forest Service Appropriate Assessment Procedure), and the requirement for applicants on occasion to provide further information (e.g. a Natura Impact Statement). Consequently, when the Forest Service is considering an application to fell trees, the following applies: 1. The interaction of these proposed works with the environment locally and more widely, in addition to potential direct and indirect impacts on designated sites and water, is assessed. Consultation with relevant environmental and planning authorities may be required where specific sensitivities arise (e.g. local authorities, National Parks & Wildlife Service, Inland Fisheries Ireland, and the National Monuments Service); 2. Where a tree Felling Licence application is received, the Department will publish a notice of the application before making a decision on the matter. The notice shall state that any person may make a submission to the Department within 30 days from the date of the notice. The notices are published online at: www.gov.ie - Felling Licence Applications 3. Third parties that make a submission or observation will be informed of the decision to grant or refuse the licence, and on request, details of the conditions attached to the licence, the main reasons and considerations on which the decision to grant or refuse the licence was based, and where conditions are attached to any licence, the reasons for the conditions. Both third parties and applicants will be also informed of their right to appeal any decision within 14 days to the Forestry Appeals Committee. Felling Licence decision are published online at:	Chapter 6- Section 6.3.2 Chapter 7- Section 7.4 Chapter 8- Section 8.4.2.4 and 8.4.2.7, Chapter 12- Section 12.5.2.

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	gov.ie - Felling Licence Decisions (www.gov.ie) It is important to note that when applying to a Local Authority, or An Bord Pleanála, for planning permission where developments are: a) subject to an EIA procedure (including screening in the case of a sub-threshold development) and any resulting requirement to produce an EIAR; and/or b) subject to an Appropriate Assessment procedure (including screening) and any resulting requirement to a Natura Impact Statement (NIS); and c) the proposed development in its construction or operational phases, or any works ancillary thereto, would directly or indirectly involve the felling and replanting of trees, deforestation for the purposes of conversion to another type of land use, or replacement of broadleaf high forest by conifer species, 1. that there is a requirement inter alia under the EIA Directive for an overall assessment of the effects of the project or the alteration thereof on the environment to be undertaken, including the direct and indirect environmental impact of the project; 2. pursuant to Article 2(3) of the EIA Directive, the Department of Agriculture, Food and the Marine strongly recommends that, notwithstanding the fact that a parallel consent in the form of felling licence may also have to be applied for, any EIAR and/or NIS produced in connection with the application for planning permission to the Local Planning Authority or An Bord Pleanála, should include an assessment of the impact of and measures, as appropriate, to prevent, mitigate or compensate for any significant adverse effects direct or indirect identified on the environment arising from such felling and replanting of trees, deforestation for the purposes of conversion to another type of land use, or replacement of broadleaf high forest by conifer species. 3. Please note that there must be absolute spatial consistency between the felling licence areas submitted to DAFM (second authority) and all related planning documents submitted to the first authority in respect of the felling area(s)	
Telecommunication		
Coimisiun na Mean	Response received on the 06/08/2024 states: Coimisiún na Meán does not perform an in-depth analysis of the effect of wind turbines or electrical sub stations on FM networks. However, we are not aware of any issues from existing windfarms or electrical sub stations into existing FM networks. Also, the proposed substation is not located close to any existing or planned FM transmission sites.	Chapter 15 Section 15.5.
2RN	Response received on 14/04/2022 stating: "The site will have no impact on 2rn's fixed linking. Due to the risk of interference to broadcast services from Maghera we would ask that a protocol be signed between the developer and 2rn should the site go ahead.	Chapter 15 Section 15.5.
Aviation		
Shannon Airport Authority	Response received 13/09/2024 stating: Shannon Airport Authority DAC would make the following comments as a prescribed body in respect of this type of proposed development.	Chapter 15 Section 15.7.

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	In general terms, the siting of wind turbines at this location may have implications for the operations of the communication, navigation and surveillance systems used by Air Nav Ireland for the separation and safety of aircraft. The geographical siting of these turbines may also have implications for the flight paths of aircraft. Shannon Airport Authority DAC has specific responsibility to define the airspace around its aerodrome which must be maintained free from obstacles to permit the intended aircraft operations at the aerodrome to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around it. This is achieved by establishing a series of obstacle limitation surfaces (OLS) that define the limits to which objects (temporary or permanent) may project into the airspace. These surfaces may extend many kilometres outwards from the active runway strip at the aerodrome. With specific reference to the Moanmore geographical location, and arising from our own internal assessment, this development of three turbines will have no impact on the aerodrome OLS. The development is not within the protection areas as per our safeguarding maps. As there is no penetration of the aerodrome OLS surfaces, it is unlikely that there will be any Annex 14 OLS impacts due to the proposed wind farm. Shannon Airport does, however, also note and share the concerns of our colleagues in Air Nav Ireland specifically relating to potential impacts on IFP's and NAVAIDS/radar systems. In this instance we are already aware of correspondence made to you directly by the Air Nav Ireland, Airspace and Navigation Manager (dated 14th Aug) indicating that no issues have been identified with this development in respect of the above systems. Please note: For developments of this type the following conditions/requirements must be considered: • If the turbines are within 45km of Shannon Airport's ARP (Aerodrome Reference Point) and are greater than 100m in height they would be required to be included in the IAA Electronic Air Navigation Obstacle Dataset. • Also, standard: Chapter Q (Visual Aids for Denoting Obstacles) of the Certification Specifications for Aerodrome Design – Current Issue, contained in the EASA aerodrome rules must be applied to the turbines as they would be regarded as an extensive object. • During the construction phase of any development, any crane activity on the site must be pre-approved by the completion of the Shannon Airport Crane Operations application form (at least 30 days in advance) of any crane erection taking place in order for assessments to be carried out by the Airport, IAA and Air Nav Ireland against possible interferences by cranes against communication, navigation and surveillance systems.	
IAA	Response received on 7/09/2024 states: I note this proposal consists of 3 x turbines with a blade & p height of 150m above ground level. Given the proposed position of T3 is within 39kms of Shannon Airport, it is imperative that this scoping report and details of the proposal be shared with Shannon Airport Authority and Air Nav Ireland as soon as practicable. Given the nature of the proposal and its relative position to Shannon Airport, it is likely that significant technical assessments will be required to determine whether there is any potential adverse impact on the safety of aircraft operations at Shannon Airport and also with regard to the enroute communication, navigation and surveillance equipment that is positioned in the region and operated by Air Nav Ireland.	Chapter 15: Section 15.7.

Consultee Organisation	Implications for the EIA/Design				EIAR Chapter / Section where Comments have been addressed
	The technical assessments will have to be prepared in coordination with both Shannon Airport Authority and Air Nav Ireland and where necessary, by approved technical experts for either Flight Procedure Design review or Communications, Navigation and Surveillance / Navigational Aids impact. The technical assessments will need to review not only the proposed wind farm turbine positions but any cranes necessitated during the construction, if planning consent were to be granted. As such, and given that Shannon Airport Authority and Air Nav Ireland have the primary responsibility for safeguarding Shannon Airport and terminal / enroute navigational aids respectively, please forward the scoping report to the following contacts:				
	Aerodrome Operator – Shannon Airport:	Air Nav Ireland	Shannon Tower Business Unit	Air Nav Ireland Engineering	
	Mr. Paul Hennessy Safety Compliance and Environment Manager Shannon Airport Authority DAC t: +353-61-712471 m: +87-2382453 e: paul.hennessy@shannonairport.ie	Mr. Cathal Mac Criostail Airspace & Navigation Manager Air Nav Ireland The Times Building, 11-12 D'Olier Street, Dublin 2, D02 T449, Ireland cathal.maccristail@airnav.ie & planning@airnav.ie +353 (0)1 6031173 +353 (0)86 0527130	Mr. Jonathan Byrne Operations Manager STBU/CTBU Air Traffic Control Air Nav Ireland jonathan.byrne@airnav.ie +353 61 703704 +353 87 9375486	Mr. Charlie O'Loughlin Manager Surveillance M&E Systems AirNav Ireland P: +353 61 366161 M: +353 877995218 E: charlie.oloughlin@airnav.ie A: Shannon ATCC, Ballycasey Cross, Shannon. Co. Clare, Ireland.	

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	At this time, the Irish Aviation Authority has no particular requirements for incorporation into the scoping report beyond the essential consultation and coordination to be undertaken with Shannon Airport Authority and Air Nav Ireland by the consultants and the developer in relation to this proposal in advance of any planning application. If a planning application were to be lodged and subject to no negative impacts being shown to either the aircraft operations at Shannon Airport or enroute navigational aids, then at that time, the Authority would offer the usual general observations concerning the marking and lighting of wind turbines, the requirement for the notification of any crane operations with at least 30 days' notice to Shannon Airport Authority and Air Nav Ireland and the requirement for surveying of as constructed coordinates and elevations and the promulgation of aeronautical data.	
AirNav Ireland	Response received on the 12/08/2024 states: I can confirm that the location of the proposed development at 22nm from Shannon Airport, combined with a maximum elevation of c.165m Above Mean Sea Level (AMSL: Site elevation + Height of turbines) does not constitute an issue for AirNav Surveillance (radar) systems.	Chapter: 15 Section 15.7.
AirNav Ireland	Response received on the 14/08/2024 states: For the purposes of the planning application process as referenced above and in my capacity as AirNav Ireland Air Navigation Service Provider (ANSP) Manager Airspace and Navigation, I have reviewed the Moanmore Lower Wind Farm, Moanmore, Co. Clare. General Scoping Document received which was accompanied by your letter: Request for Scoping Opinion on information to be included in the preparation of an Environmental Impact Assessment (EIA) for Moanmore Lower Wind Farm, Moanmore Lower, Co. Clare. There are three areas of interest for AirNav Ireland, in regard to safeguarding of: • Instrument Flight Procedures (IFPs) serving Shannon Airport • Navigation Aids located at the airport • Surveillance (Radar) system managed by AirNav The relevant teams have also reviewed the General Scoping Document to assess any potential impacts by this proposed Wind Farm. In all cases above, no issues have been identified with this proposed development.	Chapter 15: Section 15.7.
Ecology		
Bat Conservation Ireland	Response received on the 07/08/2024 states: Unfortunately, as Bat Conservation Ireland is a very small organisation, with limited resources, we do not have the capacity to get involved in planning issues. Please note that Bat Conservation Ireland is concerned that a request for our input/consultation/opinion/assistance on planning applications and reports, or objections/comments on same, can sometimes imply that we have been consulted for our opinion on planning matters when Bat Conservation Ireland does not, in fact, provide opinions or comments on developments. Therefore, please note that this response should not be construed as a consultation with Bat Conservation Ireland regarding any planning or development matter or proposal. In order to avoid misunderstandings, please do not use this terminology in your reports to describe this transaction.	N/A
Irish peatland conservation council	Response received on the 22/08/2024 states: Thank you for consulting with the Irish Peatland Conservation Council regarding the proposed development. The Irish Peatland Conservation Council (IPCC) was established in 1982 and has 40 years of experience in peatland conservation. Our aim is to conserve a representative sample of intact peatlands for present and future	Chapter: 6 Table 6.3,

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	generations to enjoy and benefit from the ecosystem services they provide. Only 25% of Ireland's original range of peatland is deemed worthy of conservation[1], 75% have become degraded from multiple pressures such as peat extraction, agriculture, forestry, habitat fragmentation and developments[1]. Specifically, County Clare has lost 89% of its original peatland habitat[1] and this has had a major effect on biodiversity, climate regulation and the ecological functioning of the County's indigenous habitats and species. This makes it imperative that all must be done to reverse the climate and biodiversity crisis which was declared by Government in 2019. Our work is guided by our 6th Action Plan "Ireland's Peatland Conservation Action Plan 2020" and a recent amendment "Peatlands & Climate Change Action Plan 2030", which focuses on the role of peatlands in tackling predicted climate change. These documents are available for download on our website at www.ipcc.ie. Many of the actions in our plan have been included within the National Peatlands Strategy which has been adopted by every Government Department and Local Authority. The "National Peatlands Strategy" can be downloaded from www.npws.ie. IPCC is not inherently opposed to the construction of wind farms as we understand that Ireland has legal obligations to reach net-zero emissions by 2050 and a 51% reduction by the end of this decade in line with the Climate Action and Low Carbon Development (amendment) Act 2021, but, there is a responsibility on wind farm developers to ensure that there is no loss of important peatland habitat and the species that utilise it. Also, bad construction practices can result in an active carbon sink being converted to a carbon source which is detrimental to any effort in combating anthropogenically caused global climate change and biodiversity loss. Legal Obligations to Protect Peatlands We are legally bound by National and European legislation (The Irish Wildlife Acts, Habitats and Bird's Directives) and international conventions (Ramsar, Bern Convention, Convention on Biological Diversity) to do our utmost to protect peatlands now and for future generations. Peatland habitats have been severely diminished in the country and this destruction is an issue in other legislation and conventions such as the UN Convention on Climate Change, Bonn Convention, World Heritage Convention, Water Framework Directive, Environment Liability Directive, Planning and Development Acts, National Monuments Acts, Environmental Directive, EIA and SEA. All of these legislative instruments have been adopted by Ireland and the IPCC ask that you assess your development with regard to these legal obligations. Bogland The IPCC would advise any developer planning construction in, or within close proximity to peatland habitat to be familiar with the Environmental Protection Agency funded project BOGLAND (www.ucd.ie/bogland). This project recommends the best practice guidelines to ensure no damaging development occurs on, or affects peat soils and peatlands of conservation value. Nitrogen It has been highlighted to the Irish Peatland Conservation Council that nitrogen is becoming an issue for designated sites, halting many construction projects in the Netherlands and in 2018 in the UK 39 of 57 Special Areas of Conservation listed on the APIS website (http://www.apis.ac.uk) exceeded the Critical Load Threshold for nitrogen (some by over 300%). This is having negative impacts on the vegetation of the designated habitats and is working against the conservation objectives of the sites. There are various sources of excess nitrogen such as construction (e.g. roads, traffic, developments), urban waste water (pollution) and agriculture (e.g. fertilizer/piggyers) and can enter a habitat via wet or dry deposition. The Irish Peatland Conservation Council ask that you assess the development in terms of its impact in regards to nitrogen and its affects on designated sites. We also	Chapter 7 Sections 7.2.2 and 7.4.5, Chapter 8: Table 8.18, and Chapter 9: Table 9.8.

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	ask that there is a long term monitoring agenda implemented to ascertain the long term emission rates/vectors which can be used to inform future projects. The impacts also need to be taken into account cumulatively along with other developments and projects as they may interact synergistically. Tullagher Lough and Bog SAC (Sitecode=2343):- The IPCC have recently purchased 63.12ha of Kett's Lough located within the Tullagher Lough and Bog SAC for nature conservation and are working with the NPWS in regards to its management. This site is an important overwintering ground for Greenland White-Fronted Geese and also known to be utilised by Whooper Swans. Quoting the NPWS Site Synopsis "The site is important for over-wintering Greenland White-fronted Goose, a species listed on Annex I of the E.U. Birds Directive, which regularly use the grasslands to the west of Tullagher Lough – average of 47 birds over the four winters 1994/95 to 1998/99". Whooper Swan, Kestrel and Hare have also been recorded utilising the SAC. The site is also important for Marsh Fritillary, Ireland's only protected butterfly, ANNEXED under the EU Habitats and Species Directive. Marsh Fritillary are known to inhabit the drier grassy areas surrounding Kett's Lough. Please also use historical and recent data from the National Biodiversity Data Centre when assessing the current species utilising the areas potentially impacted by the proposed development as the NBDC manage and provide citizen science data on the biodiversity that has been recorded by members of the public and national species monitoring data sets. The impacts on these species and habitats they utilise from the proposed development needs to be ascertained. The impacts also need to be quantified cumulatively with other developments in the area, including operational and proposed wind farms. Designated sites are being surrounded by developments and this is affecting their efficacy to provide meaningful conservation. The IPCC Peatland Sites Database list Agricultural reclamation, burning, drainage, mechanical cutting, overgrazing and dumping/infilling as threats to Tullagher Lough and Bog SAC, and also lists the same as causing actual damage. While the ombrotrophic portions of peatland are fed by rainwater exclusively, transition mire, soak systems and lagg zones can be influenced by other external water influences where they meet other substrates at the margins. Fen has also been identified and please ensure that the water quality entering the SAC (and all other sensitive sites respectively) will not be reduced and impact on the sensitive habitats contained within the designated sites. The Conservation Objectives for this site, published on www.npws.ie, describe nitrogen levels for Tullagher Lough & Bog SAC as exceeding its critical load of 5kg/ha/year and is near double this at 9.5kg/ha/year. This is affecting the species composition over time and needs to be reversed. Please assess the nitrogen impacts from the proposed development including the construction phase, operational phase and the decommissioning on all designated sites accumulatively with all other developments and practices in the area (such as agriculture which is the main source of nitrogen, road construction and traffic also need to be included). Bird Nesting Please ensure that all precautions are taken in regards to protecting ground nesting birds during the breeding season. It is also illegal to remove vegetation during the period from 1st March to 31st August in order to maintain biodiversity (Section 40 of the Wildlife Act 1976). Training should be given to construction workers to ensure that the laws regarding the cutting, grubbing, burning or destruction by other means to hedgerows/vegetation are adhered to. Carbon Accounting	

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	The carbon inputs and outputs need to be investigated for the proposed development. As it is predominantly on peat soils which is visibly (from aerial imagery) degraded, this site is most certainly currently a carbon source - impacting on the aquatic habitats surrounding the site through peat sedimentation, eutrophication and ammonia emissions and is also releasing carbon to the atmosphere. How does this project propose to remedy this? What impact from drainage will occur due to the hydrological management of the wind farm infrastructure? How much peat will be removed for the development and will there be any restoration of the habitats contained within the development area? As turbary is also an issue and is visible on mapping resources, how does the project aim to manage this? Has turbary finished on the site and is there an opportunity for rehabilitation/restoration? BOCCI Bird surveys for species listed within the Birds of Conservation Concern in Ireland (Bird Red List) need to be conducted at the appropriate time of the year to ascertain possible disruption to behaviour or damage to breeding sites from construction works and operation of the proposed development. The IPCC ask that all species Red Listed within the National Parks & Wildlife Service Irish Wildlife Manual Series (https://www.npws.ie/publications/red-lists) be investigated within the National Biodiversity Data Centre species records to find out if they have been recorded within an appropriate distance of any proposed construction or restoration works. If a susceptible species is identified please ensure that works are planned so that they will not detrimentally impact on them and if possible responsible developers would improve habitat quality through restoration and rehabilitation. The Government of Ireland officially announced a Climate and Biodiversity Emergency in 2019 and this can not be reversed if we do not return peatland habitats to functioning ecosystems. Water Framework Directive The rivers and streams around the vicinity of the proposed project have been assessed under the Water Framework Directive and range from poor, moderate and good ecological status. The proposed project needs to address how it will manage its impacts to these aquatic habitats, i.e where works may improve conditions or degrade them. The construction works may increase sediment load into the receiving waters and ongoing hydrological management of the development during operation may also increase emissions. The hydrological plans for the proposed development need to be made available. Will the site be fully re-wet after construction or will there be ongoing drainage for management of the hardstands, cabling, roads and other infrastructure? How will this affect the carbon accounting, biodiversity potential and the Water Framework Directive? Additionally, there are rivers and stream that would be unassigned monitoring by the EPA and these should be taken into account also. Wetland Surveys Ireland (www.wetlandsurveys.ie) Wetland Surveys Ireland have identified a number of wetlands which need to have an ecological survey to ascertain the biodiversity and ecological value within them. Please liaise with WSI to gather as much information about these sites as possible and ensure that the proposed development will not have an adverse effect on the habitats or species that are utilising them or moving/migrating between them and other significant sites. North-Western Europe has lost ~90% of its wetlands and it is imperative that all is done to halt the loss of this important climate regulating, carbon sequestering and biodiverse landscape. Please assess your projects impacts on the sites within a reasonable distance from the proposed development and ensure that no detrimental pressures are imposed upon them including diffuse and point sources of potential water pollution and that possible accidents during construction are pre-empted and have mitigation plans to deal with chemical spills. Many of the wetlands contain	

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	fen/marsh or transition mire habitats which may be susceptible to ground water emissions resulting from construction or operation of the proposed development. Please include :- WMI_CL475, WMI_CL443, WMI_CL516, WMI_CL471, WMI_CL474, WMI_CL476, WMI_CL473, WMI_CL515. Fen Habitat Wetland Surveys Ireland have identified that there is fen present at a number of sites, but many have yet to have a full ecological and hydrological survey to ascertain what species and natural features are present. These sites which contain fen could be geographically important as they may be unique in the location and at the extreme of this habitat type's range. The National Parks and Wildlife Service have yet to publish the results of a National Fen Survey and as such Ireland is not aware of the full diversity and variation in fen habitats or the species that utilise them. This is important as it means that we can not effectively conserve a representative sample of fen peatland and we also do not know what ecological parameters are important in regards to biodiversity protection and climate change reversal. We must ensure that fen habitats maintain their wetland integrity before they are lost to drainage, reclamation, eutrophication and development. There has been a preliminary study in regards to starting the National Fen Survey which is available here >> Scoping Study and Pilot Survey of Fens Irish Wildlife Manual 143, NPWS, 2023. Please ensure that there is no loss of fen habitat due to the proposed development. IPCC asses that there is only 21%[1] of the original extent of fen left in a conservation worthy condition so it is of utmost importance that it is protected from developments. Curlew (Numenius aquata) The Curlew is one of the most endangered species in Ireland and the resident breeding population has declined by 98% since the 1980s (NPWS, 2022). The IPCC would like to remind you that this bird is listed as an ANNEX II section II bird species within the E.U Birds Directive [Council Directive 79/409/EEC] and also has a national status of Red on the Birds of Conservation Concern in Ireland list. The Curlew Conservation Programme (NPWS) is working to bring this species back from near extinction in Ireland and we would urge developers to liaise with them and BirdWatch Ireland in relation to any development. Breeding Curlew are site specific and will not possibly return if there are construction and operational disturbances from the proposed development. This needs to be scrutinized with ornithological surveys within the recommended survey times for breeding Curlew to ascertain as to whether they are present and if they utilise the site for any purposes such as foraging. The operational turbines may also affect the Curlew's local migration routes. It would be disastrous if this project was to contribute to the further decline of this nearly extinct species. Invasive Species Peatlands, in their natural state, are not generally susceptible to invasive species as the high acidity, low nutrient and extremely wet conditions are not suitable for many species, but as most peatland in Ireland has not been responsibly utilised and is degraded the chance for invasives to take hold is increased. The movement of people and vehicles across the proposed development (and access routes) increases the risk of invasive species being introduced. Please use best practice bio-security procedures and measures to minimise the risk of spreading invasives and also ensure that there are contingency plans in place if they are identified during works. The sites need to be investigated before any works to fully understand the assemblage of invasives if any and to fully explore the implications on the proposed development. Engaging locals in this regard may help to garner local knowledge in the location of invasives which would highlight possible transmission vectors. The Irish Peatland	

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	Conservation Council appreciate that stringent measures are needed for a strong defence against the impacts of invasive species and implore developers to work with and prioritise an invasive species management plan which identifies established detrimental species within the project area, describes actions to eradicate them and also plugs the gaps where the vectors for introduction may be identified. Please refer to www.NPWS.ie, National Biodiversity Action Plan 2017-2021 and the Irish Peatland Conservation Action Plan 2020 (www.ipcc.ie) for information regarding the need to control invasives. National Monuments Peatlands in Ireland hold a great deal of cultural and ancestral history, preserved in the anaerobic conditions. Ireland has international obligations under the European Convention on the Protection of the Archaeological Heritage, ratified by Ireland in 1997. Article 1 of this convention states that Ireland must "protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study". There needs to be scientific supervision from an independent body that will evaluate the proposed wind farm area for its archaeological importance. The IPCC could not support the development before a full archaeological survey is undertaken and the necessary precautions and mitigations are in place to ensure that no loss of cultural archaeological information occurs as course of the proposed development if permitted. Conclusion We are now realising that the methods we have used to fuel our economy and provide materials has been far from sustainable. The biodiversity of Ireland, which evolved specialised because of the unique natural history and biogeography which presented rare habitats has been forced into a spiralling decline. Without a real investigation and reversal of our impacts on the environment these native specialised peatland species will be lost. Unfortunately, the path to maximising renewable energy production is resulting in direct loss of biodiversity through habitat fragmentation, drainage and disturbance, with many designated sites suffering from development encirculation. It is in this regard that IPCC have made comments on the proposed project and we appreciate you taking the time to read through our concerns.	
Soils & Water		
OPW	Response received on the 07/08/2024 states: I refer to your email dated 6th Aug 2024 in relation to the above project seeking comments or observations from this office. We would make the following comments. If any new culverts or bridges (or modifications to any existing culverts or bridges) are required to cross watercourses as part of the development or on proposed or existing access roads to serve or access the development, you should be aware that these require consent from the Commissioners of Public Works. This is a requirement of Section 50 of the Arterial Drainage Act of 1945 as amended. I attach a copy of our brochure on obtaining Section 50 consent for your information. Further information on the process including copies of the appropriate application form and brochure are available on our website at https://www.gov.ie/en/publication/957aa7-consent-requirements-constructionalteration-of-watercourse-infrastru/ Please note that, in the context of seeking consent under Section 50, the current required design standard for bridges or culverts is based on the flood with an annual exceedance probability of 1% (often referred to as the 100 year flood), increased by 20% to	Chapter 9 Table 9.8, and Appendix 9.1

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	cater for the effects of Climate Change. Bridges or culverts are required to be able to convey this design flood without significantly altering the hydraulic characteristics of the watercourse – further details on this issue are available in the brochure and can be clarified depending on the circumstances of any particular proposed bridge or culvert. You should be aware that a grant of Planning Permission by a planning authority for a development which contains bridges or culverts does not confer section 50 consent on the applicant, nor does it absolve the applicant from the requirement to obtain such consent from the Commissioners. With regard to the proposed Grid Connection Route which is not indicated in your documentation, it is possible that this route may cross several watercourses. If the cable and ducting are to be buried in the road, as they cross bridges over the water courses, and there is no interference with the opening in the bridge spanning the watercourse, then there is no issue. On the other hand, if it is proposed to pass the cable in its ducting through the opening of any bridge or culvert, this would be considered to be a modification of a bridge and it would require the consent of the Commissioners under Section 50 as mentioned above. Similarly, if it is proposed to carry the cable in its ducting across watercourses on new support structures spanning the watercourses, these should be treated as if they are bridges, and the consent of the commissioners under Section 50 should be obtained. If the cable and ducting is to be buried under the natural bed of the watercourses being crossed, Section 50 would not apply, and we would recommend that the duct be buried a sufficient distance below the natural bed to allow for erosion and mobility of the stream bed. We would recommend that a flood risk assessment be carried out with regard to the proposed development and its construction. This should consider all sources, pathways and receptors of flood risk. This should be carried out in accordance with the principles set out in the guideline document "The Planning System and Flood Risk Management" as published by the Minister for the Environment, Heritage and Local Government and the Office of Public Works. Please be aware that this is a separate issue from the requirement to obtain Section 50 consent as mentioned above. <i>In terms of the preparation of an EIA, the matters referred to above principally relate to the Hydrology Section, and the Risk of Flooding on a development such as this can impact on Landscape (e.g. landslides that have been reported in recent years), Infrastructure (roads and bridges) and people and their homes, among other things. The aim of the Section 50 process, and the Flood Risk Assessment which is recommended would be to mitigate any increased risk of flooding and the consequences of same, as arising from the proposed development.</i>	
Geological Survey Ireland	Response received on the 19/08/2024 states: Geological Survey Ireland is the national earth science agency and is a division of the Department of the Environment, Climate and Communications. We provide independent geological information and gather various data for that purpose. Please see our website for data availability. We recommend using these various data sets, when conducting the EIAR, SEA, planning and scoping processes. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'. The publicly available data referenced/presented here, should in no way be construed as Geological Survey Ireland support for or objection to the proposed development or plan. The data is made freely available to all and can be used as independent scientific data in assessments, plans or policies. It should be noted that in many cases this data is a baseline or starting point for further site specific assessments. With reference to your email received on the 13 August 2024, concerning the proposed Moanmore Lower Wind Farm, Moanmore Lower, Co. Clare, Geological Survey Ireland would encourage use of and reference to our datasets. Please find attached a list	Chapter: 8 Table 8.18, and Chapter 9 Table 9.8.

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	of our publicly available datasets that may be useful to the environmental assessment and planning process. We recommend that you review this list and refer to any datasets you consider relevant to your assessment. The remainder of this letter and following sections provide more detail on some of these datasets. Geoheritage A national inventory of geoheritage sites known as County Geological Sites (CGSs) is managed by the Geoheritage Programme of Geological Survey Ireland. CGSs, as adopted under the National Heritage Plan, include sites that are of national importance which have been selected as the very best examples for NHA (Natural Heritage Areas) designation. NHA designation will be completed in partnership with the National Parks and Wildlife Service (NPWS). CGSs are now routinely included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system. CGSs can be viewed online under the Geological Heritage tab on the online Map Viewer. The audit for Co. Clare was completed in 2005. The full report details can be found here. Our records show that there are no CGSs in the vicinity of the proposed Wind Farm. Groundwater Geological Survey Ireland's Groundwater and Geothermal Unit, provides advice, data and maps relating to groundwater distribution, quality and use, which is especially relevant for safe and secure drinking water supplies and healthy ecosystems. Proposed developments need to consider any potential impact on specific groundwater abstractions and on groundwater resources in general. We recommend using the groundwater maps on our Map viewer which should include: wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps. For areas underlain by limestone, please refer to the karst specific data layers (karst features, tracer test database; turlough water levels (gwlevel.ie). Background information is also provided in the Groundwater Body Descriptions. Please read all disclaimers carefully when using Geological Survey Ireland data. The Groundwater Data Viewer indicates an aquifer classed as a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones' underlies the proposed development. The Groundwater Vulnerability map indicates the area covered is classed as 'Low' to 'Moderate' Vulnerability. GWClimate is a groundwater monitoring and modelling project that aims to investigate the impact of climate change on groundwater in Ireland. This is a follow on from a previous project (GWFlood) and the data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the Map viewer. Geological Survey Ireland has completed Groundwater Protection Schemes (GWPSs) in partnership with Local Authorities, and there is now national coverage of GWPS mapping. A Groundwater Protection Scheme provides guidelines for the planning and licensing authorities in carrying out their functions, and a framework to assist in decision-making on the location, nature and control of developments and activities in order to protect groundwater. The Groundwater Protection Response overview and link to the main reports is here: https://www.gsi.ie/en-ie/programmes-and-projects/groundwater/projects/protecting-drinking-water/what-is-drinking-water-protection/county-groundwater-protection-schemes/Pages/default.aspx Geological Mapping Geological Survey Ireland maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible. We would encourage you to use these data which can be found here, in your future assessments.	

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	Please note we have recently launched QGIS compatible bedrock (100K) and Quaternary geology map data, with instructional manuals and videos. This makes our data more accessible to general public and external stakeholders. QGIS compatible data can be found in our downloadable bedrock 100k .zip file on the Data & Maps section of our website. Geohazards Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides, flooding and coastal erosion are the most prevalent of these hazards. We recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so. Geological Survey Ireland has information available on landslides in Ireland via the National Landslide Database and Landslide Susceptibility Map both of which are available for viewing on our dedicated Map Viewer. Associated guidance documentation relating to the National Landslide Susceptibility Map is also available. Geological Survey Ireland also engaged in a national project on Groundwater Flooding. The data from this project may be useful in relation to Flood Risk Assessment (FRA) and management plans, and is described in more detail under 'Groundwater' above. Natural Resources (Minerals/Aggregates) Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our Minerals section of the website. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our Map Viewer. We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area. In keeping with a sustainable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed development are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered. Geochemistry of soils, surface waters and sediments Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality. Tellus is a national-scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland. At present, mapping consists of the border, western and midland regions. Data is available at https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx. Guidelines The following guidelines may also be of assistance: • Institute of Geologists of Ireland, 2013. Guidelines for the Preparation of the Soils, Geology and Hydrogeology Chapters of Geology in Environmental Impact Statements. • EPA, 2022. Guidelines on the information to be contained in Environmental Impact Assessment Reports (EIAR)	

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	Other Comments Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. The data would be added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to the Geological Mapping Unit, at mailto:GeologicalMappingInfo@gsi.ie, 01-678 2795. I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to the Geological Survey Ireland Planning Team at GSIPlanning@gsi.ie.	
Health		
HSE	Response received on the 02/09/2024 states: Proposed development: The Developer intends to apply for planning permission to Clare County Council for this wind farm in the townland of Moanmore Lower, Co. Clare. The proposal is for three wind turbine generators on the site with a nominal output of up to 5 MW each. The proposed wind turbines will have hub heights of up to 80m, rotor diameters of up to 136m and overall tip heights of up to 150m. The following HSE stakeholders were consulted on the scoping on 7th August 2024: • Emergency Planning – Kay Kennington • Estates – Helen Maher/Stephen Murphy • Director of National Health Protection – Eamonn O'Moore / Ina Kelly • CHO – Maria Bridgeman Clarification on the content of this submission should be made, in the first instance, to Gerard Leen, Principal Environmental Health Officer, at Gerry.leen@hse.ie Visit by the National Environmental Health Service to the Proposed Development Area A visit to the proposed development site was carried out by a SEHO on 18th August 2024. The zoning of the proposed site in Clare County Development Plan is 'open for consideration for wind energy'. As a result of this visit, it is important that the following are specifically considered in the EIA: a) Any likely significant effect on Moyasta National School during the construction phase, any likely significant impacts from construction traffic during the day and particularly at the start and end of the school day. b) The impact on the local roads during the construction phase. The roads are narrow country roads and the EIA should include a detailed traffic impact assessment that includes impacts on local road usage at different times of the day and different days of the week. c) Any likely significant effect on the Moyasta River and any likely significant effect on drinking water supplies. This includes identification of private wells that might be impacted from the development. General Introduction The following documents should be taken into consideration when preparing the Environmental Impact Assessment Report: • Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment https://www.housing.gov.ie/sites/default/files/publications/files/guidelines_for_planning_authorities_and_an_bord_pleanála_on_carrying_out_eia_-_august_2018.pdf	<u>Public Consultation:</u> Section 1.6.1 of Chapter 1: Introduction summarises the public consultation process. Additionally, a report has been included as Appendix 1.5: Community Engagement Report detailing all public consultation for the Project. <u>Decommissioning Phase:</u> A designated decommissioning

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	EU publication: Environmental Impact Assessment of Projects Guidance on the preparation of the Environmental Impact Assessment Report, EU, 2017 http://ec.europa.eu/environment/eia/pdf/EIA_guidance_EIA_report_final.pdf Adoption of the Directive (2014/52/EU) in April 2014 initiated a review of the National Guidance for EIA and the EIAR accompanying a planning application. New guidelines can be seen at: https://www.epa.ie/publications/monitoring--assessment/assessment/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment.php The introduction of the new Guidance is supported by a Webinar produced by the EPA and can be found at: https://www.youtube.com/embed/ejKVFUztBY The applicant should also consider the findings of the High Court judgement issued in the judicial review of the Derryadd Wind Farm. (2021 IEHC 390 [20202 No. 557 JR] P. Sweetman v An Bord Pleanála) Generally, the Environmental Impact Assessment should examine all likely significant impacts and provide the following information for each: - Description of the receiving environment; - The nature and scale of the impact; - An assessment of the significance of the impact; - Proposed mitigation measures; - Residual impacts. Directive 2014/52/EU has an enhanced requirement to assess likely significant impacts on Population and Human Health. It is the experience of the National Environmental Health Service (NEHS) that impacts on human health are often inadequately assessed in EIAs in Ireland. It is recommended that the wider determinants of health and wellbeing are considered in a proportionate manner when considering the EIA. Guidance on wider determinants of health can be found at www.publichealth.ie In addition to any likely significant negative impacts from the proposed development, any positive likely significant impacts should also be assessed. The HSE will consider the final EIAR accompanying the Planning application and will make comments to the Local Planning Authority on the methodology used for assessing the likely significant impacts and the evaluation criteria used in assessing the significance of the impact. The National Environmental Health Service (EHS) recommends that the following matters are included and assessed in the EIAR • Public Consultation • Decommissioning phase of the proposed wind farm • Siting and location of turbines • Noise & Vibration • Shadow Flicker • Air Quality • Surface and Groundwater Quality • Geological Impacts • Ancillary facilities	g plan has been appended to this EIAR as Appendix 2.1: Construction Environmental Management Plan (Appendix D). Details of decommissioning works are included in this plan, including the fate of turbines and materials. <u>Siting and Location of Turbines:</u> Chapter 2: Project Description and Volume III: EIAR Figures and also in the Planning Drawings. <u>Noise and Vibration:</u>

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	• Cumulative impacts Public Consultation It is recommended that early and meaningful public consultation with the local community is undertaken to ensure all potentially significant impacts of the proposed windfarm development have been adequately addressed. All parties affected by the proposed development, including those who may benefit financially from the project, must be fully informed of what the proposal entails especially with regard to potential impacts on surrounding areas. Sensitive receptors and other stakeholders should be identified to ensure all necessary and appropriate mitigation measures are put in place to reduce the likelihood of any complaints about the proposed wind farm development in the future. The National Environmental Health Service expects that meaningful public consultation, where the local community is fully informed of the proposed development, will be undertaken. Members of the public should be given sufficient opportunity to express their views on the proposed windfarm development. The Environmental Impact Assessment Report (EIAR) should clearly demonstrate the link between public consultations and how those consultations have influenced the decision-making process in the EIA. To assist with the consultation and planning process it is recommended that the applicant develops a dedicated website for the proposed windfarm development. All correspondence, maps, project updates and documentation including the EIAR should be uploaded to the website The EIAR should state the period of planning permission sought, the length of time construction is estimated to take and if it is anticipated that the windfarm development will be decommissioned and removed or will continue to operate (following any further planning consent) at the end of this period of planning permission (should permission be granted) Decommissioning The EIAR should detail the eventual fate of the wind turbines and associated material i.e. will the material be recycled or how will it be disposed of. Information should also be provided regarding the proposed methodology to be used for the disposal of the materials forming the foundations of the wind turbines. The EIAR should indicate the proposed future use of the development site at the end of the planning permission period. Siting, Location and details of Turbines The EIAR should include a map and a description of the proposed location of each of the proposed wind turbines. The National Environmental Health Service expects that details (height and model) of the turbines to be installed will be available at the time planning permission is sought and will be included in the EIAR. Details of the foundations for the wind turbine including depth, quantity and material to be used should be included in the EIAR. Assessment of Consideration of Alternatives The EIAR should consider an assessment of alternatives. The NEHS recommends that alternative renewable energy options to on- shore wind farms should be assessed as part of the EIAR. Noise & Vibration The potential impacts for noise and vibration from the proposed development on all noise sensitive locations must be clearly identified in the EIAR. The EIAR must also consider the appropriateness and effectiveness of all proposed mitigation measures to mitigate noise and vibration.	Chapter 10: Noise and Vibration, specifically in Sections 10.10 and 10.13. <u>Shadow Flicker:</u> Chapter 13: Shadow Flicker, and specifically in Section 13.2 <u>Air Quality:</u> A designated air and climate assessment has been included as Chapter 12 of the EIAR. Dust generation has also been assessed in Appendix 2.1: Construction Environmental Management Plan (Section 3.6).

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	A baseline noise monitoring survey should be undertaken to establish the existing background noise levels. Noise from any existing turbines in the area should not be included as part of the back ground levels. In addition, an assessment of the predicted noise impacts during the construction phase and the operational phase of the proposed windfarm development must be undertaken which details the change in the noise environment resulting from the proposed development. The Draft Revised Wind Energy Development Guidelines were published in December 2019. Whilst these have yet to be adopted, any proposed wind farm development should have consideration of the draft Guidelines. https://www.housing.gov.ie/sites/default/files/public-consultation/files/draft_revised_wind_energy_development_guidelines_december_2019.pdf . Shadow Flicker It is recommended that a shadow flicker assessment is undertaken to identify any dwellings and sensitive receptors which may be impacted by shadow flicker. The assessment must include all proposed mitigation measures. Dwellings should include all occupied properties and any existing or proposed properties for which planning consent has been granted for construction or refurbishment. It is recommended that turbine selection will be based on the most advanced available technology that permits shut down during times when residents are exposed to shadow flicker. As a result no dwelling should be exposed to shadow flicker. Air Quality Due to the nature of the proposed construction works generation of airborne dust has the potential to have significant impacts on sensitive receptors. A Construction Environmental Management Plan (CEMP) should be included in the EIAR which details dust control and mitigation measures. Measures should include: • Sweeping of hard road surfaces • Provision of a water bowser on site, regular spraying of haul roads • Wheel washing facilities at site exit • Restrict speed on site • Provide covers to all delivery trucks to minimise dust generation • Inspect and clean public roads in the vicinity if necessary • Material stockpiling provided with adequate protection from the wind • Dust monitoring at the site boundary • Truck inspection and maintenance plan • Details of a road maintenance agreement between the wind farm operator and the Local Roads Authority to clarify responsibility for the upkeep and repair of access roads during the construction phase of the project Surface and Ground Water Quality The proposed development has the potential to have a significant impact on the quality of both surface and ground water. All drinking water sources, both surface and ground water, must be identified. Public and Group Water Scheme sources and supplies should be identified in addition to any private wells supplying potable water to houses in the vicinity of the proposed development. Measures to ensure that all sources and supplies are protected should be described. The National Environmental Health Service	<u>Surface and Groundwater Quality:</u> A designated assessment of water and water resources has been included in Chapter 9: Hydrology and Hydrogeology. Identification of all drinking water sources and measures to protect them has been included in Sections 9.4.10 and 9.7. <u>Geotechnical and Peat Stability Assessment:</u> Soils and Geology is fully assessed in Chapter 8: Soils and Geology. Evaluation of

Consultee Organisation	Implications for the EIA/Design	EIAR Chapter / Section where Comments have been addressed
	recommends that a walk over survey of the site is undertaken in addition to a desktop analysis of Geological Survey of Ireland data in order to identify the location of private wells used for drinking water purposes. Any potential significant impacts to drinking water sources should be assessed. Details of bedrock, overburden, vulnerability, groundwater flows, aquifers and catchment areas should be considered when assessing potential impacts and any proposed mitigation measures. Any impacts on surface water as a result of the construction of the underground cables should be identified and addressed in the EIAR. Geotechnical and Peat Stability Assessment A detailed assessment of the current ground stability of the site for the proposed windfarm development and all proposed mitigation measures should be detailed in the EIAR. The assessment should include the impact construction work may have on the future stability of ground conditions, taking into consideration extreme weather events, site drainage and the potential for soil erosion. Information should be provided on the make and model of the turbines and on construction details for the turbine foundations, including the depth and volume of concrete required. An accurate assessment of the potential impacts of the foundations on water quality and peat stability cannot be undertaken without this information. Reference is made to a peat slide which occurred near Ballybofey in Co. Donegal on 13th November 2020 which may have been linked to construction activity at Meenbog Wind Farm. Potential impacts on water supply associated with contamination following a peat slide include sedimentation and alteration of pH levels. The National Environmental Health Service recommends that a detailed Peat Stability/Geotechnical Assessment should be undertaken to assess the suitability of the soil for the proposed development. The EIAR should include provision for a peat stability monitoring programme to identify early signs of potential bog slides ('pre-failure indicators' see the Scottish Government's 'Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Developments 2017') https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2017/04/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/documents/00517176-pdf/00517176-pdf/govscot%3Adocument/00517176.pdf Ancillary Facilities The EIAR should include details of the location of all site office, construction compound, fuel storage depot, sanitary accommodation and canteen, First Aid facilities, disposal of wastewater and the provision of a potable water supply to the site canteen. Cumulative Impacts All existing or proposed wind farm developments in the vicinity should be clearly identified in the EIAR. The impact on sensitive receptors of the proposed development combined with any other wind farm/renewable energy developments in the vicinity should be considered. The EIAR should include a detailed assessment of any likely significant cumulative impacts of the proposed windfarm development.	ground stability and potential impacts of construction on water quality and peat stability, including monitoring programs are included in Sections 8.3.8 and 8.5. <u>Ancillary Facilities:</u> Chapter 2: Project Description Section 2.5.8. <u>Cumulative Impacts:</u> Cumulative effects are assessed in all assessment chapters of this EIAR.
Other		

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Department of Defence	Response received on the 08/08/2024 states: I refer to your letter, dated 6th August 2024, in relation to a request for Scoping Opinion on information to be included in the preparation of an Environmental Impact Assessment (EIA) for Moanmore Lower Wind Farm, Moanmore Lower, Co. Clare. I wish to advise at the outset that any determination in relation to a planning consent is solely a matter for the planning authorities and/or ABP, as appropriate. Therefore, the following observation is made on a non-prejudicial basis, and is not intended to be used to rely on for a prospective planning application, nor is this observation to be relied on in the event of any commercial transaction pertaining to such lands and it is not to be relied on in the event of any contract exchange pertaining to same. As a matter of practice, the Department of Defence does not provide observations or advice in the scoping process, except where the relevant parties have been directed by a planning authority to seek the Department's views. Based on the information supplied and following consultations with the subject matter in the Irish Air Corps, the Department of Defence wishes to make the following observations: All turbines should be illuminated by Type C, Medium intensity, Fixed Red. obstacle lighting with a minimum output of 2,000 candela to be visible in all directions of azimuth and to be operational H24/7 days a week. Obstacle lighting should be incandescent or, if LED or other types are used, of a type visible to Night Vision equipment. Obstacle lighting used must emit light at the near Infra- Red (IR) range of the electromagnetic spectrum, specifically at or near 852 nanometres (nm) of wavelength. Light intensity to be of similar value to that emitted in the visible spectrum of light. Any Irish Air Corps (IAC) requirements for are separate to Irish Aviation Authority (IAA) require We would appreciate if you could keep us informed on any progress relating to this proposed development. Nothing in the above observation shall be taken as a binding response by the Minister for Defence in the event that a planning application is made. The Minister reserves the right to comment on an actual planning application as and when it is submitted in accordance with the provisions of the planning regulatory code.	Chapter: 15, Section 15.7.5
Department of Transport	Response received on the 15/08/2024 states: The Department of Transport makes the following comments on consultation request relating to the Scoping Report for the proposed Moanmore Wind Farm in County Clare. It should be noted that the Department considers the construction involved in providing this development and especially, the connection cables to the national grid may have effects on both the environment and the Regional and Local Road network. Where the developer proposes the placement of any cables (or additional cables) in one or more trenches within the extents of the (regional and local) public road network, it is necessary to consider the following: • Their presence within the public road will likely significantly restrict the Road Authority in carrying out its function to construct and maintain the public road and will likely add to the costs of those works post construction. • Their installation within the lands associated with the public road may affect the stability of the road. In particular where the road is a "legacy road" (where there is no designed road structure and the subgrade may be poor or poorly drained) the design needs to take account of all the variable ground conditions and not be based on a sample of the general soil conditions. • The possible effect on the remaining available road space (noting that there may be need to accommodate other utilities within the road cross-section in the future). • The necessity to have the power in the cables switched off where the Road Authority considers this necessary in order to carry out its function to construct and maintain the public road. The Department consider it important that the examination of the proposal should include consideration of the following:	Chapter: 16, Table 16.1

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	• Examination of all available technologies and route options other than the routing of cables along the public road, • Examination of options for connection to the national grid network at a point closer to the wind farm in order to reduce the adverse impact on public roads, • Details of where within the road cross section cables are to be placed so as to minimise the effect on the Roads Authority in its role of construction and maintenance, • Examination of details of any chambers proposed within the public road cross section so as to minimise the effect on the Roads Authority in its role of construction and maintenance, • Elimination of permanent jointing bays from beneath the road pavement to protect the integrity of the road structure for the safety of those driving on the public road by eliminating hard spots and also preserve the road width for other utilities, • Prevention of the attachment of cables to all bridge structures and culverts by diverting them beneath or away from these structures and, • Rationalisation of the number of cables involved (including existing electric or possible future cables) and their diversion into one trench, in order to minimise the impacts on the road network and the environment along the road boundary (hedgerows). The Department considers the following should be considered when applying conditions to any approval: 1. A condition requiring the specific approval of the local authority to the detail of the final route of cables through the public road space. If during construction there is a need to deviate from the detailed design then the approval of the local authority would again be sought. This would assist in minimising the impact on the public road. 2. A condition requiring the developer to comply with all appropriate standards and, inter alia the Guidelines for Managing Openings in Public Roads, 2017 in order to ensure orderly development. 3. A condition requiring that the location of the cables would be recorded as exactly as possible (maybe using BIM type technology) so as to facilitate the further use of road space for utilities and the maintenance/construction of the public road by the Roads authority. This record should include as constructed surveys of all infrastructure altered, added, removed, or relocated and exact detail of the road construction including any drains or other features encountered. The record should be lodged with the local authority and with the ESB Networks for retention on their records. 4. A condition to require the elimination of permanent jointing bays from under the road pavement to protect the integrity of the road structure, thereby improving safety for those driving on the public road by eliminating hard spots and preserving the road width for other utilities. 5. A condition requiring the developer to route cables away from bridge structures and specifically preventing the developer from attaching cables to road bridges. This would allow for the future maintenance of bridges without interruption of the electricity supply along the cables. 6. A condition requiring the replacement of culverts that have been excavated during the cable duct placement operation. The replacement culverts should be designed appropriately and include an allowance for the effects of climate change. 7. A condition requiring the developer to notify the Roads Authority of the owner of the cables (Owner) and the controller (Power Controller) of the power transmitted along the cables. In addition, the condition should require Owner and Power Controller to notify the Roads Authority of any change in ownership of the cables or change of Power Controller transmitting power along the cables. In all instances the Owner and Power Controller should be required to maintain an agreed contacts list with the Roads Authority.	

1.10 AVAILABILITY OF INFORMATION

The planning application may be inspected or purchased at a fee not exceeding the reasonable cost of making a copy, at the offices of the planning authority during its public opening hours at the following address.

The Offices of Clare County Council, Áras an Chontae an Chláir, New Road, Ennis, County Clare V95 DXP2.

1.11 GLOSSARY OF COMMON ACRONYMS

The common acronyms used throughout this EIAR are contained in **Volume IV: Appendix 1.4.**