

## 5. POPULATION AND HUMAN HEALTH

### 5.1 Introduction

This chapter of the Remedial Environmental Impact Assessment Report (rEIAR) identifies, describes and assesses the potential significant effects of the Existing Development on population and human health and has been completed in accordance with the Environmental Impact Assessment (EIA) guidance and legislation set out in Chapter 1: Introduction. A detailed description of the Existing Development is provided in Chapter 4: Description of this rEIAR.

As detailed in Section 1.1.1 in Chapter 1 of this rEIAR, the various development components are described and assessed using the following references: 'Subject Development', 'Existing Development', 'Prospective Development', 'Permitted Development', 'Site', 'Wind Farm Site', 'Grid Connection Site', 'BMEP Site', 'Grid Connection', 'November 2020 Peat Slide', '2017 EIAR' and 'proposed turbines' or 'proposed turbine locations'.

One of the principal concerns in the development process is that human beings, as individuals or communities, should experience no significant diminution in their quality of life from the direct, indirect, or cumulative effects arising from the construction, operation and decommissioning of a development. For the purposes of this assessment, only the construction phase is considered.

Impacts of a development that may impinge on human health, directly and indirectly, positively and negatively have been considered. The key issues examined in this chapter of the rEIAR include employment and investment, land use patterns and activities, tourism, property values, health, and health and safety in relation to the construction phase of the Existing Development. Vulnerability of the Existing Development to risk of major accidents and/or disasters is dealt with separately; please see Chapter 16: Vulnerability to Natural Disasters, for further details.

#### 5.1.1 Statement of Authority

This chapter of the rEIAR has been prepared by Thomas Blackwell and Emma Prior and reviewed by Sean Creedon, all of MKO.

Thomas is a Senior Environmental Consultant with over 20 years of progressive experience in environmental consulting. Thomas' professional experience includes managing Environmental Impact Assessments, environmental permitting, environmental due diligence and compliance, and general environmental assessment on behalf of clients in the renewable energy, mining, solid waste management, residential and commercial development, and public sectors. Thomas also has extensive experience in environmental and ecosystem restoration design, project management, and construction oversight. Thomas' multi-sector experience working on projects in multiple jurisdictions has allowed him to develop a wealth of knowledge and understanding of the challenges involved in guiding complex project through the regulatory and planning process.

Emma Prior is an Environmental Scientist with MKO, with over a year's experience in private consultancy, having joined the company in September 2024. Emma holds a first-class Honours BA (Hons) in Geography & Human Development from Dublin City University and a Master of Science Degree in Environmental Resource Management from University College Dublin achieving a first-class honours Thesis. Emma's key strengths and areas of expertise are in environmental geography, field research, communication, and teamwork. Emma is skilled in report writing and QGIS mapping, with experience across a diverse range of projects including wind farms, wastewater treatment plants, quarries, and residential developments. Since joining MKO, Emma has experience in the preparation of EIA Scoping Reports, Construction Environmental Management Plans, EIA Screening Determinations, EIA Report Chapters including assessments, and Environmental fieldwork including surface and groundwater monitoring.

Sean Creedon is an Associate Director in the Environment Team at MKO. He is a member of the MKO senior management team and leads a team of highly skilled environmental professionals working on EIAR for large and medium scale Renewable Energy infrastructure. Over a 24-year period, Sean has overseen and directed the submission of range of large and medium scale renewable energy planning applications for wind (offshore and onshore), solar, battery, biogas and hydrogen developments, as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. Sean's professional experience includes the development and management of a portfolio of wind farm developments to the consenting decision. Sean holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

## 5.1.2 Relevant Guidelines and Data Sources

In addition to the guidelines referred to in Section 1.2.1 and Section 1.2.2 of Chapter 1 of this rEIAR, and Directive 2011/92/EU as amended by Directive 2014/52/EU, the following guidelines, plans and reports have also influenced the preparation of this chapter:

- › Central Statistics Office (CSO) (2016, 2020, 2022) *Census of Ireland 2016; Census of Agriculture 2020; Census of Ireland 2022*.
- › Department of Health (2025) *Health in Ireland: Key Trends*.
- › Department of Housing, Planning and Local Government (DoHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- › Department of the Environment, Heritage and Local Government (DoEHLG) (2006) Wind Energy Development Guidelines.
- › Department of the Environment, Heritage and Local Government (DoEHLG) (2019) Draft Wind Energy Development Guidelines.
- › Environmental Protection Agency (EPA) (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.
- › Donegal County Council (2024) *Donegal County Development Plan 2024–2030*
- › Environmental Protection Agency (US EPA) (2014) *Framework for Human Health Risk Assessment to Inform Decision Making*.
- › Fáilte Ireland (2023) *EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects*.
- › Institute for Environmental Management and Assessment (IEMA) (2022a) *Health in Environmental Impact Assessment: A Primer for a Proportionate Assessment*.
- › Institute for Environmental Management and Assessment (IEMA) (2022b) *Determining Significance for Human Health in Environmental Impact Assessment*.
- › Institute of Public Health Ireland (2021) *Health Impact Assessment Guidance*.
- › Irish Wind Energy Association (IWEA) (2012) *Best Practice Guidelines for the Irish Wind Energy Industry*.
- › IWEA (2012). *Best Practice Guidelines for the Irish Wind Energy Industry*.
- › National Roads Authority / Transport Infrastructure Ireland (2008) *Environmental Impact Assessment of National Road Schemes: A Practical Guide (Revision 1)*.
- › United States Environmental Protection Agency (US EPA) (2016) *Health Impact Assessment Resource and Tool Compilation*.
- › World Health Organization (WHO) (2022) *Environmental Noise Guidelines for the European Region*. Available at: <https://www.who.int/>

## 5.1.3 Scoping and Consultation

Chapter 2 of this rEIAR describes the scoping and consultation exercise undertaken for the Subject Development. Scoping was originally conducted for the Subject Development in September 2025, due to the time that had passed and updates which were made as the design progressed, a further follow up round of Scoping occurred in March 2026 to all consultees which were originally contacted. Relevant to

this chapter, responses were received from the Health Service Executive (HSE), Uisce Éireann & Fáilte Ireland.

### Health Services Executive (HSE)

A scoping response was received from the Health Service Executive (HSE) on the 3<sup>rd</sup> October 2025. The HSE responded to the follow up round of scoping in March 2026 to state that they had no further comments. The HSE requested a shadow flicker assessment is undertaken to identify any sensitive receptors which may be impacted by shadow flicker (addressed in Chapter 5 Population and Human Health of the EIAR), that potential impacts for noise and vibration from the proposed development on all noise sensitive locations must be clearly identified, a detailed assessment of the current ground stability of the site for the proposed windfarm development, potential impacts on surface and groundwater quality including drinking water sources, and noted that the EIAR must include all proposed mitigation measures. The HSE also noted that 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 (addressed in Chapter 5 Population and Human Health of the EIAR). The HSE stated that a Construction Environmental Management Plan (CEMP) should be included in the rEIAR/EIAR which details dust control and mitigation measures. The HSE further stated that the rEIAR 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 Environmental Health Service (EHS) 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](http://www.publichealth.ie).

The HSE advised that in addition to any likely significant negative impacts from the Subject Development, any positive likely significant impacts should also be assessed.

The below table lists the topics which the Environmental Health Service (EHS) recommends are included and assessed in this rEIAR and EIAR, and the location in the rEIAR and EIAR in which they are assessed in detail:

Table 5-1 Topics to be addressed as per HSE Scoping Response

| Topic                                           | Location of rEIAR/EIAR                                                                                                                                                                                                                                |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Public Consultation                             | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 4 Description of the Existing Development, Chapter 4 of the EIAR Description of the Prospective Development, Appendix 2-1 Community Engagement Report |
| Decommissioning phase of the Proposed Wind Farm | Relevant Section of each EIAR Chapters 4-18, Appendix 4-6 Decommissioning Plan                                                                                                                                                                        |
| Siting and location of turbines                 | Chapter 4 of the rEIAR Description of the Existing Development,                                                                                                                                                                                       |

|                                 |                                                                                                                                                                                                                               |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | Chapter 4 of the EIAR Description of the Prospective Development,                                                                                                                                                             |
| Noise & Vibration               | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections); Chapter 12 of this rEIAR.                                                                                                             |
| Shadow Flicker                  | Chapter 5 of the EIAR (multiple Sections)                                                                                                                                                                                     |
| Air Quality                     | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 10 Air Quality, Chapter 10 of the EIAR Air Quality                                                                            |
| Surface and Groundwater Quality | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology                                                |
| Geological Impacts              | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 8 Land, Soils and Geology, Chapter 8 of the EIAR Land, Soils and Geology, Appendix 8-1 of the rEIAR, Appendix 8-1 of the EIAR |
| Ancillary facilities            | Chapter 4 of this rEIAR Description of the Existing Development<br>Chapter 4 of the EIAR Description of the Prospective Development,                                                                                          |
| Cumulative impacts              | Relevant Section of each rEIAR Chapters 2-18,<br>Relevant Section of each EIAR Chapters 2-18                                                                                                                                  |

## Uisce Éireann

A scoping request was issued to Uisce Éireann on the 5<sup>th</sup> September 2025 and a response was received on the 6<sup>th</sup> October 2025 (dated 3<sup>rd</sup> October 2025), outlining that there were no water mains, sewage links or waste water network within the Wind Farm Site. A data request was sent to Uisce Éireann in April 2026. The data provided included the water distribution network and sewerage network in the vicinity of the Wind Farm Site and Grid Connection Site. Uisce Éireann also outlined that the following items should be considered in the rEIAR and EIAR.

Table 5-2: Topics to be addressed as per Uisce Éireann Scoping Response

| Topic                                                                                                                                                                                                                                                                                                                                   | Location of rEIAR/EIAR                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Where the development proposal has the potential to impact an Uisce Éireann Drinking Water Source(s), the applicant shall provide details of measures to be taken to ensure that there will be no negative impact to Uisce Éireann's Drinking Water Source(s) during the construction and operational phases of the development.</i> | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology, and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets |



| Topic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Location of rEIAR/EIAR                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Where the development proposes the backfilling of materials, the applicant is required to include a waste sampling strategy to ensure the material is inert</i>                                                                                                                                                                                                                                                                                                                                                       | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets |
| <i>Mitigations should be proposed for any potential negative impacts on any water source(s) which may be in proximity and included in the environmental management plan and incident response.</i>                                                                                                                                                                                                                                                                                                                       | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets |
| <i>Any and all potential impacts on the nearby reservoir as public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/surface water interactions.</i>                                                                                                                                                                                                                                                                                                                   | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets |
| <i>Impacts of the development on the capacity of water services (i.e. do existing water services have the capacity to cater for the new development). This is confirmed by Uisce Éireann in the form of a Confirmation of Feasibility (COF). If a development requires a connection to either a public water supply or sewage collection system, the developer is advised to submit a Pre-Connection Enquiry (PCE) enquiry to Uisce Éireann to determine the feasibility of connection to the Uisce Éireann network.</i> | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, Chapter 9 of the EIAR Hydrology and Hydrogeology and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets |
| <i>The applicant shall identify any upgrading of water services infrastructure that would be required to accommodate the proposed development.</i>                                                                                                                                                                                                                                                                                                                                                                       | Chapter 5 (this Chapter, multiple Sections), Chapter 5 of the EIAR (multiple Sections), Chapter 9 Hydrology and Hydrogeology, and Chapter 15 Material Assets, Chapter 15 of the EIAR Material Assets                                                  |

## Fáilte Ireland

A scoping response was received from Fáilte Ireland on the 21<sup>st</sup> October 2025 and provided 'Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA 2023', to inform the preparation of the rEIAR/EIAR for Subject Development. The report provides guidance for those conducting EIA and compiling an EIAR, or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. The preparation of this chapter has been informed by this guidance document. Tourism and Amenity are also addressed in Section 5.3.2, and Section 5.4.2.1.4 of this rEIAR and Section 5.3.2, Section 5.4.2.1.5, and Section 5.4.3.1.5 of the EIAR.

## 5.2 Assessment Methodology

### 5.2.1 Population

A desk-based assessment using sources and guidelines referenced in Section 5.1.2 above was undertaken to examine relevant information pertaining to the population impact assessment. Information on population statistics, employment and social data for the relevant Electoral Divisions (EDs) were obtained from the Central Statistics Office (CSO) for census years 2016 and 2022. Fáilte Ireland's EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects, the Donegal County Development Plan 2018–2024, Donegal County Development Plan 2024 – 2030, and any other literature pertinent to the area was also considered in this assessment. See Section 5.3.2 below.

In order to assess the population in the vicinity of the Existing Development, the Population Study Area for this assessment mainly focuses on the EDs within which the Existing Development lies, but it also refers to county and national statistics. Super Output Areas within Northern Ireland have not been included in the Population Study Area, however transboundary effects of the Subject Development are assessed in Section 5.8 below.

### 5.2.2 Human Health

This human health analysis section was assessed using guidelines set out in Section 5.1.2 above.

The World Health Organisation (WHO) defines health as:

*“A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.<sup>4</sup>*

#### 5.2.2.1 National Guidance

The Environmental Protection Agency (EPA) ‘*Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*’ (hereafter referred to as ‘EPA, 2022’) advise that “*in an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g., under the environmental factors of air, water, soil etc.*”. Environmental effects from the Existing Development which may also have an impact on population and human health are discussed in this chapter but addressed in more detail in the following chapters: Chapter 8: Land, Soils and Geology, Chapter 9: Hydrology and Hydrogeology, Chapter 10: Air, Chapter 11: Climate, Chapter 12: Noise, Chapter 13: Cultural Heritage, Chapter 14: Landscape and Visual, Chapter 15: Material Assets (including Traffic and Transport).

As referenced in the Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála*, (taken from the European Commission’s Environmental Impact Assessment of Projects: Guidance on the Preparation of the Environmental Impact Assessment Report (2017)), human health is, “*a very broad factor that would be highly project dependent.*” The report continues:

*“\*The notion of human health should be considered in the context of the other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from*

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<sup>4</sup> EPA (2022) *Guidelines on the information to be contained in Environmental Impact Assessment Reports*  
<<https://www.epa.ie/publications/monitoring-assessment/assessment/guidelines-on-the-information-to-be-contained-in-environmental-impact-assessment.php>>

*major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study. In addition, these would concern the commissioning, operation, and decommissioning of a Project in relation to workers on the Project and surrounding population.'*

EPA, 2022 also states that “while no specific guidance on the meaning of the term Human Health has been issued in the context of Directive 2014/52/EU, the same term was used in 3.3.6 the SEA Directive (2001/42/EC). The Commission’s SEA Implementation Guidance states ‘The notion of human health should be considered in the context of the other issues mentioned in paragraph (f)’” of the Directive, where paragraph f lists environmental factors such as soils, water, landscape, air etc. EPA, 2022 further states that this approach is ‘consistent with the approach set out in the 2002 EPA Guidelines where health was considered through assessment of the environmental pathways through which it could be affected’. EPA, 2022 notes that the above approach follows the 2002 EPA guidelines already in place which details the following:

*‘The evaluation of effects on these pathways is carried out by reference to accepted standards (usually international) of safety in dose, exposure or risk. These standards are in turn based upon medical and scientific investigation of the direct effects on health of the individual substance, effect or risk. This practice of reliance upon limits, doses and thresholds for environmental pathways, such as air, water or soil, provides robust and reliable health protectors [protection criteria] for analysis relating to the environment’.*

### 5.2.2.2 IEMA Guidance 2017

The Institute of Sustainability and Environmental Professionals (ISEP) formally known as the Institute for Environmental Management and Assessment (IEMA) published ‘*Health In Environmental Impact Assessment: A Primer for a Proportionate Assessment*’ in 2017 (hereafter referred to as the Primer Assessment Report) examining what a proportionate assessment of the impacts on health should be in Environmental Impact Assessments. The document states that Health Impact Assessment (HIA) and EIA are separate processes.

*‘HIA is defined as a combination of procedures, methods and tools that systematically judges the potential, and sometimes unintended, effects of a policy, plan, programme or project on both the health of a population and the distribution of those effects within the population. HIA identifies appropriate actions to manage those effects... [...] ... HIA can inform EIA practice in relation to population and human health but conducting a HIA will not necessarily meet the EIA population and human health requirement. By the same token, conducting an EIA will not automatically meet the requirements of a HIA.’*

The Primer Assessment Report acknowledges that ‘*disproportionate burdens may be placed on developers if HIA is applied as a proxy for the consideration of population and human health in every future UK EIA*’. The focus of EIA should be on predicting health and wellbeing outcomes, rather than focusing on changes in determinants of health e.g., expected changes in noise levels. Determining the significance of impacts on population and human health should include a professional judgement, scientific literature; consultation responses; comparison with baseline conditions; local health priorities; and national/international regulatory standards and guidelines. The Primer Assessment Report refers to the WHO 2014 which provides an overview of health in different types of assessment:

*“The health sector, by crafting and promoting HIA, can be regarded as contributing to fragmentation among impact assessments. Health issues can, and need to, be included [in impact assessment] irrespective of levels of integration. At the same time, from a civic society perspective, it would be unacceptable for HIA to weaken other impact assessments. A prudent attitude suggests optimizing the coverage of health along all three avenues:*

- *better consideration of health in existing impact assessments other than HIA;*

› dedicated HIA;  
› and integrated forms of impact assessment.”

As such, the WHO does not support a stand-alone HIA unless it could be demonstrated to be of advantage over an EIAR. Therefore, given that this human health assessment is part of this rEIAR; there is no stand-alone HIA.

### 5.2.2.3 EIA Significance Matrix for Human Health, IEMA Guidance 2022

The IEMA Working Group 2022 published *Determining Significance for Human Health in Environmental Impact Assessment* in response to gaps and inconsistencies across existing guidance documents as to how health is assessed in EIA, particularly with regard to significance. The aim of this report is to assist and streamline discussions for consultants producing the assessments and for the decision makers who are reviewing the assessments. The report states that an EIA must identify, describe and assess the direct and indirect significant effects in an appropriate manner of a proposed development on human health. It must include the information that may reasonably be required for reaching a reasoned conclusion on the significant effects, taking into account current knowledge and methods of assessment. This human health analysis section was assessed using guidelines set out in Section 5.1.3 above.

A wind farm is not a recognised source of pollution. It is not an activity which requires EPA licensing under the Environmental Protection Agency Act 1992, as amended. As such, a wind farm is not considered to have ongoing significant emissions to environmental media and the subsequent potential for human health effects. In this context, and aligned with the above noted ISEP Guidance, this EIAR provides sufficient information that may reasonably be required for reaching a reasoned conclusion on the significance of effects, without providing the level of detail, for example through the use of the significance matrix set out in the ISEP Guidance, which might be required for an assessment of effects on human health arising from a type of development with a potential for emissions-related human health effects.

## 5.2.3 Assumptions and Limitations

### 5.2.3.1 Population

Population has been assessed in this rEIAR using the most recent data available, guidance and best practice referenced above. No assumption or limitations were encountered during the preparation of the Section of the rEIAR.

### 5.2.3.2 Human Health

Human Health has been assessed in this rEIAR using the guidance and best practice referenced above. No assumption or limitations were encountered during the preparation of the Section of the rEIAR.

## 5.3 Receiving Environment

### 5.3.1 Population

The socio-economic study of the receiving environment included an examination of the population and employment characteristics of the area. The relevant methodology pertaining to the population and human health assessment relates to the assessment of desk-based data sourced from the following locations. Information regarding population and general socio-economic data were sourced from the Central Statistics Office (CSO), the Donegal County Development Plan 2018–2024, the Donegal

County Development Plan 2024-2030, Fáilte Ireland and any other literature pertinent to the area. The study included an examination of the population and employment characteristics of the area. This information was sourced from the Census of Ireland 2022, which is the most recent census for which a complete dataset is available, also the Census of Ireland 2016, which was used to provide a comparative baseline, the Census of Agriculture 2020 and from the CSO website ([www.cso.ie](http://www.cso.ie)). Census information is divided into State, Provincial, County, Major Town, Electoral Division (ED) and small areas level. For the purpose of this study, only state, county and ED will be assessed.

The Existing Development comprises of two distinct elements, the Wind Farm Site and the Grid Connection Site. It should be noted that the EIAR considers the Site which comprises three distinct elements, the Wind Farm Site, the Grid Connection Site and the BMEP Site. Unless otherwise specified, distances are measured from the closet point of either the Wind Farm Site or the Grid Connection Site throughout this Chapter.

The Wind Farm Site is located in County Donegal approximately 8km southwest of the twin towns of Ballybofey and Stranorlar and approximately 12km northeast of Donegal Town in the townlands of Meenbog and Croaghonagh. It adjoins County Tyrone, specifically the administrative division of Omagh West, Barony of Termonamongan and the townlands of Slievadoo, Meenakeeran, and Sixth Corgary or Second Croagh along the southeast of the Wind Farm Site boundary and is located approximately 19km west of Castlederg. Please refer to Figure 1-1 of Chapter 1 for the Site Location Context. The Wind Farm Site measures approximately 892 hectares. The N15 National Road runs in a south-west to north-east direction, to the northwest of the Wind Farm Site, with the proposed turbines lying about 2km east of the N15 National Road. The Wind Farm Site access is via an existing access from the N15 National Road in the northwest of the Wind Farm Site and the local road north of the Wind Farm Site. The Wind Farm Site is also served by a number of existing roads and tracks.

The Grid Connection Site extends from the Wind Farm Site entrance along the N15 National Road to the L-2595 Local Road, then proceeds to the L-1985 Local Road where it travels east along the road and through agricultural lands parallel to the Local Road before continuing along the L-19852 Local Road and finally following a private road to reach the Clogher 110kV substation. The Clogher substation is situated approximately 6.5km to the southwest of the on-site 110kV substation. The Clogher substation is situated approximately 6.5 km to the southwest of the on-site 110kV substation.

The Wind Farm Site and Grid Connection Site falls within the townlands listed in Table 1-1 of Chapter 1. All townlands are located in Co. Donegal.

In order to assess the population in the vicinity of the Wind Farm Site and Grid Connection Site, the 'Population Study Area' for the population section of this rEIAR was defined in terms of EDs. The Wind Farm Site and Grid Connection Site lies within 4 no. EDs: Goland, Clogher, Tawnawully and Dooish, as shown in Figure 5-1.

These EDs will collectively be referred to hereafter as the Population Study Area for this chapter. The Population Study Area has a population of 2,807 persons as of 2022, with the populations of each electoral division as follows:

- 》 Goland (359 persons)
- 》 Clogher (928 persons)
- 》 Tawnawully (350 persons)
- 》 Dooish (1,170 persons)

The Population Study Area has increased from a population of 2,614 in 2016 (CSO, 2016) to a population of 2,807 as of 2022 (CSO, 2022). The land area of the Population Study Area totals 13,303.44 ha or 133.04 km<sup>2</sup> and comprises Goland 42.32 km<sup>2</sup>, Clogher 35.42 km<sup>2</sup>, Tawnawully 34.13 km<sup>2</sup>, and Dooish 21.17 km<sup>2</sup>.

The Institute of Air Quality Management ‘*Guidance on the assessment of dust from demolition and construction*<sup>2</sup>’ identifies that dust emissions may be deposited up to 250m, in order to assess the population in the vicinity of the Wind Farm Site and the Grid Connection Site, a review of properties and planning applications within 250m of the Wind Farm Site infrastructure and the Grid Connection route was carried out.

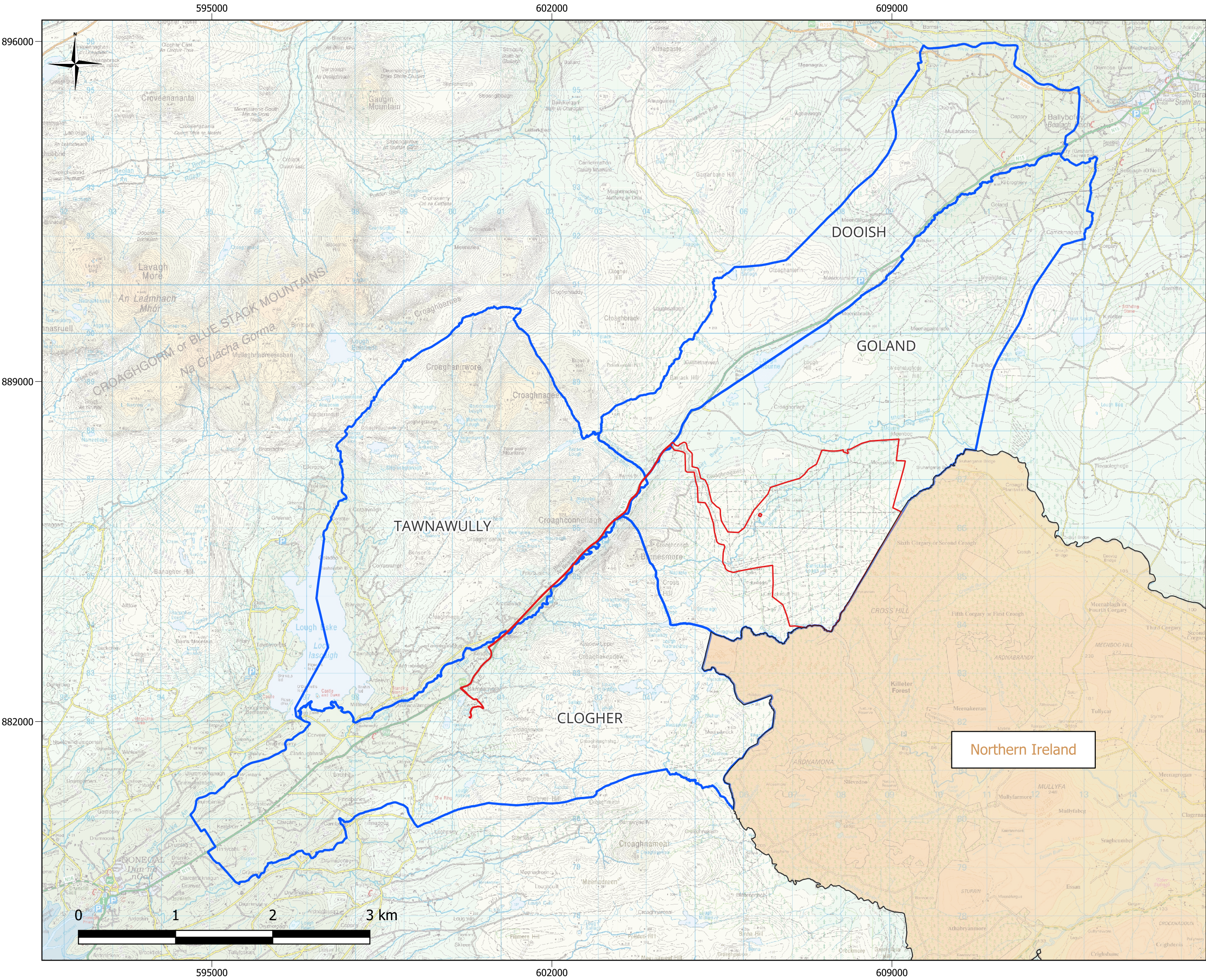
There is 1 no. property located within 250m of the Wind Farm Site infrastructure, this dwelling is currently unoccupied and remained unoccupied throughout the construction of the Existing Development. The closest inhabitable property, belonging to an involved landowner, is located over 750m from the nearest proposed turbine (T17) (this turbine is partially complete as part of the Existing Development works), i.e. over the minimum recommended setback (500m), in accordance with the Guidelines (DoEHLG, 2006). There are 42 no. receptors identified within a 250m buffer of the Grid Connection Site, with the closest receptor being 7 m from the Grid Connection route. Figure 5-2 below shows the Existing Development in context with the receptor locations.

For the purposes of the population baseline assessment, the Existing Development will be examined primarily from a population perspective due to the reasons outlined above. Where the Wind Farm Site and the Grid Connection Site are required to be considered separately, this is identified within the baseline assessment.

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<sup>2</sup> <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>





Map Legend

- Wind Farm Site and Grid Connection Site Boundary
- Population Study Area Electoral Divisions

Spatial Reference  
Name: IREN95 Irish Transverse Mercator  
Datum: IREN95  
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Population Study Area

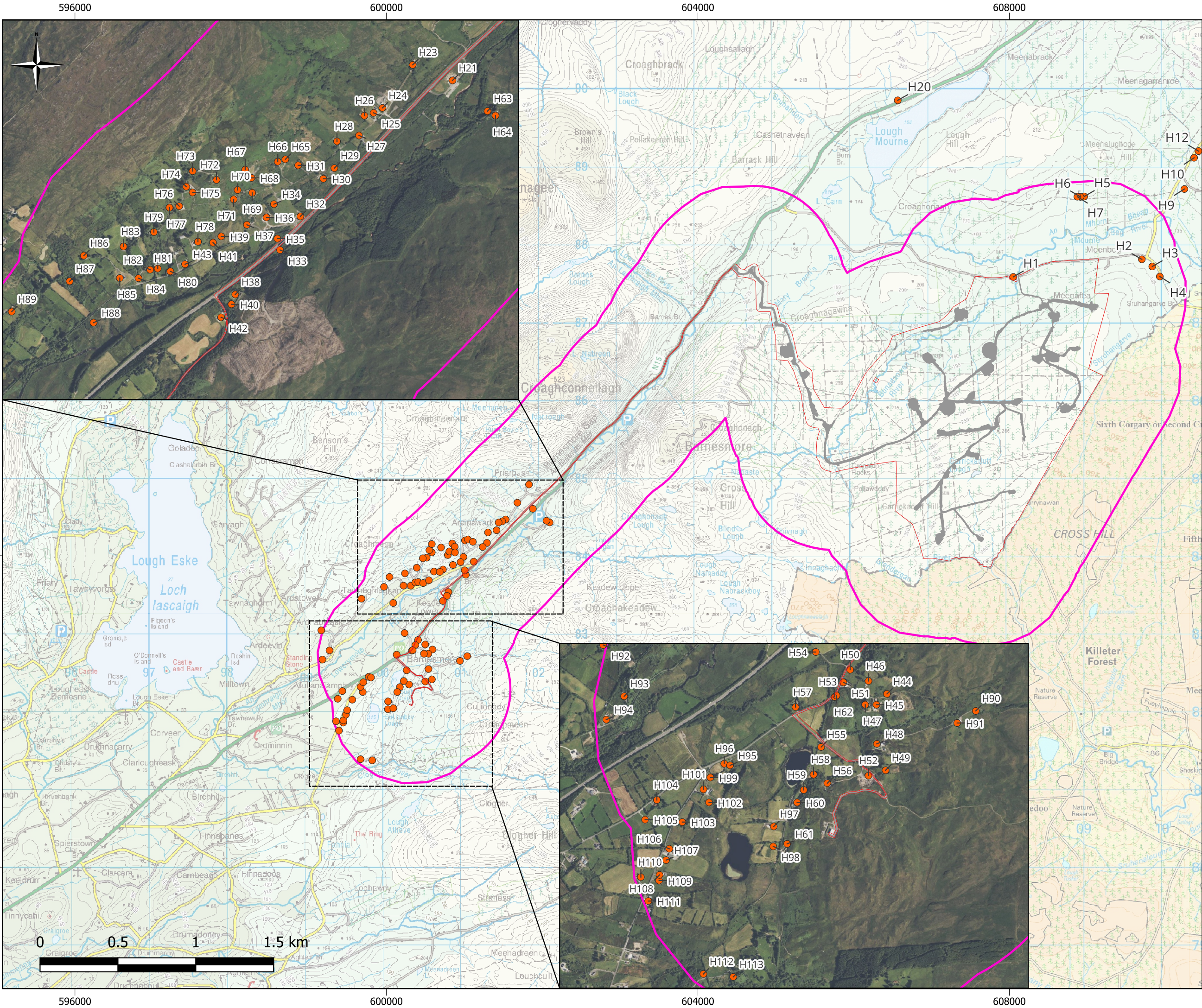
Meenbog Wind Farm, Co. Donegal

|             |             |            |
|-------------|-------------|------------|
| Project No. | Drawing No. | Scale      |
| 240505      | Figure 5-1  | 1:70,000   |
| Drawn by    | Checked by  | Date       |
| EON         | TB          | 30/06/2026 |

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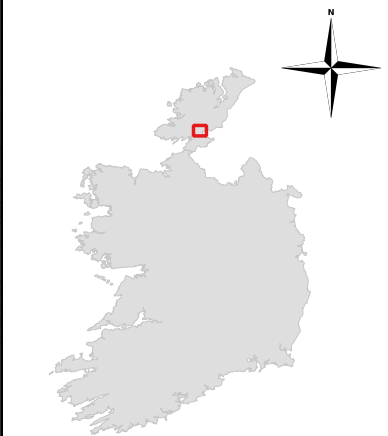


Map Legend

Population and Human Health

- Wind Farm Site and Grid Connection Site Boundary
- Existing Development Footprint
- 1km Buffer
- Receptor Locations

Spatial Reference  
Name: IREN95 Irish Transverse Mercator  
Datum: IREN95  
Projection: Transverse Mercator



SITE LOCATION - NOT TO SCALE

Receptor Locations

Project Title  
**Meenbog Wind Farm, Co. Donegal**

| Project No. | Drawing No. | Scale      |
|-------------|-------------|------------|
| 240505      | Figure 5-2  | 1:45,000   |
| Drawn by    | Checked by  | Date       |
| EON         | TB          | 30/06/2026 |



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### 5.3.1.1 Population Trends

The recently published Census of 2022 shows that the population of Donegal grew by 5% to 167,084 since the 2016 Census. Over the same period, Ireland's population grew by 8.1% from 4,761,865 to 5,149,139. Population statistics for the State, County Donegal and the Population Study Area have been obtained from the CSO and are presented in Table 5-3 below.

Table 5-3 Population 2016 – 2022 (Source: CSO)

| Area                  | Population Change |           | Percentage Population Change |
|-----------------------|-------------------|-----------|------------------------------|
|                       | 2016              | 2022      | 2016– 2022                   |
| State                 | 4,761,865         | 5,149,139 | +8.1%                        |
| County Donegal        | 159,192           | 167,084   | +5.0%                        |
| Population Study Area | 2,614             | 2,807     | +7.4%                        |

The data presented in Table 5-3 shows that the population of the Population Study Area increased by 7.4% between 2016 and 2022. This rate of population increase is closely related to the percentage population change of the State level (8.1%). The rate of population increase in Donegal is lower than that of State level and in the Population Study Area. When the population data is examined in closer detail, it shows that the rate of population increase within the Population Study Area has been unevenly spread through the EDs. The highest increase in the population between 2016 and 2022 occurred within the Dooish and Clogher EDs, which experienced, population increases of 9.2% and 9.4%, respectively. In Comparison, only Goland ED experienced a decrease in population, decreasing by - 3.5%. Of the EDs that make up the Population Study Area for this assessment, during the 2022 Census, the highest population was recorded in Dooish ED, with 1170 persons and the lowest population was recorded in Tawnawully ED, with 350 persons. Similarly, in 2016, the highest population was recorded in Dooish ED, with 1071 persons recorded and the lowest population was recorded in Tawnawully ED, with 323 persons recorded.

### 5.3.1.2 Population Density

The population densities recorded within the State, County Donegal and the Population Study Area during the 2016 and 2022 Census are shown in Table 5-4.

Table 5-4 Population Density in 2016-2022 (Source: CSO)

| Area                  | Population Density (Persons per square kilometre) |      |
|-----------------------|---------------------------------------------------|------|
|                       | 2016                                              | 2022 |
| State                 | 67.8                                              | 73.3 |
| County Donegal        | 33.4                                              | 35.1 |
| Population Study Area | 20.3                                              | 21.1 |

The population density of the Population Study Area recorded during the 2022 Census is 21.1 persons per km<sup>2</sup> which is considerably lower than the national population densities of 73.3 persons per km<sup>2</sup> and lower than the population density of County Donegal, recorded at 35.1 persons per km<sup>2</sup>.

The population density of the Population Study Area recorded during the 2016 Census was 20.3 and during the 2022 Census was 21.1 persons per km<sup>2</sup>, showing an increase of 0.8 persons per km<sup>2</sup>. These figures are much lower than the State level figure of 67.8 persons per km<sup>2</sup> in 2016 and 73.3 persons per km<sup>2</sup> in 2022. Similar to State level, the population density of the Population Study Area is lower than that of County Donegal, at 33.4 persons per km<sup>2</sup> in 2016, and 35.1 persons per km<sup>2</sup> in 2022.

Similar to the trends observed in population, the population density recorded across the Population Study Area varies between EDs. In 2016, the ED with the highest population density was Dooish at 51.4 persons per km<sup>2</sup>, and in 2022, Dooish remained the ED with the highest population density at 55.2 persons per km<sup>2</sup>. In 2016, the ED with the lowest population density was Goland ED with 8.94 persons per km<sup>2</sup>, Clogher remained the ED with the lowest population density with a declined figure of 8.49 persons per km<sup>2</sup> in 2022.

### 5.3.1.3 Household Statistics

The number of households and average household size recorded within the State, County Donegal and the Population Study Area during the 2016 and 2022 Censuses are shown in Table 5-5.

Table 5-5 Number of Household and Average Household Size 2016 – 2022 (Source: CSO)

| Area                  | 2016              |                     | 2022              |                     |
|-----------------------|-------------------|---------------------|-------------------|---------------------|
|                       | No. of Households | Avg. Size (persons) | No. of Households | Avg. Size (persons) |
| State                 | 1,702,289         | 2.8                 | 1,841,152         | 2.7                 |
| County Donegal        | 58,505            | 2.7                 | 61,780            | 2.7                 |
| Population Study Area | 923               | 2.9                 | 985               | 2.9                 |

In general, the figures in Table 5-5 show that the number of households within the State, County and the EDs increased between 2016 and 2022. The average number of people per household in the State, County Donegal and the Population Study Area has stayed much the same between 2016 and 2022, with the State figure decreasing slightly from 2.8 to 2.7. Average household size recorded within the Population Study Area during the 2016 and 2022 Censuses are slightly higher than those observed at State and County level during the same time period. Average household sizes in the Population Study Area and in County Donegal have remained the same during the 2016 to 2022 period.

### 5.3.1.4 Age Structure

Table 5-6 presents the population percentages of the State, County Donegal and Population Study Area within different age groups as defined by the CSO during the 2022 and 2016 Census. This data is also displayed in Figure 5-3.

Table 5-6 Population per Age Category in 2022 and 2016 (Source: CSO)

| Area                  | Age Category |         |         |         |        |
|-----------------------|--------------|---------|---------|---------|--------|
|                       | 2022         |         |         |         |        |
|                       | 0 - 14       | 15 - 24 | 25 - 44 | 45 - 64 | 65 +   |
| State                 | 19.7%        | 12.5%   | 27.6%   | 25.1%   | 15.1%  |
| County Donegal        | 20.4%        | 11.8%   | 23.7%   | 26.3%   | 17.7%  |
| Population Study Area | 21.5 %       | 13.4 %  | 21.6 %  | 29.4 %  | 14.1 % |
| Area                  | Age Category |         |         |         |        |
|                       | 2016         |         |         |         |        |
|                       | 0 - 14       | 15 - 24 | 25 - 44 | 45 - 64 | 65 +   |
| State                 | 21.1%        | 12.1%   | 29.5%   | 23.8%   | 13.4%  |
| County Donegal        | 22.0%        | 11.6%   | 25.7%   | 25.0%   | 15.7%  |
| Population Study Area | 24.6%        | 11.7%   | 23.5%   | 27.5%   | 12.7%  |

County Donegal's population in April 2022 was comprised of 167,087 people, an increase of 5% from 2016 which had a population of 159,192. The average age of Donegal's population in April 2022 was 40.1 years, compared with 38.5 years in April 2016. Nationally, the average age of the population was 38.8, up from 37.4 in April 2016. The number of people aged 65 and over continues to grow. This age group increased by 18.6% to 29,626 in Donegal, and by 21.8% to 776,315 at a national level since 2016. The proportion of the Population Study Area population within each age category is similar to those recorded at national and County level for most categories. The percentage proportion of those aged 45-64 in the Population Study Area is minimally more than on County and National level both in 2016 and 2022. Additionally, the percentage proportion of those aged 25-44 in the Population Study Area is slightly less than on County and National level in both 2016 and 2022. For the Population Study Area, the highest population percentage occurs within the 45-64 age category. This age category would be considered to be less sensitive to change when compared to other age categories.

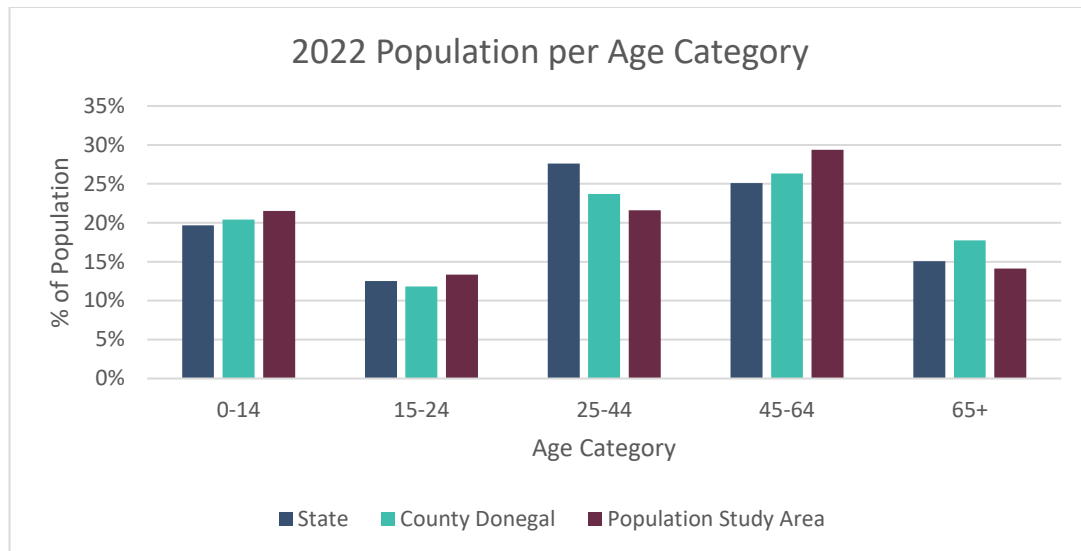


Figure 5-3 Population per Age Category in 2022 (Source: CSO)

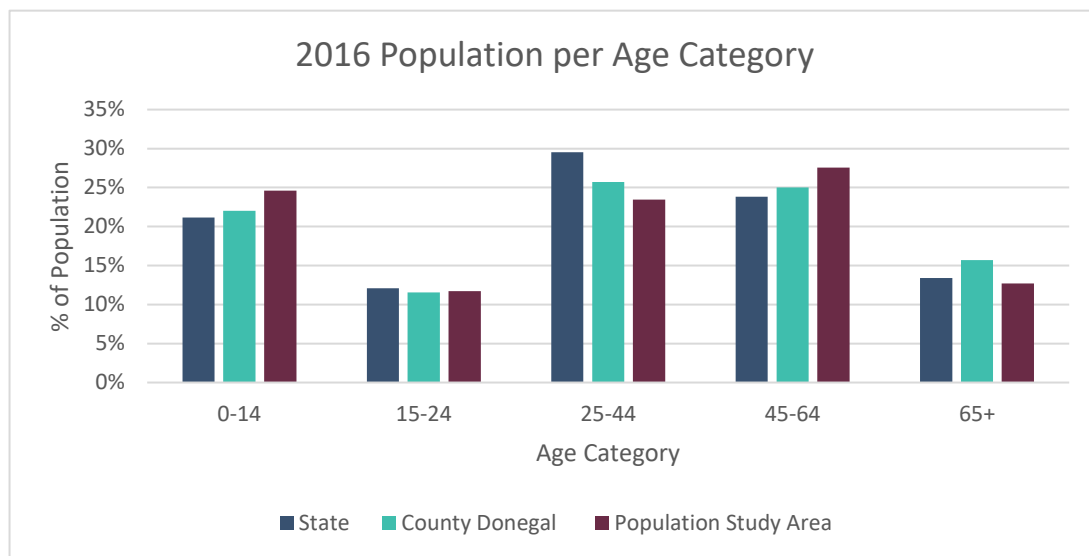


Figure 5-4 Population per Age Category in 2016 (Source: CSO)



## 5.3.1.5 Employment and Economic Activity

### 5.3.1.5.1 Economic Status of the Population Study Area

The labour force consists of those who can work, i.e., those who are aged 15+, out of full-time education and not performing duties that prevent them from working. There were 67,977 people (aged 15 and over) at work in Donegal, an increase of 9,624 people (+16.4%) between 2016 and 2022. Nationally, there were 313,656 additional people (+16%) at work. This number is further broken down into the percentages that were at work, seeking first time employment or unemployed. It also shows the percentage of the total population aged 15+ who were *not* in the labour force, i.e., those who were students, retired, unable to work or performing home duties. The data regarding economic status is presented in Table 5-7 and 5-8 below.

Table 5-7 Economic Status of the Total Population Aged 15+ in 2022 (Source: CSO)

| Status                                                   | State                 | County Donegal | Population Study Area |
|----------------------------------------------------------|-----------------------|----------------|-----------------------|
| % of population aged 15+ who are in the labour force     | 61.2%                 | 57.2%          | 59.2%                 |
| % of which are:                                          | At work               | 91.7%          | 93.3%                 |
|                                                          | First time job seeker | 1.4%           | 0.9%                  |
|                                                          | Unemployed            | 7.0%           | 5.8%                  |
| % of population aged 15+ who are not in the labour force | 38.8%                 | 42.8%          | 40.8%                 |
| % of which are:                                          | Student               | 28.6%          | 31.0%                 |
|                                                          | Home duties           | 17.0%          | 15.1%                 |
|                                                          | Retired               | 41.0%          | 42.8%                 |
|                                                          | Unable to work        | 11.8%          | 10.7%                 |
|                                                          | Other                 | 1.7%           | 0.4%                  |

Overall, the principal economic status of those living in the Population Study Area is broadly similar to that recorded at State and County level. The principal economic status of those within the labour force living in the Population Study Area is slightly lower than that recorded at State level, with an average difference of 1.4% apparent, but slightly higher than in County Donegal, with an average difference of 2%. However, the percentage of the population 'At work' is higher in the Population Study Area than on State and County level. Of those who were not in the labour force during the 2022 census, the highest percentage of the population in the Population Study Area was the 'Retired' category, which is the same trend recorded at State and County level. Furthermore, the percentage of the population in the 'Student' category was higher in the Population Study Area than on State and County level, whereas the percentage of those in the 'Unable to work' and 'Home duties' categories is lower in the Population Study Area than in the State and County Donegal.

Table 5-8 Economic Status of the Total Population Aged 15+ in 2016 (Source: CSO)

| Status                                                   | State                 | County Donegal | Population Study Area |
|----------------------------------------------------------|-----------------------|----------------|-----------------------|
| % of population aged 15+ who are in the labour force     | 61.4%                 | 57.3%          | 59.3%                 |
| % of which are:                                          | At work               | 87.1%          | 82%                   |
|                                                          | First time job seeker | 1.4%           | 1.6%                  |
|                                                          | Unemployed            | 11.5%          | 16.4%                 |
| % of population aged 15+ who are not in the labour force | 38.6%                 | 42.7%          | 40.7%                 |
| % of which are:                                          | Student               | 29.4%          | 25.2%                 |
|                                                          | Home duties           | 21.1%          | 20.1%                 |
|                                                          | Retired               | 37.6%          | 42.2%                 |
|                                                          | Unable to work        | 10.9%          | 11.6%                 |
|                                                          | Other                 | 1.0%           | 0.7%                  |

Overall, the principal economic status of those within the labour force living in the Population Study Area is lower than that recorded at State level, but higher than that of County Donegal. The percentage of individuals in the labour force differs by 4.1% between the State and County level, and by 2% between the Population Study Area and the County level. However, the percentage of the population 'At work' is higher in the Population Study Area than on State or County level. Of those who were not in the labour force during the 2016 Census, the highest percentage of the population in the Population Study Area was in the 'Retired' category, which is the same trend recorded at national and County level that show 'retired' as the highest category. Furthermore, the percentage of the population in the 'Student' and 'Other' categories was higher than on State and County level, whereas the percentage of the population in the 'Unable to work' and 'Home duties' categories was lower than on State and County level. The 2022 and 2016 data show similar trends, with the percentage of people at work only decreasing by 0.1% within the Population Study Area.

#### 5.3.1.5.2 Employment by Socio-Economic Group

Socio-economic grouping divides the population into categories depending on the level of skill or educational attainment required. The 'Higher Professional' category includes scientists, engineers, solicitors, town planners and psychologists, typically requiring advanced degrees or expertise. The 'Lower Professional' category includes teachers, lab technicians, nurses, journalists, actors and driving instructors, which require vocational training or qualifications. The 'Non-manual' group includes a variety of clerical, technical, sales, and service roles, often involving office work, customer interaction, and skilled trades. These occupations generally require specific skills or training but do not demand the formal higher education or professional qualifications typically associated with the lower or higher professional categories. Skilled occupations are divided into manual skilled, such as bricklayers and building contractors; semi-skilled, e.g. roofers and gardeners; and unskilled, which includes construction labourers, refuse collectors and window cleaners.

Figures 5-5 and 5-6 shows the percentages of those employed in each socio-economic group in the State, County Donegal and the Population Study Area during 2022 and 2016 census.



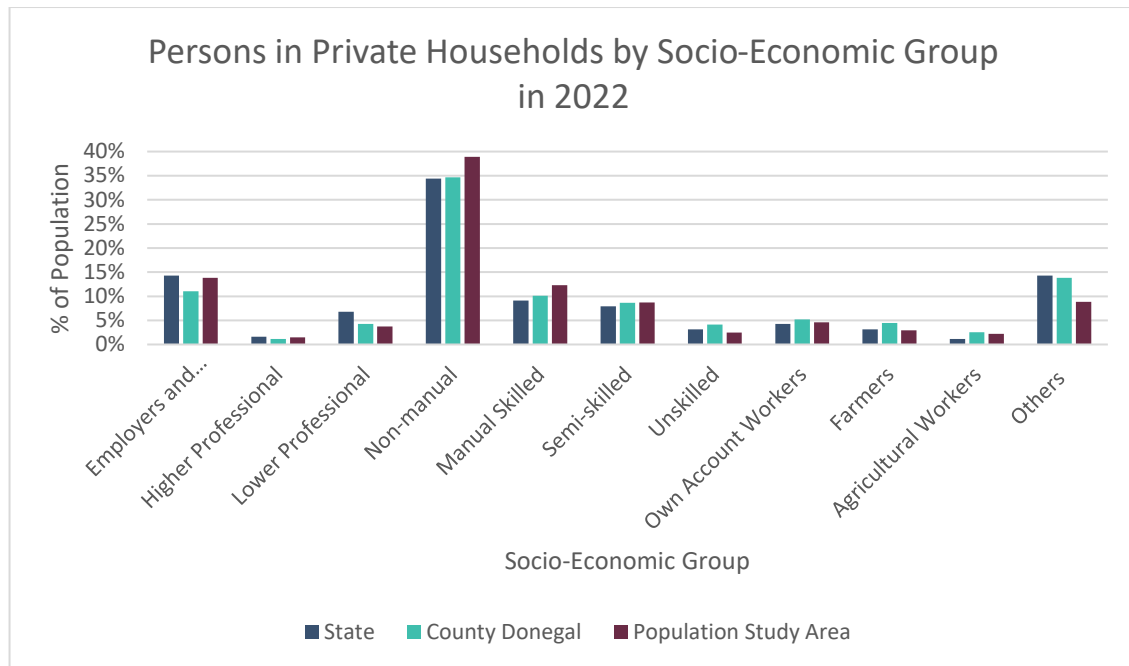


Figure 5-5 Persons in Private Households by Socio-Economic Group in 2022 (Source: CSO)

Overall, the figures showing employment by socio-economic group in 2022 in the State, County and the Population Study Area exhibited similar trends. The highest levels of employment within the Population Study Area were recorded in the 'Non-manual' and 'Employers and Managers' categories, at 38.9% and 13.8%. The State and County Donegal both had the highest levels of employment in these categories. Whereas the lowest levels of employment within the Population Study Area were recorded in the 'Higher Professional' and 'Agricultural Workers' categories, at 1.4% and 2.2%. In a similar trend, the State and County Donegal both had the lowest levels of employment in these categories.

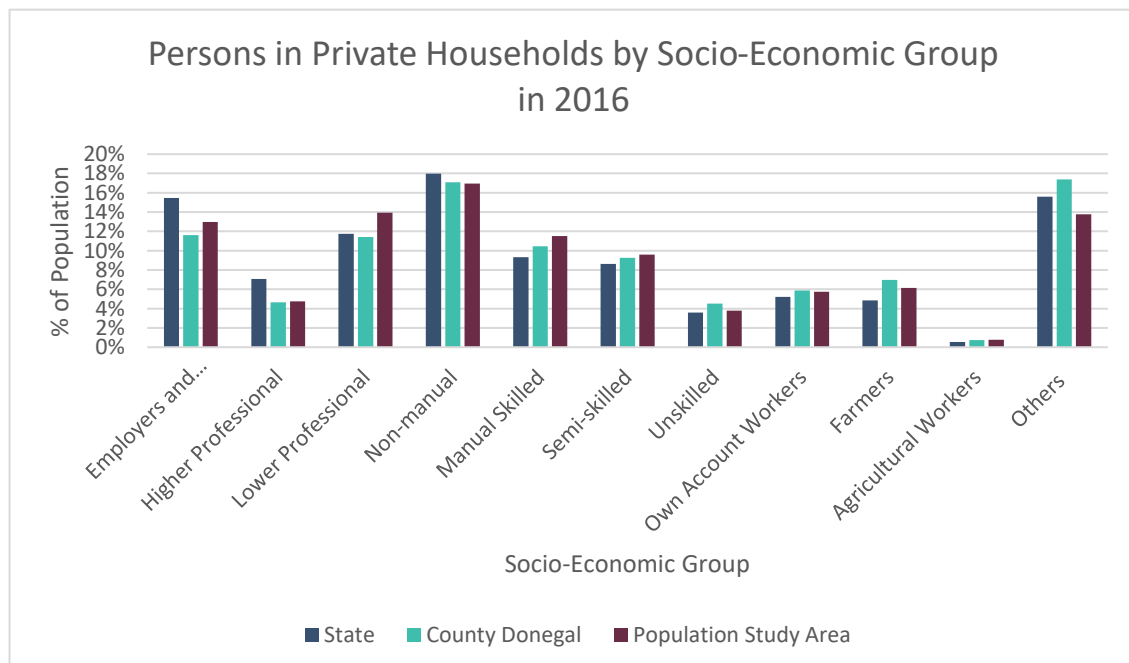


Figure 5-6 Persons in Private Households by Socio-Economic Group in 2016 (Source: CSO)

Overall, the figures showing employment by socio-economic group in 2016 in the State, County and the Population Study Area exhibited similar trends. The highest levels of employment within the Population Study Area were recorded in the 'Non-manual' and 'Other' categories, at 17.0% and 13.8%. The State and County Donegal both had the highest levels of employment in these categories. Whereas

the lowest levels of employment within the Population Study Area were recorded in the 'Unskilled' and 'Agricultural Workers' categories, at 3.8% and 0.8%.

In the Population Study Area, those within the 'Non-Manual' category experienced a significant increase, rising by 21.9% from 452 (17%) to 1102 (38.9%) from 2016 to 2022. In contrast, those in the 'Farmers' category decreased by 3.2% from 2016 to 2022, and those within the 'Higher Professional' category decreased by 3.4% from 4.8% to 1.4% from 2016 to 2022.

The CSO figures for socio-economic grouping have a limitation of including the entire population, rather than just those who are in the labour force. It is likely that this is what gives rise to the high proportion of the population shown to be in the 'Others' categories.

### 5.3.1.5.3 **Employment and Investment Potential in the Irish Wind Energy Industry**

#### Background

A report entitled '*Jobs and Investment in Irish Wind Energy – Powering Ireland's Economy*'<sup>3</sup> was published in 2009 by Deloitte, in conjunction with the Irish Wind Energy Association (IWEA). This report focused on the ability of the Irish wind energy industry to create investment and jobs. In terms of the overall economic benefit to be obtained from wind energy, the report states in its introduction:

*"Ireland is fortunate to enjoy one of the best wind resources in the world. Developing this resource will reduce and stabilise energy prices in Ireland and boost our long-term competitiveness as an economy. It will also significantly reduce our dependence on imported fossil fuels."*

More recently, a report published in 2014 by Siemens entitled '*An Enterprising Wind - An economic analysis of the job creation potential of the wind sector in Ireland*'<sup>4</sup>, also in conjunction with the Irish Wind Energy Association (IWEA), concluded that, '*a major programme of investment in wind could have a sizeable positive effect on the labour market, resulting in substantial growth in employment.*' The report considers the three potential types of direct employment created, as a result of increased investment in wind energy, to be:

- Wind Energy Industry Employment:
  - Installation
  - Development
  - Planning
  - Operation and Maintenance
  - Investor activity
- Electricity Grid Network Employment
- Potential Wind Turbine Manufacturing Employment

The Sustainable Energy Authority of Ireland<sup>5</sup> demonstrates in their '*Wind Energy Roadmap 2011-2050*', that '*the wind energy resource represents a significant value to Ireland by 2050. This value is presented in terms of its ability to contribute to our indigenous energy needs, the benefits of enhanced employment creation and investment potential, and the ability to significantly abate carbon emissions to 2050.*'

<sup>3</sup> Deloitte, Irish Wind Energy Association 2009 *Jobs and Investment in Irish Wind Energy Powering Ireland's Economy*. Available at: <https://windenergyireland.com/images/files/9660bd5e72bcac538f47d1b02cc6658c97d41f.pdf>

<sup>4</sup> Siemens (2014) *An Enterprising Wind - An economic analysis of the job creation potential of the wind sector in Ireland*. Available at: <https://www.esri.ie/publications/an-enterprising-wind-an-economic-analysis-of-the-job-creation-potential-of-the-wind>

<sup>5</sup> SEAI (2019), [https://www.seai.ie/publications/Wind\\_Energy\\_Roadmap\\_2011-2050.pdf](https://www.seai.ie/publications/Wind_Energy_Roadmap_2011-2050.pdf)



## Energy Targets

The Climate Action Plan 2025 (CAP25) was launched in April 2025. Following on from Climate Action Plans 2019, 2021, 2023, and 2024, CAP25 sets out the roadmap to deliver on Ireland's climate ambition. It aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022 following the Climate Action and Low Carbon Development (Amendment) Act 2021, which commits Ireland to a *legally binding target of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030*. CAP25 sets out indicative ranges of emissions reductions for each sector of the economy. It should be noted that the release of the Climate Action Plan 2026 (CAP26) has been delayed, and at the time of writing has not yet been published.

Further information on energy and climate change targets is detailed in Section 1.5 of Chapter 1, Sections 2.2 to 2.4 of Chapter 2, and Chapter 11 Climate of this rEIAR.

## Employment Potential

The 2014 report "*An Enterprising Wind: An economic analysis of the job creation potential of the wind sector in Ireland*"<sup>6</sup> published by the Irish Wind Energy Association (IWEA) predicted that the wind energy sector in Ireland would result in 6,659 direct jobs in a scenario where 4GW capacity is achieved by 2020. This figure of 6,659 is broken down further; 5,596 of these jobs are associated directly with the construction and installation of windfarms, while the remaining 1,063 jobs are associated with the national grid. Under this scenario this contributes 1.66 direct jobs per Megawatt (MW) of wind capacity throughout the various stages of installation. According to Wind Energy Ireland, the installed wind capacity in Ireland is over 4.3GW as of February 2021, which would support employment during the last decade. Ireland needs to achieve a total of 9GW of onshore wind by 2030 which will further support further employment.

The Sustainable Energy Authority of Ireland estimates, in their '*Wind Energy Roadmap 2011-2050*', note that '*Onshore and offshore wind could create 20,000 direct installation and O&M jobs by 2040*'. This Roadmap estimated that onshore and offshore wind could create 20,000 direct installation and operation/maintenance jobs by 2040 and that the wind industry would also have an annual investment potential of approximately €6-12 billion by 2040.

The 2014 report '*The Value of Wind Energy to Ireland*'<sup>7</sup>, published by Pöyry, stated that growth of the wind sector in Ireland could support 23,850 jobs (construction and operational phases) by 2030. The report states that if Ireland instead chooses to not develop any more wind, then by 2030 the country will be reliant on natural gas for most of our electricity generation, at a cost of €671 million per annum in fuel import costs.

Internationally, a report issued by WindEurope in September 2017, entitled '*Wind energy in Europe: Scenarios for 2030*'<sup>8</sup> details various scenarios in Europe in respect to the EU target for renewable energy. According to WindEurope's High Scenario, which assumes favourable market and policy conditions including the achievement of a 35% EU renewable energy target (slightly higher than the 32% EU target for renewables), '*397 GW of wind energy capacity would be installed in the EU by 2030, 298.5 GW onshore and 99 GW offshore. In this scenario, the wind energy industry would invest €351bn by 2030, and it would create 716,000 jobs*'.

A new report published by MaREI, the SFI Research Centre for Energy, Climate and Marine, hosted by University College Cork<sup>9</sup> (March 2021) details that in order to meet the government target of net-

<sup>6</sup> IWEA (2014) *An Enterprising Wind: An economic analysis of the job creation potential of the wind sector in Ireland*. Available at: <https://www.esri.ie/publications/an-enterprising-wind-an-economic-analysis-of-the-job-creation-potential-of-the-wind>

<sup>7</sup> Pöyry *The Value of Wind Energy to Ireland* – March 2014

<sup>8</sup> WindEurope (2017) *Wind Energy in Europe Scenarios for 2030* <<https://windeurope.org/wp-content/uploads/files/about-wind/reports/Wind-energy-in-Europe-Scenarios-for-2030.pdf>>

<sup>9</sup> <https://www.marei.ie/our-climate-neutral-future-zero-by-50/>

zero carbon emissions by 2050, at least 25,000 jobs will be created in the development of onshore and offshore wind to meet our zero carbon targets.

A more recent report which was issued by WindEurope in February 2022, titled ‘*Wind Energy in Europe: 2021 Statistics and the Outlook for 2022-2026*’<sup>10</sup> details various scenarios in Europe in respect to the EU target for renewable energy. According to WindEurope’s report, ‘*Europe installed 17GW (11 GW in the EU-27) of new wind capacity in 2021. This is not even half of what the EU should be building to be on track to deliver its 2030 Climate Energy Goals.*’ The report continued on to state that ‘*We expect Europe to install 116 GW of new wind farms over the period from 2022-2026. Three quarters of these new capacity additions will be onshore wind.*’ The report also states that ‘*The European Commission modelling shows that we need at least 79 GW offshore wind but National Government have pledged to build at least 92 GW offshore wind capacity by 2030.*’

As of January 2026, there were 6.48GW of wind energy capacity installed on the island of Ireland<sup>11</sup>. Of this, 5GW was installed in the Republic of Ireland. The majority of the Republic of Ireland’s installed wind energy capacity is located in Counties Donegal, Galway, Cork, Clare, Mayo and Kerry, contributing to employment potential on the Island of Ireland.

### Economic Value

A 2019 report by Baringa, ‘*Wind for a Euro: Cost-benefit analysis of wind energy in Ireland 2000-2020*’<sup>12</sup>, has analysed the financial impact for end consumers of the deployment of wind generation in Ireland over the period 2000-2020. The report calculates how the costs and benefits for consumers would have differed if no wind farms had been built. The analysis indicated that the deployment of 4.1GW of wind generation capacity in Ireland between 2000 and 2020 (2018-2020 results being projective) will result in a total net cost to consumers, over 20 years, of €0.1 billion (€63 million to be exact), which equates to a cost of less than €1 per person per year since 2000. Further cost benefit analysis noted that wind energy has delivered €2.3 billion in savings in the wholesale electricity market. As such, the economic benefit of renewable energy to consumers is greater than what would have been if Ireland did not invest in wind power. This corresponds with the Deloitte report which indicates that more wind energy feeding into the national grid will result in lower and more stable energy costs for consumers.

Furthermore, in May 2020, IWEA released its 70by30 Implementation Plan Reports<sup>13</sup> which further details the savings that can be made from the continuation of onshore wind. The report, entitled ‘*Saving Money - 70 by 30 Implementation Plan*’, notes that ‘*Baringa calculated previously that if onshore wind in Ireland can be delivered at €60/MWh, on average, between 2020 and 2030, then the 70 per cent renewable electricity target set out in the Climate Action Plan will actually be cost neutral for the consumer. If we can achieve prices under €60/MWh then Ireland’s electricity consumers will be saving money.*’

The Subject Development will, if consent is granted, contribute to the economic value that renewable energy brings to the country.

### 5.3.1.6 Land Use Patterns and Activities

The primary surrounding land use within the Population Study Area is that of peat bogs, commercial forestry, agriculture and other seminatural areas with limited residential use along local roads.

<sup>10</sup> WindEurope (2022) *Wind Energy in Europe 2021 Statistics and the Outlook for 2022-2026* <<https://windeurope.org/intelligence-platform/product/wind-energy-in-europe-2021-statistics-and-the-outlook-for-2022-2026/>>

<sup>11</sup> Eirgrid, <https://www.eirgrid.ie/grid/system-and-renewable-data-reports>

<sup>12</sup> Baringa (2019) *Wind for a Euro: Cost Benefit Analysis of Wind Energy in Ireland 2000-2020*

<<https://www.baringa.com/en/insights/low-carbon-futures/our-market-and-policy-studies-in-ireland/wind-for-a-euro/>>

<sup>13</sup> [https://windenergyireland.com/all-documents?file\\_category=21](https://windenergyireland.com/all-documents?file_category=21)



According to the Department of Agriculture, Food and the Marine (DOAFM) *Ireland's National Forest Inventory*<sup>14</sup> (2017 and 2022), County Donegal had a forest cover of 11.4%, which made up 7.2% of the total forest area in Ireland. Comparable to the national forest cover of Ireland which is 11.0%. In 2022, County Donegal has a forest cover of 11.8%, which is comparable to Ireland's national forest cover of 11.6%<sup>15</sup>. County Donegal's Forest cover increased by 0.4% from 11.4% in 2017 to 11.8% in 2022, and Ireland's national forest cover increased by 0.6% from 11.0% in 2017 to 11.6% in 2022.

The Population Study Area has a forestry cover of 3,839 ha, comprising 28.9% of the Population Study Area, which is significantly higher than that of state and county level. The total area of farmland within the Population Study Area measures approximately 4,054 ha, comprising 30.5% of the Population Study Area, according to the CSO Census of Agriculture 2020. There are 174 farms located within the Population Study Area, with an average farm size of 23 ha. This is below the average 27 ha farm size for County Donegal. Farmland in the Population Study Area comprises exclusively of grassland, at 4,024 ha. Table 5-9 gives an overview of land use in the Population Study Area.

Table 5-9 Farm Size and Classification within the Population Study Area 2020 (Source: CSO, OSI maps)

| ED                             | No of holdings | Average size (hectares) | Median age of holder  | Livestock units | Average farmed (hectares) |
|--------------------------------|----------------|-------------------------|-----------------------|-----------------|---------------------------|
| Clogher                        | 50             | 22                      | 52.5                  | 716             | 1099.9                    |
| Dooish                         | 58             | 23.8                    | 57.5                  | 733             | 1381.1                    |
| Goland                         | 37             | 31.1                    | 60                    | 535             | 1150.1                    |
| Tawnawully                     | 29             | 14.6                    | 66                    | 371             | 422.7                     |
| <b>Total</b>                   | <b>231</b>     | <b>22.5 (average)</b>   | <b>58.4 (average)</b> | <b>3,174</b>    | <b>1,050.06 (average)</b> |
| Size of 4 no. EDs              |                |                         | 13,303.4 hectares     |                 |                           |
| Total Area Farmed within 4 EDs |                |                         | 5,250.3 hectares      |                 |                           |
| Farmland as % of EDs           |                |                         | 39.47%                |                 |                           |

### 5.3.1.7 Services

The area within the vicinity of the Wind Farm Site and Grid Connection Site is generally sparsely populated. The main services are located within the more densely populated towns of Ballybofey and Stranorlar, located approximately 8 km north of the Wind Farm Site, and Donegal Town, situated

<sup>14</sup> DOAFM (2017) *Ireland's National Forest Inventory 2017 Results*. <https://assets.gov.ie/static/documents/nfi-results-2017.pdf>

<sup>15</sup> DOAFM (2022) *Ireland's National Forest Inventory 2022 Results*. [https://assets.gov.ie/static/documents/NFI4\\_Results\\_250625.pdf](https://assets.gov.ie/static/documents/NFI4_Results_250625.pdf)

roughly 8 km to the southwest of the Grid Connection Site. All settlement centres provide retail, recreational, educational, and religious services.

#### 5.3.1.7.1 **Education**

The nearest primary school is St. Francis National School and is approximately 2.4 km southwest of the Grid Connection Site. Beyond that are Scoil Seiseadh Ui Neill approximately 7.1 km north of the Wind Farm Site, Dooish National School approximately 8 km north of the Wind Farm Site, and St. Marys National School approximately 9.4 km north of the Wind Farm Site, close to the twin towns of Ballybofey and Stranolar. The nearest secondary schools are located in the twin towns of Ballybofey and Stranolar namely St. Columba's College and Finn Valley College located approximately 8.8 km and approximately 9.1 km north of the Wind Farm Site. There are also 2 no. secondary schools in Donegal town, Donegal Aodh Rua and Nuala and Abbey Vocational School, approximately 7.6 km and approximately 8.7 km southwest of the Grid Connection Site. Multiple third level location centres are located in the vicinity of the Wind Farm Site and Grid Connection Site. The Atlantic Technological University (Donegal Letterkenny Campus) is located approximately 25.4 km north of Wind Farm Site and the Atlantic Technological University (Donegal Killybegs Campus) is approximately 30 km southwest of the Grid Connection Site. Furthermore, Donegal Medical Academy is located approximately 26 km south of the Wind Farm Site and the Southwest college (Omagh Campus) is located approximately 38 km east of the Wind Farm Site in Northern Ireland.

#### 5.3.1.7.2 **Access and Public Transport**

The Wind Farm Site is accessible via the N15 National Primary Road to the west and a local road to the north. The Wind Farm Site is also served by a number of existing roads and tracks. The Grid Connection Site extends from the Wind Farm Site south along the N15 National Primary Road, connects to the L-2595 Local Primary Road, continues to the L-1985 Local Primary Road, and proceeds along the L-19825 Local Tertiary Road to reach the Clogher substation. There are three local bus services provided by Local Link Donegal Sligo Leitrim, through private bus operators. Bus routes 264 Ballyshannon to Letterkenny and 988 Cloghan to Letterkenny pass the Wind Farm Site entrance off the N15 National Primary Road Monday to Friday and the Bus Eireann route 480 from Sligo to Derry passes the Wind Farm Site entrance off the N15 National Primary Road daily. However, there is no bus stop in the vicinity of the Wind Farm Site and Grid Connection Site. The nearest public transport access (bus stop) is in Ballybofey/Stranolar, located approximately 11.7 km northeast of the primary Wind Farm Site access point. The nearest train station to the Wind Farm Site and Grid Connection Site is the Derry train station located 45 km northeast of the Wind Farm Site in Northern Ireland providing connection to Belfast, and Sligo train station approximately 56 km south of the Grid Connection Site, providing connection with Dublin Heuston.

#### 5.3.1.7.3 **Amenities and Community Facilities**

There are no amenity or community facilities located within or adjacent to the Wind Farm Site and Grid Connection Site; however, there are several in the surrounding area. Located approximately 2.3 km southwest of the Grid Connection Site is the Townawully Community Centre while Leghawney Hall is located 2.9 km south of the Grid Connection Site. CLG Seán Mac Cumhaills is located approximately 8.6 km northeast of the Wind Farm Site, Glenfin GAA is located 9.7 km north, while Four Masters GAA Club and St Nauls GAA and LGFA are located approximately 8.9 km and 14.1 km southwest of the Grid Connection Site. Amenities and community facilities, including other sports clubs, youth clubs, and recreational areas are located in Ballybofey/Stranolar and Donegal Town. There are limited amenities in the surrounding area of the Wind Farm Site and Grid Connection Site. The Gap Lodge B&B and Biddy O'Barnes gastropub and car park is located within 100 m of the Grid Connection Site.

## 5.3.2 Tourism

### 5.3.2.1 Tourism and Revenue

Tourism is a major contributor to Ireland's national economy and an important source of both full-time and seasonal employment. At the time of writing, the most recent publication of national tourism data is *Key Tourism Facts 2024*<sup>16</sup>, published by Fáilte Ireland. For context, data from 2017 (pre-construction of the Existing Development) and 2019 (the baseline year) are also presented below.

#### Tourism in the Border Region (2017)

The Border Region, in which the Existing Development is located, comprises County Donegal, Sligo, Leitrim, Cavan, Monaghan and Louth. Table 5-10 presents a breakdown of overseas tourist numbers and revenue to the Border Region during 2017<sup>17</sup>. There is no published County by County tourism breakdown from 2018 onwards.

Table 5-10 Overseas Tourism to the Border Region during 2017 (Source: Fáilte Ireland)

| County                | Total Number of Overseas Tourists (000s) | Total Revenue (€m) |
|-----------------------|------------------------------------------|--------------------|
| <b>County Donegal</b> | <b>255</b>                               | <b>82</b>          |
| County Cavan          | 107                                      | 48                 |
| County Leitrim        | 41                                       | 18                 |
| County Louth          | 172                                      | 55                 |
| County Monaghan       | 60                                       | 25                 |
| County Sligo          | 173                                      | 45                 |
| <b>Total</b>          | <b>808</b>                               | <b>273</b>         |

As shown, County Donegal attracted the largest share of overseas visitors in 2017 (255,000 tourists) and generated tourism revenue of approximately €82 million.

#### National Tourism Trends (2019)

According to *Key Tourism Facts 2019* (Fáilte Ireland, 2021), the number of overseas tourists visiting Ireland grew by 0.7% to 9.7 million in 2019. Out-of-state tourist expenditure amounted to €5.6 billion, and overseas visitors spent a further €1.8 billion on fares to Irish carriers, bringing total foreign exchange earnings to €7.4 billion. The Border Region benefited from approximately 9% of the total number of overseas tourists to the country and approximately 9% of the total tourism income generated in Ireland in 2019.

<sup>16</sup> Fáilte Ireland (2025) *Key Tourism Facts 2024*.

[https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202024/FI\\_Key-Tourism-Facts-2024\\_National-Summary\\_1.pdf?ext=.pdf](https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202024/FI_Key-Tourism-Facts-2024_National-Summary_1.pdf?ext=.pdf)

<sup>17</sup> Fáilte Ireland (2018) *Topline Tourism Performance by Region 2017*.

[https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3\\_Research\\_Insights/2\\_Regional\\_SurveysReports/2017-topline-regional-tourism-performance.pdf?ext=.pdf](https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/3_Research_Insights/2_Regional_SurveysReports/2017-topline-regional-tourism-performance.pdf?ext=.pdf)



Table 5-11 Overseas Tourists Revenue and Numbers 2019 (Source: Fáilte Ireland)

| Region            | Total Revenue (€m) | Total Number of Non-Domestic Tourists (000s) |
|-------------------|--------------------|----------------------------------------------|
| Dublin            | €2,305m            | 6,927                                        |
| Mid-East/Midlands | € 400m             | 1,124                                        |
| South-East        | €282m              | 995                                          |
| South-West        | €995m              | 2,373                                        |
| Mid-West          | €480m              | 1,455                                        |
| West              | €701m              | 2,056                                        |
| <b>Border</b>     | <b>€411m</b>       | <b>1,365</b>                                 |
| <b>Total</b>      | <b>€5,574 m</b>    | <b>16,295</b>                                |

### Tourism Performance (2024)

According to Key Tourism Facts 2024 (Fáilte Ireland, 2025), total out-of-state (overseas and Northern Ireland) tourist expenditure amounted to €6.6 billion during 2024. A further €1.5 billion was spent by overseas visitors on fares to Irish carriers, bringing total foreign exchange earnings to €8 billion. Domestic tourism expenditure reached €3.6 billion, making tourism a €12 billion industry overall.

The report also states that, using an alternative employment estimation method based on PAYE tax data, the Tourism Industries employee headcount was approximately 226,300 in Q3 2024.

Ireland is divided into seven tourism regions. Table 5-12 presents the total revenue and breakdown of out-of-state tourists by region during 2024.

Table 5-12 Out-of-state (Overseas and Northern Ireland Tourists Revenue and Numbers 2024

| Region            | Total Number of Out of State Tourists (000s) | % Total Number of Out of State Tourists | Total Revenue (€m) of Out of State Tourists | % Revenue of Out of State Tourists |
|-------------------|----------------------------------------------|-----------------------------------------|---------------------------------------------|------------------------------------|
| Dublin            | 4,370                                        | 41                                      | 2,471                                       | 38                                 |
| Mid-East/Midlands | 933                                          | 9                                       | 582                                         | 9                                  |
| South-East        | 576                                          | 5                                       | 336                                         | 5                                  |
| South-West        | 1,541                                        | 14                                      | 1,215                                       | 19                                 |
| Mid-West          | 878                                          | 8                                       | 565                                         | 9                                  |
| West              | 1,326                                        | 12                                      | 877                                         | 13                                 |
| <b>Border</b>     | <b>1,029</b>                                 | <b>10</b>                               | <b>506</b>                                  | <b>8</b>                           |
| <b>Total</b>      | <b>10,653</b>                                | <b>-</b>                                | <b>6,552</b>                                | <b>-</b>                           |

## Domestic Tourism (2024)

Key Tourism Facts 2024 reports that the average per diem spend per person for domestic overnight trips was €98. Table 5-13 presents domestic tourism numbers and expenditure by region for 2024.

Table 5-13 Domestic Tourism Revenue and Numbers by Region 2024

| Region            | Total Number of Domestic Tourists (000s) | % Total Number of Domestic Tourists | Total Revenue (€m) of Domestic Tourists | % Revenue of Domestic Tourists |
|-------------------|------------------------------------------|-------------------------------------|-----------------------------------------|--------------------------------|
| Dublin            | 2,823                                    | 17                                  | 583                                     | 16                             |
| Mid-East/Midlands | 2,383                                    | 14                                  | 488                                     | 14                             |
| South-East        | 2,113                                    | 13                                  | 422                                     | 12                             |
| South-West        | 3,190                                    | 19                                  | 757                                     | 21                             |
| Mid-West          | 1,775                                    | 11                                  | 349                                     | 10                             |
| West              | 2,461                                    | 15                                  | 618                                     | 17                             |
| <b>Border</b>     | <b>1,827</b>                             | <b>11</b>                           | <b>385</b>                              | <b>11</b>                      |
| <b>Total</b>      | <b>16,572</b>                            |                                     | <b>3,602</b>                            |                                |

The Border Region generated an estimated €385 million from domestic tourism in 2024, accounting for 11% of domestic tourism revenue. Tourism remains one of Ireland's most significant industries, contributing to both the economic and social fabric of the island. It is a leading generator of employment and income and one of the few sectors with substantial potential to benefit remote and rural communities. The Border Region continues to play an important role within this sector, attracting 10% of all out-of-state tourists and 11% of domestic visitors in 2024.

Table 5-14 presents the breakdown of tourist numbers and revenue to County Donegal during 2024 ('Donegal Key Tourism Facts 2024', Fáilte Ireland, August 2025)<sup>18</sup>. As can be observed in Table 5-14, County Donegal had a higher number of Domestic tourists visiting the County than Overseas tourist during 2025, with each group generating tourism revenue of €180 million and €281million respectively. The key activities which domestic holiday makers engaged in included walking, hiking touring by car, visiting houses/castles and visiting nature reserves/national parks.

Table 5-14 Tourism to Donegal during 2024 (Source: Fáilte Ireland)

| County                         | Overseas Tourists | Domestic Tourists |
|--------------------------------|-------------------|-------------------|
| Revenue Generated (€m)         | 180               | 281               |
| No. of Tourists (000s)         | 243,000           | 867,000           |
| Average spend per capita (€)   | 739               | 324               |
| Average nights spent in County | 5.8               | 3.4               |

<sup>18</sup> Fáilte Ireland (2025) Donegal Key Tourism Facts 2024. Available at: [https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202024/FI\\_Key-Tourism-Facts-2024\\_Donegal.pdf?ext=.pdf](https://www.failteireland.ie/FailteIreland/media/WebsiteStructure/Documents/Research/Key%20Tourism%20Facts%20and%20Figures%202024/FI_Key-Tourism-Facts-2024_Donegal.pdf?ext=.pdf)

## 5.3.2.2 Tourism Attractions

There are no key identified tourist attractions pertaining specifically to the Wind Farm Site and BMEP Site.

### 5.3.2.2.1 Tourism Attractions within the surrounding landscape

There are numerous tourist attractions within County Donegal including Donegal Town, Letterkenny, mountain ranges including Mount Errigal and Glenveagh National Park. Many additional tourist attractions are found in the county.

Barnesmore Gap, also known locally as ‘The Gap’ or ‘The Big Gap’, is a deep pass through which the Grid Connection Site runs through. This glacially carved valley acts as a natural corridor through the Blue Stack Mountains, dividing them into two sections, with Croaghconnellagh to the northwest and Barnesmore Mountain to the southeast. The pass is a popular tourist destination.

The Northwest Cycle trail, running for approximately 5 km within the Grid Connection Site. It has a total length of 325 km running from Enniskillen through Sligo, Donegal, Lifford, Strabane to Omagh.

The Discover Ireland website ([www.discoverireland.ie](http://www.discoverireland.ie)) lists the following attractions within the vicinity of the Wind Farm Site and Grid Connection Site:

- › Ardnamona wood nature reserve is a native oak woodland, approximately 456.6 hectares in size which lies approximately 6.3 km southwest of the Grid Connection Site.
- › Lurgybrack Open Farm facilitates a wide range of family activities including open farm and consists of lots of different animals, a riverside walk, duck pond, playground and tearoom located approximately 23.6 km north of the Wind Farm Site.
- › Donegal Craft Village which showcases local artists, jewellers and workshops is located 9.3 km southwest of the Grid Connection Site.
- › Donegal Railway Village, which comprises of railway rolling stock, an interactive railway cab, artefacts, displays, a video and audio presentations, model railways, a reference library and shop is located approximately 7.9 km from the Grid Connection Site.
- › There are a number of coastal boat tours which leave from the Pier on the River Eske in Donegal Town, approximately 8.4 km from the Grid Connection Site.
- › Donegal Castle is a 15th century castle located within Donegal Town, just over 8.2 km southwest of the Grid Connection Site.

The Wind Farm Site and Grid Connection Site is not within any of the strategic tourism areas identified in the DCDP 2018-2024 or 2025-2030 nor does it impact on any of the sites of existing tourism attractions.

The potential for visual effects arising from the Existing Development on the wider landscape and scenic roads is robustly assessed in Chapter 13 LVIA of this rEIAR.

Chapter 14 Cultural Heritage provides details of the cultural heritage of the Wind Farm Site and Grid Connection Site. No National Monuments or those subject to a Preservation Order are located within the Wind Farm Site and Grid Connection Site or within 1 km of the Wind Farm Site and Grid Connection Site. No monuments in State Care in Northern Ireland are located within 1 km of the Existing Development. The nearest monuments in State Care (National Monument No. 174) comprises Donegal Castle which is located over 15 km to the south-west of the Wind Farm Site. The nearest monument subject to a Preservation Order is located approximately 11 km to the north-east of the Wind Farm Site.



## 5.3.3 Health

### 5.3.3.1 Introduction

The assessment of human health for the Existing Development has been undertaken in accordance with the EPA, 2022, the Institute of Environmental Management and Assessment's guide to *Determining Significance for Human Health In Environmental Impact Assessment* (IEMA, 2022) and *Health In Environmental Impact Assessment: A Primer for a Proportionate Assessment* (IEMA, 2017).

### 5.3.3.2 Baseline

Ireland has the highest self-perceived health status in the EU, with 80% of people rating their health as 'good' or 'very good'. Health status reflects income inequality, with fewer low-income earners reporting good health both in Ireland and across the EU<sup>19</sup>.

Table 5-14 below details the general health of persons by percentage for the State, County Donegal and the Population Study Area for the years 2016 and 2022, which have data publicly available. In general, the percentage health breakdown for the State, County and Study Area populations are very similar. The Population Study Area, State and County all reported in the range of 80-90% for a combined 'very good' and 'good' health rating. In 2016, 61.1% of people within the Population Study Area reported that their health was 'very good', whereas in 2022, that figure declined to 54.5%. In 2016, 26.7% of people within the Population Study Area reported that their health was 'good', and in 2022, this figure increased to 32.4%. In 2022, 83% of people in Donegal stated that their health was 'good' or 'very good' compared with 86% in 2016. This is a similar trend to the national figures, which also showed a 4% decrease in the good/very good categories, from 87% to 83%.

Table 5-15 Percentage General Health Breakdown for the State, County Donegal and Population Study Area as reported in the 2016 and 2022 Census. (Source: CSO)

|                       | Very Good |       | Good  |       | Fair |       | Bad  |      | Very Bad |      | Not Stated |      |
|-----------------------|-----------|-------|-------|-------|------|-------|------|------|----------|------|------------|------|
|                       | 2016      | 2022  | 2016  | 2022  | 2016 | 2022  | 2016 | 2022 | 2016     | 2022 | 2016       | 2022 |
| State                 | 59.4%     | 53.2% | 27.6% | 29.7% | 8.0% | 8.6%  | 1.3% | 1.4% | 0.3%     | 0.3% | 3.3%       | 6.7% |
| Donegal               | 56.7%     | 51.7% | 28.9% | 31.0% | 9.8% | 10.6% | 1.5% | 1.6% | 0.3%     | 0.4% | 2.8%       | 4.6% |
| Population Study Area | 61.1%     | 54.5% | 26.7% | 32.4% | 8.8% | 9.62% | 1.3% | 1.3% | 0.3%     | 0.2% | 1.9%       | 2.1% |

As set out in the Department of Housing, Planning, Community and Local Government 'Key Issues Consultation Paper on the Transposition of the EIA Directive 2017' and the guidance listed in Section 1.5.3 of Chapter 1: Introduction, the consideration of the effects on population and on human health should focus on health issues and environmental hazards arising from the other environmental factors, for example water contamination, air pollution, noise, accidents, disasters.

Chapter 8: Land, Soils and Geology, Chapter 9: Hydrology and Hydrogeology, Chapter 10: Air, Chapter 11: Climate, Chapter 12: Noise and Vibration and Chapter 15: Material Assets (Traffic and Transport) provide an assessment of the effects of the Existing Development on these areas of

<sup>19</sup> Department of Health, Government of Ireland (2023) *Health in Ireland – Key Trends 2023*.  
<https://www.gov.ie/pdf/?file=https://assets.gov.ie/285459/9f30e75f-c961-425f-80a9-92ed7bb279b1.pdf#page=null>

consideration. There was the potential for adverse effects on human health from the Existing Development related to potential emissions to air from dust (Section 5.5.8), potential emissions to land and water of hydrocarbons and release of potentially silt-laden runoff into watercourses (Section 5.5.9) and noise emissions (Section 5.5.12). The potential for adverse health effects associated with the Existing Development during the construction phase is considered in Section 5.4 below.

The design and mitigation measures outlined in Chapter 8: Land, Soils and Geology and Chapter 9: Hydrology and Hydrogeology ensured that the potential for impacts on the water environment were not significant. There were no impacts on local water supplies.

### 5.3.3.3 Human Health and Climate Change

The Donegal County Council Local Authority Draft Climate Action Plan 2024–2029<sup>20</sup> (LACAP) outlines a strategic approach to become climate resilient, biodiversity rich, environmentally sustainable and carbon neutral by no later than 2050 by addressing key emissions sectors such as agriculture, residential energy use, and land use.

Overall, the greenhouse gas emissions generated from County Donegal equated to 1,970,000 tCO<sub>2</sub>eq in the baseline year, 2019. The top emitting sectors within the county in terms of total greenhouse gas emissions in the baseline year were Agriculture (39%), Residential and Land Use (21%), and Land Use Change and Forestry (15%). In 2019, Ireland's national emissions totalled 65,152,000 tCO<sub>2</sub>eq, with County Donegal being responsible for approximately 3% of this. Due to its geographical location, County Donegal will see an increase in sea level rise which will place its coastal communities in vulnerable positions to ongoing climate change impacts.

The Met Éireann weather station at Malin Head Co. Donegal, which is located approximately 78 km to the north of the Wind Farm Site, is the nearest weather and climate monitoring station to the Wind Farm Site and Grid Connection Site that has meteorological data recorded for the 30-year period from 1990-2020. The Met Éireann weather station in Clones is located closer to the Wind Farm Site and Grid Connection Site, however this weather station only has data for the 30-year average period from 1978-2007, which has been deemed an inappropriate timescale to determine weather in the existing environment. The wettest months in Donegal are August and October, with March and April being the driest. July is the warmest month with an average temperature of 15.3° Celsius and January is the coldest with an average temperature of 4.4° C.

More recent monthly meteorological data recorded at Finner Camp, Co. Donegal, located approximately 46.5 km to the southwest of the Grid Connection Site, from January 2021 to January 2024 is available at: <https://www.met.ie/climate/available-data/monthly-data>. February 2022 was the wettest month in this time period, with 180.2mm of rainfall recorded, while April 2021 was the driest month with 33.8mm of rainfall. June 2023 was the warmest month in this time period, with a mean monthly temperature of 16.8° Celsius. January 2021 was the coldest month with a mean monthly temperature of 4.2° Celsius.

The Existing Development gave rise to 139,763 tonnes of CO<sub>2</sub> equivalent losses under the expected scenario. This represents the expected and most realistic estimate, based on the Wind Farm Site and Grid Connection Site conditions, the Existing Development footprint, and the materials and spoil volumes generated by the Existing Development. Of this total, losses arising from reduced carbon fixing potential accounted for 1,339 tonnes, or approximately 1.0% of the overall losses. Losses from soil organic matter represented the largest source of emissions, equating to 109,630 tonnes, or approximately 78% of the total expected losses. This includes carbon losses associated with the November 2020 Peat Slide. Losses associated with embodied carbon in construction materials accounted for 18,883 tonnes (14%), while losses associated with construction activities accounted for

<sup>20</sup> Donegal County Council (2024) *Local Authority Climate Action Plan 2024-2029*.  
[https://consult.donegal.ie/en/system/files/materials/792/DCC%20Climate%20Action%20Plan\\_Web.pdf](https://consult.donegal.ie/en/system/files/materials/792/DCC%20Climate%20Action%20Plan_Web.pdf)

9,662 tonnes (7%). Losses associated with traffic and transport movements and pre-construction activities were comparatively minor, contributing 138 tonnes (0.1%) and 111 tonnes (0.1%) respectively.

Under the maximum scenario, total losses were estimated at 322,154 tonnes of CO<sub>2</sub> equivalent, primarily driven by potential losses from soil organic matter, which could have amounted to 291,743 tonnes. The carbon loss calculations presented in the previous paragraph were undertaken in accordance with the precautionary principle and therefore represents a conservative worst-case estimate of the potential carbon losses associated with the Existing Development for the purposes of the rEiAR.

The effects of climate change on human health are identified in the Climate Change Sectoral Adaptation Plan 2019-2024. Identified effects range from increased exposure to ultraviolet radiation, which may give rise to higher rates of skin cancer, air pollution which will aggravate respiratory conditions, and extreme precipitation and flooding which can cause damage to property and result in loss of lives. Figure 5-7 presents a graph of health risks associated with climate change.

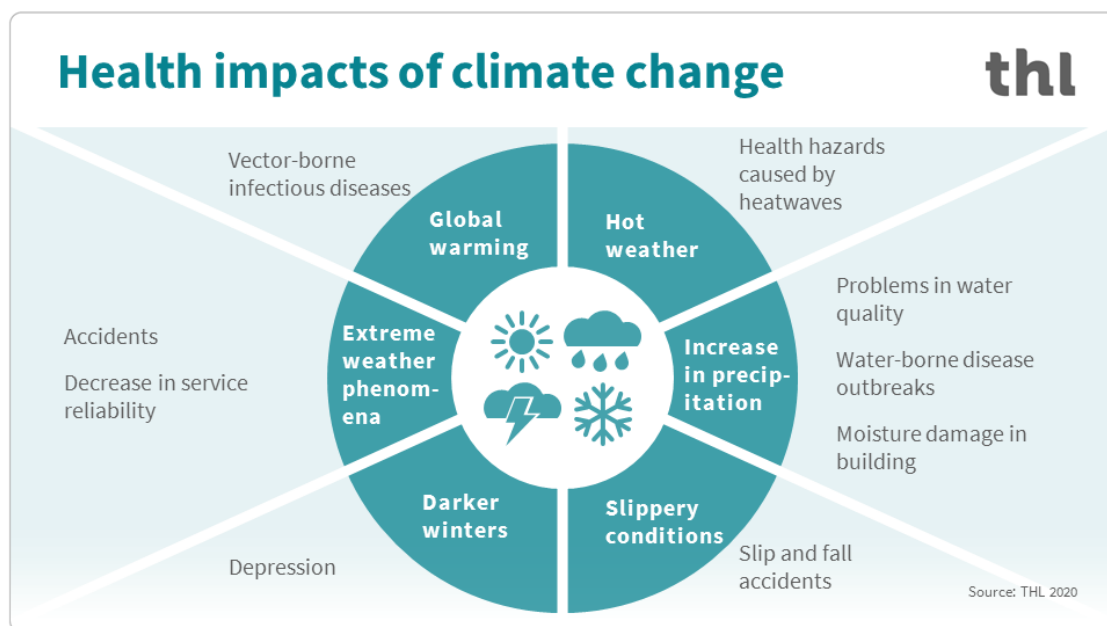


Figure 5-7 Health Impacts of Climate Change (Sourced from the Finnish Institute for Health and Welfare)

These health risks are expected to meet at least two of the following scenarios<sup>21</sup>:

- > The impacts are common;
- > The impacts are serious (even-life threatening) at the individual level, and
- > The adaptation measures have major cost effects.

#### 5.3.3.4 Human Health and Noise

Environmental noise is unwanted and harmful sound created by human activities, including noise emitted by means of transport, road traffic, rail traffic, air traffic and noise in agglomerations over a specified size. Types of noise not included under Directive 2002/49/EC of the European Parliament and of the Council relating to the assessment and management of environmental noise (2002), transposed into Irish law by the European Communities (Environmental Noise) Regulations 2018 (SI No. 549/2018) is noise that is caused by the exposed person, noise from domestic activities, noise created by neighbours, noise at workplaces or noise inside means of transport or due to military activities in military areas.

<sup>21</sup> The Finnish Institute of Health (2020) *Environmental Health*. <https://thl.fi/en/web/environmental-health/climate-and-weather/climate-change>



Baseline noise levels surrounding the Existing Development were measured for the 2017 EIAR. 14 nearby houses were identified as noise-sensitive locations, including 4 that were derelict. The surveys showed that daytime noise levels in the area were generally low, between 40 and 50 decibels, which is typical of a quiet rural setting. There were no significant existing sources of vibration in the area. Overall, these conditions have been used as the baseline for assessing potential effects on population and human health.

Further information on Noise can be found in Chapter 12: Noise and Vibration, which assessed the noise and vibration impacts during the construction phase of the Existing Development. The assessment includes mitigation and monitoring measures that were implemented.

### 5.3.3.5 Human Health and Air Quality

The Air Quality Framework Directive 96/62/EC (CEC, 1996) details how ambient air quality should be monitored, assessed, and managed. The Air Quality Index of Health is based on hourly monitoring data from monitoring stations around Ireland and is based on measurements of five air pollutants which are particularly harmful to human health<sup>22</sup>.

- › Ozone gas
- › Nitrogen dioxide gas
- › Sulphur dioxide gas
- › Particulate Matter (PM<sub>2.5</sub>)
- › PM<sub>10</sub>

Poor air quality is a major health risk, causing lung diseases, cardiovascular diseases and cancer. Particularly vulnerable groups include children, the elderly and citizens with respiratory conditions.

Air pollution can have considerable economic impacts, including high medical costs and undermining productivity through lost working days. The EPA operates two monitoring stations in County Donegal, both located in Letterkenny, approximately 26 km north of the Wind Farm Site.

Air quality surrounding the Existing Development is generally good and typical of a clean, rural environment. The Wind Farm Site and Grid Connection Site is located within EPA Air Quality Zone D, which represents rural areas with little industry or dense traffic. Data from nearby EPA monitoring stations show that concentrations of key pollutants such as sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), carbon monoxide (CO), and ozone (O<sub>3</sub>) are well below national and EU limit values. There are no significant existing sources of air pollution in the vicinity of the Wind Farm Site and Grid Connection Site. Further information pertaining to air quality can be found in Chapter 10: Air.

### 5.3.3.6 Seveso III Sites

The Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the “COMAH Regulations”), implement the Seveso III Directive (2012/18/EU). The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of such accidents, with the overall objective of providing a high level of protection in a consistent and effective manner. There are two categories of major accidents establishments, Upper Tier and Lower Tier. These are defined based on the volume(s) of the dangerous substances present.

<sup>22</sup> EPA (2024) *Air Quality in Ireland: Report 2023*. [https://www.epa.ie/publications/monitoring-assessment/air/Air\\_Quality\\_Report\\_23\\_v13\\_flat.pdf](https://www.epa.ie/publications/monitoring-assessment/air/Air_Quality_Report_23_v13_flat.pdf)

There are no Seveso sites in the surrounding area of the Existing Development nor within the Population Study Area. The closest Seveso site to the Existing Development is European Refreshments (trading as Ballina Beverages) situated on Killala Road, Ballina, Co. Mayo, approximately 97 km southwest of the Grid Connection Site.

### 5.3.3.7 Water Quality

There are no underground water or sewerage networks within the Wind Farm Site. There is a water mains pipeline, including several associated hydrants and valves, that runs along a section of the N15, within the Grid Connection Site. This pipeline begins at Biddys O'Barnes pub at Barnesmore Gap and runs within/parallel to the N15 national road in a south-westerly direction where it re-routes off the N15 onto the L-2595 local road toward Clogher Substation. Along the L-2695 there is a stop-valve and water pipe 'junction' where a different section of pipeline begins and continues along the L-2595 in a southerly direction, passing the junction leading to Clogher Substation.

Regarding groundwater Resources, the Geographical Survey Ireland do not map the presence of any National Federation registered Group Water Schemes (GWS) or Public Water Schemes (PWS) or an associated Source Protection Area (SPA) within the Wind Farm Site and Grid Connection Site or in the surrounding lands. A search of private well locations (accuracy of 1 – 50 m only) was undertaken using the GSI well database ([www.gsi.ie](http://www.gsi.ie)). The GSI database recorded no wells within the Wind Farm Site and Grid Connection Site. The closest well is approximately 16.5 m east of the Grid Connection Site.

Regarding Surface Water Quality, there are no mapped Drinking Water Protected Areas (DWPA) within or immediately downstream of the Wind Farm Site and Grid Connection Site. The closest DWPA is Lough Mourne located upstream of the Wind Farm Site. However, Uisce Éireann abstract water from the Bunadown River within the Wind Farm Site and pump it to Lough Mourne Reservoir (EU Code: IE\_NW\_01\_104), approximately 1.7km to the north. This abstraction is currently not mapped on the online Water Framework Directive (WFD) database ([www.catchments.ie](http://www.catchments.ie)).

The closest DWPA to the Grid Connection Site is Cullionboy Lough (EU Code: IE\_NW\_37\_210) located approximately 370m to the southwest. In the Donegal Bay North Catchment, the Eske\_020 River Water Body (RWB) (EU Code: IE\_NW\_37E050400) upstream of Donegal Town and downstream of Lough Eske is listed as a DWPA, located approximately 4.5 km southwest of the Grid Connection Site.

An information request was submitted to Uisce Éireann to identify any additional water resources within a 5km buffer of the Wind Farm Site. No additional surface water resources were identified. The only abstraction location identified was from Lough Mourne upstream of the Wind Farm Site. Further detail on the impact assessment and mitigation measures of these water resources is provided in Section 9.5 of Chapter 9: Hydrology and Hydrogeology, of this rEiAR.

### 5.3.3.8 Traffic and Transport

The Existing Development gave rise to temporary increases in traffic volumes on the N15 and surrounding local road network during the construction phase, primarily associated with the delivery of construction materials, concrete, plant and equipment to the Wind Farm Site, together with works relating to the Grid Connection. Construction traffic was largely concentrated within the period from November 2019 to November 2020, during which the majority of deliveries to the Wind Farm Site occurred. The peak traffic effects occurred during the 14 concrete foundation pouring days, when approximately 407 additional passenger car units (PCU) movements per day were generated on the N15, representing an increase of approximately 5.7% over the 2018 baseline traffic volumes. During periods when general construction works and Grid Connection works occurred concurrently, approximately 149 additional PCU movements per day were generated, representing a 2.1% increase in traffic volumes on the N15. During periods of general construction only, approximately 97 additional PCU movements per day were generated, equating to a 1.4% increase in traffic volumes. In total,

approximately 3,612 two-way HGV trips were associated with the construction of the Existing Development, in addition to construction employee traffic.

Notwithstanding these temporary increases in traffic volumes, the N15 continued to operate well within its available operational capacity throughout the construction of the Existing Development. The assessed worst-case scenario indicated that the N15 operated at between 53% and 77% of link capacity, remaining below the Level of Service D threshold capacity of 11,600 Average Annual Daily Traffic volumes (AADT). Accordingly, the effects of construction traffic associated with the Existing Development on the operational performance of the road network were assessed as temporary, slight, and negative in nature, but not significant.

Grid Connection works along the N15 and local roads also gave rise to temporary traffic management measures, including stop/go systems, contra-flow arrangements, temporary local road closures, and warning signage. These effects were transient in nature and were managed through the implementation of an agreed Traffic Management Plan (TMP) (TMP is included as an appendix to the 2019 CEMP (rEIAR Appendix 4-3)), road opening licences, temporary traffic signage, local access arrangements, and reinstatement works. Residual effects on traffic and transport were assessed as temporary, slight, and negative, but not significant.

### 5.3.3.9 Vulnerability of the Existing Development to/from Major Accidents and Natural Disasters

The Existing Development is not a recognised source of pollution that would give rise to significant effects on population and human health. Potential sources of pollution that could have resulted in significant environmental effects, such as bulk storage of hydrocarbons, chemicals, or waste storage, were limited during the construction phase. In addition, the risk of pollution was minimised through the implementation of best practice construction controls, including measures set out in this rEIAR and in the 2019 CEMP.

There was limited potential for significant natural disasters to occur at the Wind Farm Site and Grid Connection Site, given Ireland's geologically stable setting and temperate oceanic climate. The principal natural risks relevant to population and human health were therefore limited to flooding, severe weather events, fire, and ground instability. Flooding is addressed in Chapter 9: Hydrology and Hydrogeology.

Major industrial accidents involving dangerous substances pose a potential risk to population and human health; however, the Existing Development is not located in proximity to, or associated with, any SEVESO establishments. The nearest SEVESO site is located approximately 55.5 km from the Grid Connection Site. Accordingly, there was no potential for significant effects arising from SEVESO sites.

The November 2020 Peat Slide occurred during the construction of a permitted access road to T7. The works that were underway at the time of the November 2020 Peat Slide in the area where the peat slide occurred, were fully permitted and were being undertaken in line with the project design that had been subject to both EIA and Appropriate Assessment (AA). Works in response to the November 2020 Peat Slide were undertaken under the supervision of on-site engineers Ionic Consulting (Ionic). The immediate response to the peat slide (emergency works) included the construction of 3 no barrage walls, as well as water and sediment management elements which are described in Chapter 4 of this rEIAR. Subsequent mitigation and revised construction methodologies were implemented to prevent recurrence, as detailed in Chapter 8: Land, Soils and Geology.

Further details on the risk of peat instability, flooding, fire, and other natural hazards are provided in Chapter 16: Major Accidents and Natural Disasters.



### 5.3.4 Property Values

With the exception of the substation, the Existing Development is not visible from outside the Wind Farm Site and Grid Connection Site and has not significantly altered the land use of the Wind Farm Site and Grid Connection Site, comprising the partially constructed Meenbog Wind Farm, areas of commercial forestry and blanket bog, and public roadways. It is therefore a reasonable assumption that the Existing Development has not and will not impact on the property values in the area.

Regarding the construction of the Grid Connection elements, the rolling construction works were primarily within the road corridor, were temporary in duration and localised in nature. Works at any given location along the Grid Connection were for a brief duration only. No permanent land-take was required for residential properties, access to properties was not permanently impacted and the road surface/verge were fully reinstated upon completion, no impacts on property values are considered to have occurred. As such, impacts on property values from the construction of the Existing Development are not considered further in this rEIAR. This is further supported by the 2016 literary review conducted by EirGrid on the effects of high voltage transmission development on patterns of settlement and land use. A total of 31 case studies were chosen; 17 with existing overhead line (OHL) circuits, 10 with substations and 4 in construction. Sites were located in rural, rural/urban and urban areas. Land uses included agricultural, commercial and amenity. Four control sites had no infrastructure. Coexistence, development density, planning policy and planning application history were all investigated. Planning and land use policy over the last twenty years was reviewed to see if it has influenced, or been influenced, by recent programmes of transmission infrastructure development. This study has established no evidence of any significant impact arising from the construction or existence of transmission infrastructure in terms of patterns of settlement and land use, while acknowledging that transmission infrastructure can be a local physical constraint on future development.

### 5.3.5 Residential Amenity

Residential amenity relates to the human experience of one's home, derived from the general environment and atmosphere associated with the residence. The quality of residential amenity is influenced by a combination of factors, including setting and local character, land-use activities in the area and the relative degree of peace and tranquillity experienced in the residence.

The Wind Farm Site is located within a rural, agricultural setting in eastern Donegal, approximately 8km southwest of the twin towns of Ballybofey and Stranorlar and approximately 12km northeast of Donegal Town. Current land-use on the Wind Farm Site comprised of the partially constructed Meenbog Wind farm, areas of commercial forestry and blanket bog, and public roadways. The surrounding land-use predominantly comprises peat bogs, commercial forestry and other seminatural areas with limited residential use along local and public roads.

The Grid connection site extends southwest from the Wind Farm Site for approximately 6 km along the N15 towards Donegal Town before continuing south and east along local roads and through agricultural fields to the Clogher 110kV substation.

The closest distance between a works area and a receptor along the Grid Connection route is noted as 7 metres (H53). The closest distance between the constructed infrastructure within the Wind Farm Site (a segment of constructed internal road in the north of the Wind Farm Site) and a residential Receptor Location (H1) is approximately 70 m.

When considering the amenity of residents in the context of the Existing Development, there are two main potential impacts of relevance: 1) Noise and Vibration, and 2) Visual Amenity. Noise is quantifiable aspects of residential amenity while visual amenity is more subjective. A detailed Noise Impact Assessment has been completed as part of this rEIAR (Chapter 12: Noise and Vibration). A comprehensive landscape and visual impact assessment has also been carried out, as presented in Chapter 14: Landscape, of this rEIAR. Effects on residential amenity during the construction phase of

the Existing Development are assessed in relation to each of these key issues and other environmental factors such as traffic and dust; see effects in Section 5.4.2 below. The effect on residential amenity is then derived from an overall judgement of the combination of effects due changes to land-use and visual amenity, noise, traffic, dust and general disturbance.

## 5.4 Assessment of Significant Effects and Associated Mitigation Measures

The below assessment evaluates the impact (where there was the potential for an impact to occur) on population, employment and investment, land-use, tourism, property values, residential amenity and human health during the construction phase of the Existing Development.

### 5.4.1 ‘Do-Nothing’ Scenario

The ‘Do Nothing’ Scenario is an alternative scenario to retaining and regularising the Existing Development. In this scenario, should the Existing Development not secure substitute consent it will remain in-situ as an unauthorised and partially completed Wind Farm, which is, in effect, the “do nothing” option insofar as it represents the current situation as at the date of the application for Substitute Consent.

There would be no direct negative environmental effects as a result of implementing the “Do Nothing” alternative beyond those that have already occurred and are discussed in the sections below. However, by implementing this ‘Do-Nothing’ alternative, the opportunity to capture a significant part of the country’s renewable energy resource by completing the Meenbog Wind Farm (subject to appropriate planning consents) would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment, local authority development contributions, rates and investment in the local area would also be lost.

### 5.4.2 Existing Development

#### 5.4.2.1 Population

##### 5.4.2.1.1 Population Levels

###### Pre-Mitigation Impacts

Those who worked on the construction of the Existing Development travelled daily to the Wind Farm Site and Grid Connection Site from the wider area. The construction of the Existing Development had no impact on the local population of the area in terms of changes to population trends or density, household size, or age structure.

###### Mitigation and Monitoring Measures

No mitigation required.

###### Residual Effects

The construction phase of the Existing Development did not result in any changes to population trends, density, household size, or age structure within the local area. All workers travelled daily from the wider area. Accordingly, there were no residual effects on population levels following the construction phase.



### Significance of Effects

The effects of the construction activities on population levels during the construction phase of the Existing Development are considered to be Not Significant, as no measurable changes occurred in population size, density, household composition, or age structure.

#### 5.4.2.1.2 **Employment and Investment**

##### Pre-Mitigation Impacts

The design and construction of the Existing Development provided employment for technical consultants and contractors. The construction of the Existing Development employed approximately 80 workers. During the construction phase of the Existing Development, an influx of skilled people in the area brought specialist skills that resulted in the transfer of skills into the local workforce, thereby having a long-term, slight, positive, indirect effect on the local skills base. Up-skilling and training of local staff in the particular requirements of the wind energy industry likely led to additional opportunities for those staff as additional wind farms are constructed in Ireland. Wind Energy Ireland estimates that there were over 5,000 people employed in roles related to wind energy in Ireland in 2023. This figure is anticipated to grow significantly in the coming years as the race to achieve the targets set out in the Climate Action Plan 2025 accelerates.

The injection of money in the form of salaries and wages to those employed during the construction of the Existing Development resulted in an increase in household spending and demand for goods and services in the local area. This would have resulted in local retailers and businesses experiencing a short-term, slight, positive effect on their cash flow.

Overall, it is considered that the construction of the Existing Development had a Short-term, Slight, Positive, Indirect, Effect on employment and investment.

##### Mitigation and Monitoring Measures

No mitigation required.

##### Residual Effects

The effects of the construction phase of the Existing Development on employment and investment are considered to have had a Short-term, Slight, Positive, Indirect Effect.

### Significance of Effects

The effects on employment and investment arising during the construction phase of the Existing Development are considered to be Not Significant.

#### 5.4.2.1.3 **Land Use Patterns & Activities**

##### Pre-Mitigation Impacts

##### Wind Farm Site

The Wind Farm Site measures approximately 892 ha and the footprint of the infrastructure occupies only a small percentage of the Wind Farm Site (3.7%). Land use preconstruction in the Wind Farm Site comprised of ongoing agricultural and forestry practices. The current surrounding land-use predominantly comprises peat bogs, commercial forestry and other seminatural areas with limited residential use along local and public roads.

As part of the works for the Wind Farm Site, tree felling was required within and around the development footprint to allow the construction of turbine bases, access roads, and other ancillary infrastructure. A total of 73.33 ha of forestry has been felled as part of the Wind Farm Site.

The construction within the Wind Farm Site did not have an impact on agricultural and commercial land use in the area. The existing land-uses of agriculture and forestry have continued at the Wind Farm Site. Construction of the Wind Farm Site resulted in a Permanent, Imperceptible, Negative, Effect on forestry practices within the Wind Farm Site during the construction phase.

### **Grid Connection Site**

The land-use preconstruction of the Grid Connection comprised of the N15 National Primary Road and one-off residential housing. During the construction phase, works were largely confined to the defined working corridor and were of short duration at any given location, which limited disruption to surrounding land uses. In the absence of mitigation, there was potential for temporary disturbance associated with construction traffic and noise, with the presence of construction personnel and machinery.

However, with the implementation of the mitigation measures outlined in Sections 5.4.2.2.4 and 5.4.2.2.5 below, these impacts were localised and managed through construction controls and traffic management measures. Construction of the Grid Connection resulted in a Temporary, Imperceptible, Local, Negative Effect on residential/commercial activities surrounding the Grid Connection during the construction phase.

### **Mitigation and Monitoring Measures**

Please see Section 5.4.2.2.4 and Section 5.4.2.2.5 below which outlines the mitigation measures in relation to noise and vibration and traffic. Please refer to Chapter 18 of this rEIAR for a full Schedule of Mitigation and Monitoring Measures

### **Residual Effects**

Due to the small footprint of the Existing Development, on a site scale and even more so on a local scale, it is considered that there was a Temporary to Permanent, Imperceptible, Local, Negative Effect on land use patterns and activities in the surrounding area.

### **Significance of Effects**

The effect on land use/activities due to the construction phase the Existing Development is Not Significant.

## **5.4.2.1.4      *Tourism***

### **Pre-Mitigation Impacts**

#### **Wind Farm Site**

Given that there are currently no tourism attractions specifically pertaining to the Wind Farm Site, there were no direct effects on tourism associated with the construction within the Wind Farm Site.

With regard to tourist attractions and amenity use surrounding the Wind Farm Site, traffic management safety measures were put in place during the construction phase, where required. Please see Section 5.4.2.2.5 below for traffic impact mitigation measures and Section 15.1 of Chapter 15 Material Assets for mitigation measures relating to the Existing Development.

The Existing Development had No Effect on tourism in the surrounding area.

### Grid Connection Site

Barnesmore Gap, also known locally as ‘The Gap’ or ‘The Big Gap’, is a deep pass through which the Grid Connection Site boundary runs. The pass is a popular tourist destination. The Northwest Cycle Trail also runs from the north of the Grid Connection Site along the N15 to the west of the Grid Connection Site. Considering that traffic management safety measures were put in place during the construction phase, where required, the construction of the Grid Connection had No Effect on tourism in the surrounding area.

### Mitigation and Monitoring Measures

With regard to tourist attractions and amenity use surrounding the Existing Development, traffic management safety measures were put in place, where required. Please see Section 5.4.2.2.5 below outlines the mitigation measures in relation to traffic. Please refer to Chapter 18 of this rEiAR for a full Schedule of Mitigation and Monitoring Measures

### Residual Effects

Based on the above, it is concluded that there were no residual effects on tourism in the wider landscape during the construction phase the Existing Development.

### Significance of Effects

The effect on tourism in the wider landscape due to the construction phase of the Existing Development is Not Significant.

## 5.4.2.1.5 **Property Values**

### Pre-Mitigation Impacts

As noted in Section 5.3.4 above, the construction of the Existing Development was not visible from outside the Wind Farm Site and has not significantly altered the land use of the Wind Farm Site. It is a reasonable assumption that the construction of the Existing Development has not impacted on the property values in the area.

As noted in Section 5.3.4 above, the conclusions from available EirGrid studies indicate that there is no evidence of any significant impact arising from the construction or existence of transmission infrastructure in terms of patterns of settlement and land use; however, transmission infrastructure can be a local physical constraint on development.

Due to the temporary nature of the Grid Connection construction activities, it is a reasonable assumption that there was no impact on property values in the area as a result of the construction of the Grid Connection. All works relating to the Grid Connection and road corridor are now completed and is therefore no longer visible and no ongoing impact to property values is occurring.

### Mitigation and Monitoring Measures

- All mitigation outlined in the following chapters: Chapter 10: Air, Chapter 12: Noise and Vibration, Chapter 14: Landscape, and Chapter 15: Material Assets, was implemented. These mitigation measures reduced insofar as possible, impacts on property values at properties located in the vicinity of the Wind Farm Site and Grid Connection Site. Please

refer to Chapter 18 of this rEIAR for a full Schedule of Mitigation and Monitoring Measures.

### Residual Impact

Based on the above, the effect on property values due to the construction phase of the Existing Development was Short-term, Imperceptible and Negative.

### Significance of Effects

The effect on property values due to the construction of the Existing Development was Not Significant.

## 5.4.2.1.6 **Residential Amenity**

### Pre-Mitigation Impacts

#### **Wind Farm Site**

The potential for impacts on residential amenity is discussed in Section 5.3.5 above. There was the potential for impacts on residential amenity during the construction phase within the Wind Farm Site from air, traffic, noise and vibration emissions due to traffic and plant machinery. As described in Section 5.4.2.2.2 below, the effects on air quality from dust and exhaust emissions during the construction phase of the Existing Development are considered to be Not Significant.

Although there were temporary increases in traffic volumes during the construction of the Existing Development, the N15 continued to operate well within its available operational capacity as described in Section 5.3.3.2.6 above. The effects of construction traffic associated with the Existing Development on the operational performance of the road network were assessed as Temporary, Slight, and Negative in nature, but Not Significant. A detailed TMP was prepared and incorporated in the 2019 CEMP.

The Noise and Vibration assessment concludes that during construction, the Existing Development gave rise to noise emissions which at worst, caused a Negative, Temporary and Not Significant to Slight Effect. Overall, the effect is considered Not Significant.

Visual impacts of the Existing Development are mitigated by its location in a sparsely populated and remote location with vegetation and local topography screening views. The substation is the main element of the Existing Development which is visible from visual receptors within the LVIA Study Area (Chapter 13: Landscape, of this rEIAR), albeit at relatively significant distances. There is visibility of the substation from two residential receptors on the N15 as well as intermittent sections on the N15 and from a small stretch on the North-West Cycle Trail along the L-6554. Visual effects of the majority of other components of the Existing Development are localised to the immediate setting of the Wind Farm Site. Overall, the Existing Development resulted in negligible visual change due to the limited visibility of the substation and no perceptible visibility of other infrastructure. Accordingly, the long-term effects on visual amenity were assessed as Not Significant.

While there may have been some minor temporary disturbance due to construction traffic and activity, this was temporary in duration and of slight significance. Given the small scale of works and the remote character of the Wind Farm Site, the overall impact on residential amenity was negligible.

#### **Grid Connection Site**

The potential for impacts on residential amenity is discussed in Section 5.3.5 above. There was the potential for impacts on residential amenity during the construction phase of the Grid Connection from air, traffic, noise and vibration emissions due to traffic and plant machinery. As outlined in Section



5.5.2.2.2, the construction phase of the Existing Development had No Significant Effects on air quality from dust or exhaust emissions.

Grid Connection works along the N15 and local roads gave rise to temporary increases in traffic volumes, however, traffic management measures, including stop/go systems, contra-flow arrangements, temporary local road closures, and warning signage were in place for the duration of the construction of the Grid Connection. These effects were transient in nature and were managed through the implementation of an agreed Traffic Management Plan (TMP) (TMP is included as an appendix to the 2019 CEMP (rEIAR Appendix 4-3)), road opening licences, temporary traffic signage, local access arrangements, and reinstatement works. The effects of construction traffic associated with the Existing Development on the operational performance of the road network were assessed as Temporary, Slight, and Negative in nature, but Not Significant.

The Noise and Vibration assessment found that construction-related noise produced, at most, a Temporary, Negative Effect, which is considered Not Significant. Overall, the Existing Development did not result in adverse effects on the local population or human health.

During construction, landscape and visual effects associated with the Grid Connection are deemed to be a Long-term, Negative Effect of Imperceptible Significance. While under construction, temporary 'Negative' effects of 'Imperceptible' significance occurred associated with road openings and construction teams present along the route.

### Mitigation and Monitoring Measures

All mitigation is outlined in the corresponding chapters: Chapter 10 Air Quality, Chapter 12 Noise and Vibration, Chapter 13 Landscape, and Chapter 15 Material Assets and were implemented in order to reduce insofar as possible, impacts on residential amenity at properties located in the vicinity of the Existing Development construction works. Please refer to Chapter 18 of this rEIAR for a full Schedule of Mitigation and Monitoring Measures.

### Residual Impact

It is concluded that residential amenity was subject only to Temporary, Slight, Negative Effects during construction. No significant residual impacts on residential amenity occurred.

### Significance of Effects

The effect on residential amenity due to the construction of the Existing Development was Not Significant.

## 5.4.2.1.7 **Summary of Effects**

Section 5.4.2.1 above assess the potential significant effects on population during the construction of the Existing Development. Based on the assessment of the relevant topics above, the construction of the Existing Development did not result in any significant effects on population. The overall effect on population as a result of the Existing Development is Not Significant.

## 5.4.2.2 Health

The following impact assessment is produced in accordance with the guidance set out in 5.1.3.

### 5.4.2.2.1 Health and Safety

#### Pre-Mitigation Impacts

##### Wind Farm Site

Construction within the Wind Farm Site necessitated the establishment of a construction site and the use of the local public road network for access. Construction sites and associated plant and machinery posed potential health and safety risks to construction workers if site safety protocols were not properly implemented. Construction workplaces by their nature present many health and safety hazards, such as moving heavy equipment, delivery loads, electricity supply, uneven ground, working at heights, confined spaces, working with caustic materials (concrete) and others. Incidents can occur which can result in impacts on the health and wellbeing of the workforce and people accessing the construction site. In the absence of mitigation, this could have had in a worst-case scenario, a potential Significant, Permanent, Negative Effect on health and safety.

However, health and safety risks during construction were managed through the implementation of control measures set out in the 2019 CEMP (Appendix 4-3) which were followed throughout the construction of the Existing Development. During construction there were two Health and Safety Authority (HSA) site inspections (11 June 2020 and 18 November 2020), and no reportable accidents occurred. Therefore, the construction phase of the Wind Farm had no adverse impact on health and safety.

No contractor construction related incidents, which resulted in injury to workers on-site or to incidents with potential to cause injury, occurred during the construction period. The November 2020 Peatslide, which occurred during the construction of the wind farm, resulted in damage to the Wind Farm Site infrastructure. However, no injury or loss of life occurred. To mitigate against serious accidents and health impacts, the Wind Farm Site operated under Health & Safety Plans.

##### Grid Connection

Construction of the Grid Connection similarly required the use of local public roads and on-site machinery, which presented potential health and safety risks to construction workers if safety measures were not enforced. In the absence of mitigation, this could have had in a worst-case scenario, a potential Significant, Permanent, Negative Effect on health and safety.

However, health and safety risks during construction were managed through the implementation of control measures set out in the 2019 CEMP (Appendix 4-3) which were followed throughout the construction of the Grid Connection. No contractor construction related incidents, which resulted in injury to workers on-site or to incidents with potential to cause injury, occurred during the construction period. To mitigate against serious accidents and health impacts, the construction of the Grid Connection operated under Health & Safety Plans. Accordingly, there were no health and safety impacts associated with the Grid Connection.

#### Mitigation and Monitoring Measures

The Existing Development was constructed in accordance with all relevant Health and Safety Legislation, including:

- › Safety, Health and Welfare at Work Act 2005 (No. 10 of 2005);

- › Safety, Health and Welfare at Work (General Application) (Amendment) Regulations 2016 (S.I. No. 36 of 2016);
- › Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2006;
- › Safety, Health and Welfare at Work (Work at Height) Regulations 2006 (S.I. No. 318 of 2006).

To mitigate against the effect of the November 2020 Peatslide, 3 no. barrage walls were constructed down along the course of the slide to stop the movement of any additional peat. In addition, all construction works on the Wind Farm Site were halted. Water and sediment management elements were implemented on-site also.

Additional remedial and mitigation measures were also developed for the construction activities post the November 2020 Peatslide which included geotechnical investigations and assessments, monitoring of the Wind Farm Site and Grid Connection Site, drainage improvements, and tree felling management. Please refer to Chapter 18 of this rELAR for a full Schedule of Mitigation and Monitoring Measures

### Residual Impact

Construction of the Existing Development was managed by the 2019 CEMP (Appendix 4-3) and the Existing Development operated under Health and Safety Plans. All relevant Health and Safety legislation was complied with. No contractor construction-related incidents occurred during the construction phase that resulted in injury to on-site workers or had the potential to cause injury. In addition, there were no incidents that resulted in any health and safety impacts to members of the public. There was therefore no residual effect on Health and Safety as a result of the Existing Development.

### Significance of Effects

Based on the assessment above the effects on health and safety during the construction phase of the Existing Development are considered to be Not Significant.

## 5.4.2.2.2 **Air Quality: Dust and Exhaust Emissions**

### Pre-Mitigation Impacts

Dust and exhaust emission sources during the construction of the Existing Development included upgrading of existing access tracks and construction of new access roads, borrow pits, peat storage cells and temporary construction compounds as well as construction activities associated with the Grid Connection.

Emissions arose from vehicle and plant movements within the Wind Farm Site, including Light Goods Vehicles (LGVs) transporting staff and machinery. Furthermore, the entry and exit of staff and construction vehicles from the Wind Farm Site had the potential to result in the transfer of mud to the public road, particularly if the weather was wet, and would generate dust as it dried. An increase in dust and exhaust emissions had the potential to cause a nuisance to sensitive receptors and road users in the immediate vicinity of the Wind Farm Site. There are no High Sensitivity Receptors located within 250 m of the construction footprint within the Wind Farm Site, with the nearest being 800m from the footprint. In the absence of mitigation, these impacts had the potential to cause a Short-term, Slight, Negative Effect on air quality, which is considered Not Significant.

Exhaust emission sources during the construction of the Grid Connection arose from vehicle and plant movements, including transporting staff and machinery. The entry and exit of construction vehicles along the L-2595, L-1985, and L-19825 had the potential to transfer mud to the public road, particularly

during periods of wet weather. As with the Wind Farm Site, this could have caused nuisance to residents and road users through the generation of dust as it dried. There is a total of 41 no. High Sensitivity Receptors within 250m of the grid connection construction footprint. The overall sensitivity of the area to dust soiling effects is Low-Medium and the effects of PM<sub>10</sub> on the health of these Sensitive Receptors in the surrounding area is Low as detailed in section 10.3.2.2 Chapter 10 Air Quality.

In the absence of mitigation, these impacts had the potential to cause a Temporary, Slight to Moderate, Negative Effect on air quality. Dust and exhaust emission impacts from the construction of the Existing Development are further described in Chapter 10: Air Quality.

### Mitigation Measures

The following mitigation measures were implemented during the construction of the Existing Development. Please refer to Chapter 18: Schedule of Mitigation and Monitoring Measures for a full list of measures.

- › A CEMP was in place and followed throughout the construction phase (Refer to Appendix 4-3 for the 2019 CEMP).
- › The designated public roads outside the Wind Farm Site and Grid Connection Site and along the main transport routes were regularly inspected by the Ecological Clerk of Works (ECoW) for cleanliness and cleaned as necessary.
- › All construction related traffic had speed restrictions in place on un-surfaced roads to 20 kph. Construction traffic was restricted to defined routes on the public road network.
- › Daily inspections of the Wind Farm Site and Grid Connection Site was undertaken to examine dust measures and their effectiveness.
- › When necessary, sections of the haul route were swept using a truck mounted vacuum sweeper.
- › Water bowsers operated on-site as required to mitigate dust in dry weather conditions.
- › The transport of soils or other material, which had potential to cause dust, was undertaken in tarpaulin-covered vehicles where necessary.
- › All construction machinery was maintained in good operational order while on-site, minimising any emissions that were likely to arise.

### Residual Impacts

The dust soiling impact during the construction of the Existing Development is considered to have been a brief, intermittent, imperceptible to slight negative and local effect, given that dust-generating activities would have been limited to specific periods of the works and would not have occurred continuously throughout the duration of construction phase

With the implementation of the mitigation measures discussed above the residual effect on air quality as a result of exhaust and dust emissions was at worst a short term, slight, negative effect with is not considered to be significant.

### Significance of Effects

The effects on air quality from dust and exhaust emissions during the construction phase of the Existing Development are considered to be Not Significant.



### 5.4.2.2.3 Water Quality

#### Pre-Mitigation Impacts

##### Wind Farm Site

Potential health effects associated with construction within the Wind Farm Site primarily related to the potential for surface water and groundwater contamination, which could have adversely affected public or private water supplies. There are no downgradient public or group scheme groundwater supplies which may have been impacted by the Existing Development. As stated in Chapter 9: Hydrology and Hydrogeology, an assessment of private wells within 1 km of the Wind Farm Site identified 4. no dwellings (three inhabitable and one derelict), with the closest occupiable dwelling located approximately 70 m from the Existing Development footprint. Given the local hydrogeological conditions, including low permeability subsoils, a Poor Bedrock Aquifer, and short groundwater flowpaths with local discharge to surface waters, the potential for effects on private water supplies was considered negligible.

During the construction of the Existing Development, minor peat instabilities had the potential to release suspended solids into downstream surface watercourses. However, any negative effects would have been brief and the available water quality data does not record any significant effects on downstream surface water quality as a result of the minor peat failures. Any residual effects on surface water quality due to the minor peat failures were therefore, at worst, a negative, indirect, imperceptible and a brief effect, which is Not Significant.

A significant effect on surface water quality and stream morphology occurred due to the November 2020 Peatslide but these effects were short term and there were no significant negative effects in the long term as described in Section 9.5.1.1.4 of Chapter 9: Hydrology and Hydrogeology. Following the November 2020 Peatslide, emergency response procedures were implemented in accordance with the 2019 CEMP. These emergency response procedures included the installation of barrage walls downslope of the peatslide to prevent further movement of peat. Restoration works were also completed in an attempt to restore the hydrological regime insofar as possible. Restoration works were carried out to the Shruhargarve stream in response to a notice issued by Donegal County Council (DCC) dated 17<sup>th</sup> November issued under Sections 12 (1) of the Local Government (Water Pollution) Acts, relating to the discharge of peat, sediment, and heavily soiled water from the Wind Farm Site to the Shruhargarve stream and Mourne Beg River. Monitoring undertaken following these works demonstrated recovery in downstream water quality and no significant long-term effects on water resources.

Any deterioration in surface water quality associated with the Existing Development could have had a negative effect on the Lough Mourne drinking water supply. However, no pollution events occurred during the construction phase. Monthly water quality sampling indicates that there has been no deterioration in water quality from the pre-construction condition. EPA monitoring data indicates that, based on biological factors, that there has been no deterioration in water quality. No significant effects on downstream surface water abstractions occurred.

Flooding of property can result in exposure to contaminated flood water which can carry waterborne disease and contamination/effluent. Exposure to such flood waters can cause temporary health issues. A detailed Flood Risk Assessment (Appendix 9-1) has also shown that the risk of the Existing Development contributing to downstream flooding is very low, as the long-term plan for the Wind Farm Site is to retain and slow down drainage water within the Wind Farm Site.

Overall, no significant adverse effects on population or human health arising from water quality, water supply, or flood risk were identified.

## Grid Connection Site

Potential health effects associated with the construction of the Grid Connection primarily related to the potential for surface water and groundwater contamination due to sediment entrainment or hydrocarbon leakage from construction machinery or plant, which could have adversely affected public or private water supplies. There are no downgradient public or group scheme groundwater supplies within the Grid Connection Site or in surrounding lands which may have been impacted by the construction of the Grid Connection. Mitigation measures regarding key temporary drainage measures which were implemented prior to the commencement of cable trenching or crossing works are described below.

Horizontal Directional Drilling (HDD) was employed at 3 no. locations along the Grid Connection (Lowerymore Bridge, Lower Keadew Bridge and Barnesmore Bridge). HDD was completed at these locations to prevent direct impacts on the watercourse. However, there would have been a risk of indirect impacts from sediment laden runoff during the launch pit and reception pit excavation works. There was also an unlikely risk of fracture blow out and contamination of the watercourse with drilling fluid. However, no pollution incidents occurred at the HDD crossing locations, and no significant effects on surface water quality occurred as a result of the HDD. Mitigation measures used during HDD works are described below.

## Mitigation and Monitoring Measures

### Wind Farm Site

Emergency measures that were implemented following the November 2020 Peatslide are described in detail in Chapter 9: Hydrology and Hydrogeology of this rEIAR.

The majority of the Existing Development is located outside of the delineated 50m natural watercourse (river and stream) buffer zones. Silt fences were installed as an additional water protection measure around existing watercourses in certain locations, particularly where works occurred within the hydrological buffer zone. The silt fences were installed as single, double or triple silt fences depending on the space available and the anticipated loading. The large setback distance from sensitive hydrological features meant that adequate room was maintained for the drainage mitigation measures to be properly installed and operate effectively.

The mitigation measures implemented to avoid release of hydrocarbons at the Wind Farm Site were as follows:

- › All plant was inspected and certified to ensure that they were leak free and in good working order prior to use.
- › Wherever possible, vehicles were refuelled off-site, particularly for regular road-going vehicles.
- › On-site refuelling of machinery was carried out at designated refuelling areas at various locations throughout the Wind Farm Site.
- › Heavy plant and machinery were refuelled on-site by a fuel truck that came to the Wind Farm Site as required on a scheduled and organised basis.
- › Other refuelling was carried out using mobile double skinned fuel bowser.
- › All refuelling was carried out outside designated watercourse buffer zones.
- › Only designated trained and competent operatives were authorised to refuel plant on-site.
- › Mobile measures such as drip trays and fuel absorbent mats were used during refuelling operations as required. However, no spills were recorded during the construction of the Existing Development.
- › All plant and machinery were equipped with fuel absorbent material and pads to deal with any event of accidental spillage.
- › An emergency plan for the construction phase to deal with accidental spillages was included within the 2019 CEMP (Appendix 4-3).

## Grid Connection Site

The following mitigation measures were implemented at Grid Connection underground cabling watercourse crossing works:

- › A double silt fence perimeter was placed along the road verge on the down-slope side of works areas located inside the watercourse 50m buffer zone;
- › No stockpiling of construction materials occurred along the Grid Connection route;
- › No refuelling of machinery or overnight parking of machinery was permitted inside the watercourse 50m buffer zone areas;
- › No concrete truck chute cleaning was permitted;
- › Works during periods of high rainfall were avoided;
- › Machinery deliveries were arranged using existing structures along the public road;
- › All machinery operations took place away from the stream and ditch banks, apart from where crossings occur;
- › Any excess construction material was immediately removed from the area and sent to a licenced waste facility or on-site borrow pits;
- › Spill kits were available in each item of plant required to complete the works; and,

The following mitigation measures were adhered to within the Grid Connection Site where HDD was implemented:

- › The crossing works areas were clearly marked out with fencing or flagging tape to avoid unnecessary disturbance;
- › There was no storage of material / equipment or overnight parking of machinery inside the hydrological buffer zone;
- › Before any ground works are undertaken, double silt fencing was placed upslope of the watercourse channels;
- › The area around the batching, pumping and recycling plant was bunded using terram (as it would have clogged) and sandbags in order to contain any spillages;
- › Drilling fluid returns were contained within a sealed tank / sump to prevent migration from the works area;
- › Spills of drilling fluid were cleaned up immediately and contained in an adequately sized skip before been taken off-site;
- › The discharge of water onto vegetated ground was via a silt bag which filtered any remaining sediment from the pumped water. The entire percolation area was enclosed by a perimeter of double silt fencing;
- › Any sediment laden water from the works area was not discharged directly to a watercourse or drain;
- › Works during periods of high rainfall were avoided;
- › Daily monitoring of the works area, the water treatment and pumping system and the percolation area was completed by the ECoW. All necessary preventative measures were implemented to ensure no entrained sediment, or deleterious matter was discharged to the watercourse;
- › On completion of the works, the ground surface disturbed during the site preparation works and at the entry and exit pits was carefully reinstated at the soonest opportunity to prevent soil erosion;
- › The silt fencing upslope of the river was left in place and maintained until the disturbed ground had re-vegetated; and,
- › All plant was checked for purpose of use prior to mobilisation at the watercourse crossing.

## Residual Impact

The residual effect is assessed as Temporary, Slight, Negative, and Indirect.

## Significance of Effects

The effects on water quality during the construction phase of the Existing Development are considered to be Not Significant.

### 5.4.2.2.4 Noise and Vibration

#### Pre-Mitigation Impact

##### Wind Farm Site

There was an increase in noise levels in the vicinity of the Wind Farm Site as a result of heavy machinery and construction work during the construction phase of the Wind Farm. Construction noise at any given receptor were variable throughout the construction phase, depending on the activities underway and the distance from the main construction activities to the receiving properties. In the absence of mitigation, there was the potential to cause a Short-term, Slight, Negative Effect on sensitive receptors located closest to the Wind Farm Site.

The Noise and Vibration assessment concludes that during construction, the Existing Development gave rise to noise emissions which at worst, caused a Temporary, Slight, Local Negative Effect. It follows that the Existing Development did not give rise to adverse effects on the local population or on human health. A series of mitigation measures to reduce any impact is provided below.

Noise impacts during the construction phase of the Existing Development are further described in Chapter 12: Noise and Vibration.

##### Grid Connection Site

There was an increase in noise levels in the vicinity of the Grid Connection as a result of heavy machinery and construction work during the construction phase of the Grid Connection. Construction noise at any given receptor were variable throughout the construction phase, depending on the activities underway and the distance from the main construction activities to the receiving properties. In the absence of mitigation, there was the potential to cause a Temporary, Slight, Negative Effect on sensitive receptors located closest to the Grid Connection.

The Noise and Vibration assessment concludes that during construction, the Existing Development gave rise to noise emissions which at worst, caused a Temporary, Slight, Local Negative Effect. It follows that the Existing Development did not give rise to adverse effects on the local population or on human health. A series of mitigation measures to reduce any impact is provided below.

Noise impacts during the construction phase of the Existing Development are further described in Chapter 12: Noise and Vibration.

#### Mitigation and Monitoring Measures

Best practice measures for noise control as set out in the 2019 CEMP (Appendix 4-3) were adhered to on the Wind Farm Site and Grid Connection Site during the construction phase of the Existing Development. Please refer to Chapter 18: Schedule of Mitigation and Monitoring Measures for a full list of measures.

- › No plant used on-site was permitted to cause an on-going public nuisance due to noise.
- › The best means practicable, including proper maintenance of plant, were employed to minimise the noise produced by on-site operations.
- › All vehicles and mechanical plant were fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.



- › Compressors were attenuated models fitted with properly lined and sealed acoustic covers which were kept closed whenever the machines are in use and all ancillary pneumatic tools shall be fitted with suitable silencers.
- › Machinery that was used intermittently was shut down or throttled back to a minimum during periods when not in use.
- › Any plant, such as generators or pumps, which was required to operate before 07:00hrs or after 19:00hrs was surrounded by an acoustic enclosure or portable screen.
- › The hours of construction activity were limited to avoid unsociable hours where possible. Construction operations was generally restricted to between 7:00hrs and 19:00hrs weekdays and between 7:00hrs and 19:00hrs on Saturdays. However, works occurred outside of these hours on occasions where critical periods within the construction programme (e.g. concrete pours) and optimal weather aligned.

### Residual Impact

With the implementation of the above mitigation measures, there was a temporary, imperceptible negative effect on health due to a slight increase in noise levels during the construction phase of the Existing Development.

### Significance of Effects

For the reasons outlined above, the effects on human health due to noise emissions from the Existing Development during construction were not significant.

#### 5.4.2.2.5 **Traffic and Transport**

As detailed in Section 15.2.12 of this rEIAR, the construction of the Existing Development did not result in any significant effects on traffic volumes or road users. Construction traffic was comprised of Heavy Goods Vehicle (HGV) and LGV movements involved in the delivery of construction materials to the Wind Farm Site and Grid Connection Site and the export of excess construction materials and plant from the Wind Farm Site and Grid Connection Site. The N15 adjacent to the Wind Farm Site and Grid Connection Site has operated well below capacity throughout the period when traffic was generated by the Existing Development.

During the construction of the Grid Connection, temporary diversions and stop/go contra-flow systems were required for local traffic, as discussed in Section 15.2.11 of this rEIAR. The traffic volumes that were impacted on the local road network, other than on the N15, were low. Therefore, by its nature the effects of these additional trips and diversions on the network were transient, and are therefore considered to have been temporary, and slightly negative. The effects were Not Significant.

### Mitigation Measures

Mitigation measures associated with traffic and transport are set out in Section 15.2.12 of this rEIAR and are summarised below:

A detailed TMP was prepared and incorporated in the 2019 CEMP. The Existing Development was constructed with this CEMP in place. Refer to Appendix 4-3 of this rEIAR. The TMP included the following measures that were in place during the construction of the Existing Development:

- › Pedestrians and cyclist were accommodated along the primary and secondary diversion routes. Operatives were made aware to watch out for oncoming pedestrians / cyclists and to advise them accordingly.
- › Traffic Management Coordinator – a competent Traffic Management Co-ordinator was appointed prior to and during the construction of the Existing Development who was the main point of contact for all matters relating to traffic management.

- › Information to locals – when required, locals in the area were informed of any traffic related matters e.g. temporary lane/road closures via letter drops and posters in public places. An "out of hours" emergency number was also be provided.
- › Gardai were advised of the intended works to be carried out prior to commencement on the Gardai Consultation form. Emergency services using the local roads were made priority and areas where the works are being carried out were covered immediately with road plates so as to allow access.
- › A Pre-Construction Condition Survey – A pre-condition survey of roads was carried out prior to construction commencement to record the condition of the road.
- › Travel plan for construction workers –The construction company provided a travel plan for construction staff, which included the identification of a routes to / from the site.
- › Temporary traffic signs – As part of the traffic management measures temporary traffic signs were put in place at all key junctions, including the access junction on the N15, in accordance with the “Traffic Signs Manual, Section 8 – Temporary Traffic Measures and Signs for Road Works” (DoT now DoTT&S) and “Guidance for the Control and Management of Traffic at Roadworks” (DoTT&S). A member of construction staff (flagman) was present at key junctions during peak delivery times.
- › The entire traffic management system was set up prior to any works commencing.
  - Only approved signs were used along the works area.
  - All signs were clean and clearly visible.
  - Once signs were in place the route was assessed to ensure adequate visibility for drivers and pedestrians.
  - All signs were secured and weighted down where appropriate.
  - At the end of each day the excavation was back filled and all materials was removed from the roadside.
  - Where flag men were required, both flag men, the foreman and guarding officer all communicated via two-way radios.
- › Additional measures - Various additional measures were in place in order to minimise the effects of the development traffic on the surrounding road network including sweeping / cleaning of local roads where required.
- › Road Opening Licence – Roads works associated with the grid connection cabling were undertaken in line with the requirements of a road opening licence as agreed with Donegal County Council.
- › Trench Reinstatement - Trenches on public roads were reinstated and an agreed surface overlay to the satisfaction of the roads authority.

## Residual Impact

With the implementation of the above mitigation measures, there was a short term, imperceptible, neutral effect on human health due to a short term, slight, negative effect on traffic levels during the construction of the Existing Development.

## Significance of Effects

For the reasons outlined above, the effects on human health due traffic from the Existing Development during construction were not significant.

### 5.4.2.2.6 **Major Accidents and Natural Disasters**

Chapter 16 of this rEIAR describes the effects on the environment arising from the vulnerability of the Existing Development to risks of major accidents and/or natural disasters, as well as the potential of the Existing Development itself to have caused potential major accidents and/or natural disasters.

Major accidents or natural disasters are hazards which would have had the potential to affect the Existing Development and led to environmental effects directly or indirectly, or the potential for the

Existing Development to have caused environmental effects. These include accidents that could have occurred during construction of the Existing Development caused by operational failure and/or natural hazards.

A risk register has been developed which contains all potentially relevant risks identified during the construction phase of the Wind Farm Site. Seven potential risks (Severe Weather, Flooding, Peat Stability, Traffic Incident, Contamination, Fire/Explosion, Collapse/Damage to structures) specific to the construction of the Existing Development have been identified and are presented in Chapter 16: Major Accidents and Natural Disasters, as outlined in 16.4.1 of this rEIAR. Whilst seven potential risks were identified, only one of these risks was actually realised when the November 2020 Peatslide occurred.

There was no injury, loss of life or near miss incident to members of the public or construction staff during or following the November 2020 Peatslide. No households were evacuated and no impacts occurred to any public road, utilities, or infrastructure.

Furthermore, the November 2020 Peat Slide did not lead to any disruption to the functioning of the community or wider society.

An assessment of the site with respect to peat stability was conducted by Fehily Timoney (Appendix 8-5 2026 Peat Stability Assessment Report: Meenbog Wind Farm (Existing Development)). The Fehily Timoney report concludes that the as constructed works associated with the Meenbog Wind Farm are currently stable and that it is considered that there is no ongoing risk of peat failure on the Wind Farm Site from the Existing Development. Refer to Appendix 8-5 Peat Stability Assessment Report: Meenbog Wind Farm (Existing Development).

### Mitigation Measures

- An emergency response plan was put into action in response to the November 2020 Peat Slide as set out in the 2019 CEMP.

Please refer to Chapter 18 Schedule of Mitigation and Monitoring Measures which details all mitigation and monitoring measures that were implemented during the construction of the Existing Development.

### Residual Effects

With the implementation of the emergency response plan and other mitigation measures discussed in Chapter 18 of this rEIAR there were no residual effect on Human Health as a result of Major Accidents and Natural Disasters

### Significance of Effects

Whilst peat slides that occurred during the construction of the Existing Development did result in negative effects on wind farm infrastructure and the environment, the implementation of the emergency response plan meant that there were no significant effects on human health.

As discussed in Chapter 16 of this rEIAR, there was no injury, loss of life or near miss incident to members of the public or construction staff during or following the peat slide events. No households were evacuated and no impacts occurred to any public road, utilities, or infrastructure. As discussed above in Appendix 8-1 Peat Stability Assessment Report of this rEIAR, it is considered there is no ongoing risk of peat failure on the Wind Farm Site from the Existing Development. The likelihood of a landslide due to the Existing Development impacting 'People' is 'Low' with a Slight Significance of Effects.

## 5.4.2.2.7 Summary of Effects

Section 5.4.2.2 above assess the potential significant effects on health during the construction of the Existing Development. Based on the assessment of the relevant topics above, the construction of the Existing Development did not result in any significant effects on health. The overall effect on health as a result of the Existing Development is Not Significant.



## 5.5 Cumulative Effects – Existing Development

For the assessment of cumulative effects, any other projects (wind energy or otherwise) that were extant or under construction at the same time as the Existing Development have been considered. Further information on projects considered as part of the cumulative assessment and cumulative assessment methodology are in Section 2.10 of Chapter 2: Background and Policy of this rEiAR.

The impacts with the potential to have cumulative effects on population and human health, in particular noise, air quality, climate, traffic, and visual impacts are addressed in their relevant chapters of this rEiAR.

### 5.5.1 Population Levels

The Existing Development did not result in any changes to population trends, density, household size, or age structure within the local area. Therefore, when considered alongside other proposed, planned or permitted projects, there has been no cumulative effect on the population of the area in terms of changes to population trends or density, household size or age structure.

### 5.5.2 Employment and Investment

The construction of the Existing Development had a Short-term, Slight, Positive, Indirect, Effect on employment and investment. Cumulative projects in the vicinity of the Existing Development which were existing at the time of construction likely contributed to short term employment and provided the opportunity for employment resulting from construction operations. This resulted in a short-term, slight positive cumulative effect.

### 5.5.3 Land Use Patterns

It is considered that the Existing Development alongside other proposed, planned or permitted projects at the time of construction had no cumulative effect on land use patterns in the surrounding area due to the small footprint of the Existing Development on a site scale and even more so on a local scale.

### 5.5.4 Tourism

There are no key identified tourist attractions pertaining specifically to the Wind Farm Site and Grid Connection Site.

It is not considered that the Existing Development together with other projects in the area had a cumulative effect on any tourism infrastructure in the wider area. Wind farms and construction sites were an existing feature in the surrounding landscape, which assisted in the assimilation of the Existing Development into this environment. As also noted in Section 5.4.2.1.5 above, the conclusions from available research indicate there is a generally positive disposition among tourists towards wind development in Ireland.

As stated in Chapter 13: Landscape, due to the localised nature of the Existing Development, there was no significant interaction between the Existing Development and other developments outside the Wind Farm Site and Grid Connection Site from a landscape and visual perspective. It is considered that there was no significant cumulative effects on tourism as a result of the Existing Development.

### 5.5.5 Property Values

As noted in Section 5.4.2.1.5 above, it can be concluded that there was the potential for a short-term, negative, imperceptible, not significant effect on property values within the vicinity of the Grid

Connection Site. However, access to properties was not impacted and the road surface/verge were fully reinstated upon completion, no impacts on property values are considered to have occurred. On that basis, it is concluded that there were no cumulative effects on property values from the Existing Development when considered in combination with other relevant projects.

### 5.5.6 Residential Amenity

All mitigation as outlined under noise and vibration, air quality, traffic, and visual amenity in this rEIAR were implemented in order to reduce insofar as possible effects on residential amenity at properties located in the vicinity of the Existing Development works.

It is also assumed that all mitigation measures in relation to the other cumulative projects was also implemented. Additionally, there was no significant interaction between the Existing Development and other developments outside the Wind Farm Site and Grid Connection Site from a landscape and visual perspective.

Based on the assessment in Section 5.4.2.1.5, it is concluded that residential amenity was subject only to temporary, slight, negative effects during construction. No significant residual impacts on residential amenity occurred. On this basis it is concluded that there were no significant cumulative effects on residential amenity from the Existing Development in combination with other projects in the vicinity.

### 5.5.7 Health and Safety

The Existing Development had no effect in terms of health and safety. On this basis that it can be concluded that there was no potential for cumulative effects from the Existing Development and other developments in the area.

### 5.5.8 Air Quality: Dust and Exhaust Emissions

There were minor exhaust emissions from construction plant and machinery and minor dust emissions associated with the construction activities during the construction of the Existing Development. There were also likely minor exhaust and dust emissions associated with other permitted projects within 20 km of the Existing Development. However, once the mitigation proposals, as outlined in Section 10.3.2.1 to Section 10.3.2.2 of Chapter 10 Air Quality were implemented during the construction phase of the Existing Development, there was no significant negative effect on air quality.

Therefore, considering the minor effects of the Existing Development, and its remote location from other project, it is considered that there were no significant cumulative effects on air quality, associated with other projects when considered in combination with the Existing Development.

### 5.5.9 Water Quality

The Existing Development had no significant effects on public or private water supplies. Furthermore, a detailed Flood Risk Assessment (Appendix 9-1) has also shown that the risk of the Existing Development contributing to downstream flooding is very low and on-site drainage control measures will ensure no downstream increase in flood risk. Therefore, the Existing Development has had no significant effect on water quality such that it would impact population or human health.

The planning applications identified within the hydrological study area relate to one-off housing developments and associated domestic water treatment systems. These developments are small scale and localised in nature. No significant effects on water quality or flows (surface water or groundwater) would result from such developments. Therefore, there were no hydrological cumulative effects with respect to the Existing Development that would impact population or human health.

There was limited potential for the November 2020 Peat Slide remediation works to result in significant effects on downstream surface water quality due to the context within which the works were being completed (i.e. in the immediate aftermath of a significant peat slide). Furthermore, the implementation of best practice reinstatement methods and practices ensured that there were no significant negative effects. The residual effect has been a positive, moderate, short-term, indirect effect on downstream surface water quality. Since the effect of the remediation works has been positive, there is no potential for negative cumulative effects with the Existing Development.

### 5.5.10 Noise and Vibration

As stated in Chapter 12: Noise, considering the worst-case predicted construction noise levels were well below the adopted construction criteria, cumulative impacts of significance during the construction stage were unlikely. Additionally, the calculated noise from the operation of the onsite 110kV substation at the nearest NSLs is significantly below the adopted criteria, and hence, there remains headroom for other fixed plant operations to operate within the adopted criteria. As such, it is considered that there were no significant cumulative effects on noise and vibration, associated with other projects when considered in combination with the Existing Development.

### 5.5.11 Traffic and Transport

As stated in Chapter 15: Material Assets (Traffic and Transportation), the AADT data for the N15 indicates that the road has operated well within operational capacity for the period from 2018 to 2025 when construction activities were associated with the Existing Development were ongoing. On this basis, it can be concluded that there were no significant cumulative effects on traffic and the local highway network as a result of the Existing Development in combination with the other projects in the vicinity.

### 5.5.12 Major Accidents and Natural Disasters

Peat instability did occur during the construction of the Existing Development. While this resulted in localised environmental effects at the time of occurrence, mitigation measures were in place and remediation works were subsequently implemented, as detailed in this rEIAR. These measures have been effective in reducing both the likelihood and potential consequences of further peat instability events, and the residual effect is assessed as Not Significant.

Notwithstanding the occurrence of peat instability during construction, and the identified impacts in terms of people, the environment, essential services, and social receptors at the time of the event, it is concluded that No Significant Effects arose following the implementation of mitigation and remediation measures. Accordingly, there is no potential for cumulative effects associated with peat instability arising from the Existing Development when considered in combination with other relevant plans and projects.

## 5.6 In-Cumulation Effects

This section considers the in-cumulation impact of the combination of the Existing Development and Prospective Development (the Subject Development). Table 5-16 below details the residual in-cumulation effects of the Subject Development.

Table 5-16 Assessment of potential In-Cumulation Effects of the Subject Development

| Topic      |                           | Existing Development                                                                                                                                                                                                                                                                                                                                                       | Prospective Development                                                                                                                                                                                                                                                                                                                                                                                            | Subject Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Population | Population Levels         | <p>The Existing Development did not result in any changes to population trends, density, household size, or age structure within the local area.</p> <p>There was no effect on population levels, no mitigation required and therefore no residual effects</p> <p>The effects on population levels from the Existing Development are considered to be Not Significant.</p> | <p>The Prospective Development will have no impact on the population of the area with regard to changes to trends, population density, household size or age structure.</p> <p>There is no potential for effect on population levels, no mitigation required and therefore no residual effects.</p> <p>The effects on population levels from the Prospective Development are considered to be Not Significant.</p> | <p>The effects on population levels from both the Prospective Development and Existing Development are considered to be Not Significant.</p> <p>There is no temporal overlap between the Prospective Development and the Existing Development and therefore no potential for an In- Cumulation effect.</p> <p>Based on the above, the potential for effects arising from the Subject Development is the same as that arising from the Prospective Development. Therefore, the effects on population levels from the Subject Development are Not Significant.</p> |
|            | Employment and Investment | <p>The construction of the Existing Development had a Short-term, Slight, Positive, Indirect, Effect on employment and investment. The injection of money in the form of</p>                                                                                                                                                                                               | <p>The injection of money in the form of salaries and wages to those employed during the construction phase, and the Community Gain income and landowner payments of that will</p>                                                                                                                                                                                                                                 | <p>The effects on Employment and Investment from both the Prospective Development and Existing Development are considered to be Not Significant.</p> <p>There is potential for an in cumulation effect on employment and investment arising from the Subject Development.</p>                                                                                                                                                                                                                                                                                    |



|  |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                  | <p>salaries and wages to those employed during the construction phase of the Existing Development resulted in an increase in household spending and demand for goods and services in the local area. This resulted in local retailers and businesses experiencing a Short-term Positive effect on their cash flow. This had a Short-term, Slight, Positive, Indirect Effect.</p> <p>The effects on Employment and Investment from the Existing Development are considered to be Not Significant</p> | <p>result from the Prospective Development has the potential to result in an increase in household spending and demand for goods and services in the local area will result in a slight long-term positive effect.</p> <p>The effects on Employment and Investment from the Prospective Development are considered to be Not Significant</p> | <p>Based on the above, the potential for effects arising from the Subject Development is an In-cumulation effect of both the Existing and the Prospective Development. Therefore, effects on Employment and Investment from the Subject Development are slight, long term, positive and is considered to be Not Significant.</p>                                                                                                                                                                                                                                                                                            |
|  | Land Use Patterns and Activities | <p>Arising from the Existing Development there was a residual effect that was permanent, imperceptible and negative.</p> <p>The effect on land use/activities due to the Existing Development infrastructure was Not Significant.</p>                                                                                                                                                                                                                                                               | <p>During the construction phase there is a residual effect that is permanent, not significant and negative.</p> <p>During the operational phase there is also a residual effect that is permanent, not significant and negative.</p>                                                                                                        | <p>The effect on land use/activities due to both the Prospective Development and Existing Development infrastructure is Not Significant.</p> <p>There is potential for an In-Cumulation effect on Land Use Patterns and Activities from the combination of the Existing and Prospective Developments. The most significant residual effect arises from the In-Cumulation effect of the Existing Development and the Construction Phase of the Prospective Development. On this basis the residual effect of the Subject Development on the Land Use Patterns and Activities is permanent, not significant and negative.</p> |

|  |                 |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|  |                 |                                                                                                                                                                                                                                     | The effect on land use/activities due to the Prospective Development infrastructure is Not Significant.                                                                                                                                                                                                                                                                                                                 | The effect of the Subject Development on Land Use Patterns and Activities is Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  | Property Values | <p>The residual effect of the Existing Development on Property Values are short-term, imperceptible and negative.</p> <p>The effect on property values due to the construction of the Existing Development was Not Significant.</p> | <p>During the construction phase there is the potential for a residual effect on property values that is short term, imperceptible and negative.</p> <p>There is the potential for a long-term negative imperceptible residual effect on property values from the Prospective Development during the operational phase.</p> <p>The effect on property values due to the Prospective Development is Not Significant.</p> | <p>The effect on property values due to both the Prospective Development and Existing Development is Not Significant.</p> <p>There is potential for an In-Cumulation effect on Property Values from the combination of the Existing and Prospective Developments.</p> <p>Based on the residual effects arising from both the Existing and Prospective Developments, the Subject Development residual effect is considered to be long term, imperceptible and negative.</p> <p>The effect on property values due to the Subject Development is Not Significant.</p> |
|  | Tourism         | <p>The assessment concluded that there were no residual effects on tourism in the wider landscape due to the Existing Development.</p> <p>The effect on tourism in the wider landscape during the construction of the Existing</p>  | <p>It is considered that the Prospective Development will have no residual effects on visitor experiences to attractions in the wider landscape during both the construction phase and operational phase.</p> <p>The effect on tourism in the wider landscape due to the</p>                                                                                                                                            | <p>The effect on tourism in the wider landscape due to both the Prospective Development and the Existing Development will be Not Significant.</p> <p>There is potential for an In-Cumulation effect on Tourism from the combination of the Existing and Prospective Developments.</p> <p>Both the Existing Development and the Prospective Development have no residual effects. On that basis the Subject development will have no residual effects on Tourism.</p>                                                                                               |

|              |                     | Development is considered Not Significant.                                                                                                                                                                                          | Prospective Development will be Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                  | The Subject Development effect on Tourism is Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|              | Residential Amenity | <p>Residential amenity was subject to Temporary, Slight, Negative Effects during construction of the Existing Development.</p> <p>The effect on residential amenity as a result of the Existing Development is Not Significant.</p> | <p>Based on the assessment in Section 5.4, it is concluded that air, traffic, noise and vibrations emissions and shadow flicker will result in a short term, slight, negative residual effect during the construction phase and a long-term, slight, negative residual effect on residential amenity during the operational phase due to the Prospective Development.</p> <p>The effect on residential amenity as a result of the Prospective Development is Not Significant.</p> | <p>The effect on residential amenity as a result of both the Prospective Development or the Existing Development is Not Significant.</p> <p>There is potential for an In-Cumulation effect on Residential Amenity from the combination of the Existing and Prospective Developments.</p> <p>Based on the residual effect arising from both the Existing Development and the Prospective Development, the residual effect of the Subject Development is long term, slight and negative.</p> <p>The Subject Development effect on Residential Amenity is Not Significant.</p>             |
| Human Health | Health and Safety   | <p>There was no residual effect on Health and Safety as a result of the Existing Development.</p>                                                                                                                                   | <p>There is a short term, slight negative residual effect during the construction phase and a long-term potential, imperceptible negative residual effect during the operational phase on Health and Safety due to the Prospective Development.</p> <p>The effect of the Prospective Development on Health and</p>                                                                                                                                                                | <p>Effects on Health and Safety due to both the Prospective Development and the Existing Development are considered to be Not Significant.</p> <p>There is no temporal overlap between the Prospective Development and the Existing Development and therefore no potential for an In-Cumulation effect.</p> <p>The potential for a residual effect on Health and Safety from the Subject Development is the same as the potential effect from the Prospective Development. Therefore, based on the residual effect arising during both the construction and operational phases, the</p> |

|  |                                         |                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|  |                                         |                                                                                                                                                                                                                                                                                                                              | Safety is considered to be Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | residual effect of the Subject Development on Health and Safety is long term , imperceptible and negative.<br><br>The effect of the Subject Development on Health and Safety is considered to be Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|  | Air Quality: Dust and Exhaust Emissions | <p>The residual impacts on air quality from exhaust emissions and dust associated with construction activities and machinery are considered to have been Temporary, Imperceptible, Local and Negative.</p> <p>There was No Significant Effect on Air Quality as a result of the construction of the Existing Development</p> | <p>The residual effects during the construction phase on air quality from dust and exhaust emissions associated with construction activities and machinery are considered to have a short-term slight negative effect on air quality.</p> <p>Overall, considering offsetting of dust and greenhouse gas emissions from fossil fuels during the operational phase, there will be a long-term overall moderate positive effect on air quality.</p> <p>Effects on Air Quality due to the Prospective Development are considered to be Not Significant.</p> | <p>The effects on Air Quality from both the Prospective Development and the Existing Development will be Not Significant.</p> <p>There is no temporal overlap between emissions arising during the Prospective Development and the Existing Development and therefore no potential for an In-Cumulation effect.</p> <p>As there is no In-Cumulation effect the residual effects arising from the Subject Development are considered to be the same as the residual effects of the Prospective development, namely, long term moderate and positive.</p> <p>Effects on Air Quality due to the Subject Development are considered to be Not Significant.</p> |
|  | Water Quality                           | The residual effect on human health resulting from water quality changes during the construction phase, including those associated with the                                                                                                                                                                                  | The residual effects on human health due to water quality are considered to be short term, imperceptible and negative, during the construction phase                                                                                                                                                                                                                                                                                                                                                                                                    | The effects on water quality from both the Prospective Development and the Existing Development will be Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



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|  |                     | <p>November 2020 Peat Slide, is assessed as indirect, temporary, slight and negative. Mitigation measures as listed in rEIAR ensured the protection of the public water supply and prevented any adverse health outcomes.</p> <p>The effects on water quality from the Existing Development were Not Significant.</p> | <p>and temporary, imperceptible and negative during the operational phase.</p> <p>The effects on water quality from the Prospective Development will be Not Significant.</p>                                                                                                                                                                                                                                                                                                             | <p>As the residual effects that arose during the Existing Development were temporary, there is no potential for an In-Cumulation effect arising from the combination of the Existing and Prospective Developments.</p> <p>On that basis the residual effect of the Subject Development is the same as the residual effect of the Prospective Development, namely short term, imperceptible and negative.</p> <p>Effects on Water Quality due to the Subject Development are considered to be Not Significant.</p>                                                                                                                                                                   |
|  | Noise and Vibration | <p>With the implementation of the mitigation measures provide in Chapter 18 of the rEIAR, there was a temporary, imperceptible negative effect on health from the Existing Development.</p> <p>The effects on Human Health from Noise and Vibration from the Existing Development were Not Significant.</p>           | <p>There will be a residual slight, short-term, negative effect on health due to an increase in noise levels during the construction phase of the Prospective Development.</p> <p>There will be a residual not significant, long term, negative effect on health due to an increase in noise levels during the operational phase of the Prospective Development.</p> <p>The effects on human health due to noise emissions from the Prospective Development will be Not Significant.</p> | <p>The effects on human health due to noise emissions from both the Prospective Development and the Existing Development will be Not Significant.</p> <p>As the residual effects that arose during the Existing Development were temporary, there is no potential for an In-Cumulation effect arising from the combination of the Existing and Prospective Developments.</p> <p>On that basis the residual effect of the Subject Development is the same as the residual effect of the Prospective Development, namely long term, not significant and negative.</p> <p>The effects on human health due to noise emissions from the Subject Development will be Not Significant.</p> |

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|  | Traffic and Transport                 | <p>There was a residual, short term slight negative effect on health due to the elevated traffic levels arising from the Existing Development.</p> <p>The effects on traffic from the Existing Development are considered to have been Not Significant.</p>                                                                                                                                                       | <p>During the construction phase there will be a short term, slight, negative effect on local road users.</p> <p>During the operational phase there will be a long term, imperceptible, negative effect on local road users.</p> <p>The effects on traffic from the Prospective Development are considered to be Not Significant.</p>                                                                                               | <p>The effects on traffic from both the Prospective Development and the Existing Development will be Not Significant.</p> <p>There is no temporal overlap between traffic levels arising during the Prospective Development and the Existing Development and therefore no potential for an In-Cumulation effect.</p> <p>On that basis the residual effect of the Subject Development is the same as the residual effect of the Prospective Development, namely long term, imperceptible and negative.</p> <p>The effects on traffic from the Subject Development are considered to be Not Significant.</p>                                                                                                           |
|  | Major Accidents and Natural Disasters | <p>With the implementation of the emergency response plan and other mitigation measures discussed in Chapter 18 of the rEIAR there were no residual effect on Human Health as a result of Major Accidents and Natural Disasters.</p> <p>The November 2020 Peat Slide did not have any residual effect on 'People', 'Essential Services', or 'Social' risk categories, as detailed in Chapter 16 of the rEIAR.</p> | <p>The impact assessment concludes that the risk of a major accident and/or disaster during the construction phase of the Prospective Development is considered 'low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). It is considered that there will be no significant residual effect(s) associated with both the construction and operation of the Prospective Development.</p> | <p>The effects on Human Health due to Major Accidents and Disasters arising from both the Prospective Development and the Existing Development will be Not Significant.</p> <p>There were no residual effects on human health from the Existing Development and therefore no potential of an In-Cumulation effect between the Existing Development and the Subject Development.</p> <p>On that basis the residual effect of the Subject Development is the same as the potential residual effect of the Prospective Development, and there is therefore no potential residual effect.</p> <p>The effects to/from Major Accidents and Natural Disasters arising from the Subject Development are Not Significant.</p> |

|  |                |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|  |                | The effects to/from Major Accidents and Natural Disasters from the Existing Development were Not Significant.                                                                                                                                                                    | The effects to/from Major Accidents and Natural Disasters from the Prospective Development are Not Significant.                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | Shadow Flicker | Shadow flicker, as described in Section 5.2.3 and Section 5.4.2.2.7 above, can only occur during the operational phase of a wind energy development. There is no potential for residual Shadow Flicker Effects from the Existing Development. This is considered Not Significant | <p>There will be no residual effect on human health from Shadow Flicker.</p> <p>The effects related to shadow flicker from the Prospective Development will be Not Significant.</p> | <p>The effects on human health due to Shadow Flicker from both the Prospective Development and the Existing Development will be Not Significant.</p> <p>There is no temporal overlap between the Prospective Development and the Existing Development and also no potential for shadow flicker from the existing Development so therefore no potential for an In-Cumulation effect.</p> <p>The potential for a residual effect from Shadow Flicker arising from the Subject Development is the same as the potential effect from the Prospective Development. Therefore, based on the residual effect arising during both the construction and operational phases, the residual effect of the Subject Development on Health and Safety is long term, imperceptible and negative.</p> <p>The effects related to shadow flicker from the Subject Development will be Not Significant.</p> |

## 5.7 Cumulative Effects – Subject Development

For the assessment of cumulative effects of the Subject Development, any other existing, permitted or proposed projects (wind energy or otherwise) have been considered. The potential cumulative effects of the Subject Development and other relevant developments has been carried out with the purpose of identifying what influence the Subject Development will have on the surrounding environment when considered cumulatively.

Further information on projects considered as part of the cumulative assessment are given in Section 2.9 of Chapter 2: Background and Policy of this rEIAR and Section 2.10 of Chapter 2: Background and Policy the EIAR. The cumulative effects assessment of the Subject Development has considered the list of plans and projects listed in Appendix 2-1 of this rEIAR, and Appendix 2-1 of the EIAR. The impacts with the potential to have cumulative impacts on population and human health, in particular noise, air quality, climate, shadow flicker, traffic, telecommunications, and visual impacts are further addressed in their relevant chapters of this rEIAR and the EIAR.

A cumulative effects assessment on Population and Health has been carried out for both the Prospective Development in the EIAR and the Existing Development in this rEIAR. Each of the relevant topics are assessed in Table 5-13 below. In summary the assessment concludes that there is no potential for significant cumulative effects arising from the Subject Development combined with other plans and projects

Table 5-17 Assessment of potential Cumulative Effects of the Subject Development

| Topic      |                                  | Subject Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Population | Population Levels                | <p>There are no residual effects arising from the Prospective Development and the Existing Development and therefore no potential for any cumulative effects for the Subject Development.</p> <p>The potential for Cumulative effects on Population Levels from the Subject Development and other projects is Not Significant.</p>                                                                                                                                                                                                                                                 |
|            | Employment and Economic Activity | <p>There is potential for cumulative effects between the Subject Development and other projects within the area that have occurred or will occur. The potential cumulative effects would be long term, slight and positive.</p> <p>However, the potential for Cumulative effects on Employment and Economic Activity from the Subject Development and other projects is Not Significant</p>                                                                                                                                                                                        |
|            | Land Use Patterns and Activities | <p>There is potential for cumulative effects on land-use patterns and activities arising from the Subject Development. Other projects (such as existing, permitted or proposed windfarms) in the area that have occurred or will occur have the potential to affect the Land Use Patterns and Activities. It is considered that the residual cumulative effect would be long term, not significant and negative.</p> <p>However, the potential for Cumulative effects on Land Use Patterns and Activities from the Subject Development and other projects are Not Significant.</p> |
|            | Property Values                  | <p>The potential for cumulative effects on properties for the Prospective Development is the same as the potential for cumulative effects for the Subject Development, therefore the no potential for significant cumulative effects from the Subject Development.</p> <p>The potential Cumulative effects on Property Values from the Subject Development and other projects are Not Significant.</p>                                                                                                                                                                             |
|            | Tourism                          | <p>There are no residual effects arising from the Prospective Development and the Existing Development and therefore no potential for any cumulative effects for the Subject Development</p> <p>The potential Cumulative effects on Tourism from the Subject Development and other projects are Not Significant.</p>                                                                                                                                                                                                                                                               |



|              |                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|              | Residential Amenity                     | <p>There are potential Cumulative effects that could arise between the Subject Development and other projects. It is considered that the residual cumulative effects are long term, not significant and negative.</p> <p>However, the potential cumulative effects on Residential Amenity from the Subject Development and other projects are Not Significant.</p>                                                                                                                                                                                                                                                                                                     |
| Human Health | Health and Safety                       | <p>In this case, any potential for a cumulative effect would be between the Prospective Development and other future projects. All other existing, permitted or proposed projects (wind energy or otherwise) would be expected to follow all relevant Health and Safety Legislation during the construction, operation and decommissioning phases of the development. It can be concluded that here would be a long-term imperceptible cumulative effect from the Prospective Development and other developments in the area.</p> <p>The potential for Cumulative effects on Health and Safety from the Subject Development and other projects is Not Significant.</p> |
|              | Air Quality: Dust and Exhaust Emissions | <p>There is no temporal overlap between the Prospective Development and the Existing Development and therefore any potential for cumulative effects will only arise between the Prospective Development and other projects. The nature of the Prospective Development and other wind energy developments within 20 kilometres are such that, once operational, they will have a cumulative long-term, moderate, positive effect on the air quality and climate.</p> <p>However, it is considered the potential for Cumulative effects on Air Quality from the Subject Development and other projects is Not Significant.</p>                                           |
|              | Water Quality                           | <p>The potential cumulative effects on water quality to be considered will arise from the Prospective Development and other projects. The Prospective Development will be completed without generating a significant effect. On that basis there is no potential for cumulative effects with other projects.</p> <p>The potential Cumulative effects on Water Quality from the Subject Development and other projects are Not Significant.</p>                                                                                                                                                                                                                         |
|              | Noise and Vibration                     | <p>The potential cumulative effects arising from Noise and Vibration to be considered will arise from the Prospective Development and other projects. As outlined in Section 12.4.4.4, the cumulative turbine noise from the Barnesmore Repowering wind farm and the Streeness Wind Farm have been included in the operational turbine noise assessment. The Prospective Development will be completed and operate without generating a significant effect.</p>                                                                                                                                                                                                        |

|  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|  |                               | Therefore, the potential for Cumulative effects arising from Noise and Vibration from the Subject Development and other projects is Not Significant.                                                                                                                                                                                                                                                                                                                                                                                                                       |
|  | Traffic and Transport         | <p>The potential cumulative effects arising from Traffic and Transport to be considered will arise from the Prospective Development and other projects. It is considered that the residual cumulative effect will occur during the construction phase and will be temporary, imperceptible and negative.</p> <p>Therefore, the potential for Cumulative effects arising from Traffic and Transport from the Subject Development and other projects is Not Significant.</p>                                                                                                 |
|  | Major Accidents and Disasters | <p>The potential for cumulative effects for the Prospective Development is the same as the potential for cumulative effects for the Subject Development, therefore there is no potential for significant cumulative effects from the Subject Development.</p> <p>There is no temporal overlap between the Prospective Development and the Existing Development and therefore no potential for any cumulative effects from the Subject Development.</p> <p>The potential for Cumulative effects on Residential Amenity from the Subject Development is Not Significant.</p> |
|  | Shadow Flicker                | <p>The potential for cumulative effects from Shadow Flicker for the Prospective Development is the same as the potential for cumulative effects for the Subject Development, therefore there is no potential for significant cumulative effects from the Subject Development in conjunction with other projects.</p> <p>The potential Cumulative effects from Shadow Flicker arising from the Subject Development and other projects is Not Significant.</p>                                                                                                               |

## 5.8 Transboundary Effects

This section considers the potential for transboundary effects as a result of the Subject Development. Table 5-18 below details the residual effects of the Subject Development, and the potential for which the Subject Development could affect a different jurisdiction.

Table 5-18 Assessment of potential Transboundary Effects of the Subject Development

| Topic      |                                  | Prospective Development                                                                                                                                                                       | Existing Development                                                                                                                                                                       | Subject Development                                                             |
|------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Population | Population Levels                | No Significant Effect on Population Levels within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Prospective Development                | No Significant Effect on Population Levels within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development                | No potential for Significant Transboundary Effects from the Subject Development |
|            | Employment and Investment        | No Significant Effect on Employment and Investment within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Prospective Development        | No Significant Effect on Employment and Investment within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development        | No potential for Significant Transboundary Effects from the Subject Development |
|            | Land Use Patterns and Activities | No Significant Effect on Land Use Patterns and Activities within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Prospective Development | No Significant Effect on Land Use Patterns and Activities within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development | No potential for Significant Transboundary Effects from the Subject Development |
|            | Property Values                  | No Significant Effect on Property Values within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Prospective Development                  | No Significant Effect on Property Values within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development                  | No potential for Significant Transboundary Effects from the Subject Development |
|            | Tourism                          | No Significant Effect on Tourism within the Population Study Area, thus there is                                                                                                              | No Significant Effect on Tourism within the Population Study Area,                                                                                                                         | No potential for Significant Transboundary Effects from the Subject Development |

|              |                                         |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                             |                                                                                 |
|--------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|              |                                         | No potential for Significant Transboundary Effects from the Prospective Development                                                                                                                                                                                                    | thus there is No potential for Significant Transboundary Effects from the Existing Development                                                                                              |                                                                                 |
|              | Residential Amenity                     | No Significant Effect on Residential Amenity within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Prospective Development                                                                                                       | No Significant Effect on Residential Amenity within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development               | No potential for Significant Transboundary Effects from the Subject Development |
| Human Health | Health and Safety                       | Effects on health and safety due to the Prospective Development are considered to be Not Significant. There is No potential for Significant Transboundary Effects from the Prospective Development                                                                                     | No Significant Effect on Residential Amenity within the Population Study Area, thus there is No potential for Significant Transboundary Effects from the Existing Development               | No potential for Significant Transboundary Effects from the Subject Development |
|              | Air Quality: Dust and Exhaust Emissions | Effects on human health from Air Quality within the Air Quality Study Area due to the Prospective Development are considered to be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development                                       | No Significant Effect on human health from Air Quality within the Air Quality Study Area, thus there is no potential for Significant Transboundary Effects from the Existing Development    | No potential for Significant Transboundary Effects from the Subject Development |
|              | Water Quality                           | The potential for transboundary effects on human health from Water Quality are considered within the Hydrological Study Area for the Prospective Development and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development | No Significant Effect on human health from Water Quality within the Hydrological Study Area, thus there is no potential for Significant Transboundary Effects from the Existing Development | No potential for Significant Transboundary Effects from the Subject Development |

|  |                                       |                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                           |                                                                                 |
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|  | Noise and Vibration                   | The potential for transboundary effects on human health from Noise and Vibration are considered within the Noise Study Area for the Prospective Development, which there are no sensitive receptors located in Northern Ireland, and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development | No Significant Effect on human health from Noise and Vibration within the Noise Study Area, thus there is no potential for Significant Transboundary Effects from the Existing Development                                                                                | No potential for Significant Transboundary Effects from the Subject Development |
|  | Traffic and Transport                 | The potential for transboundary effects from Traffic and Transport are considered within the Traffic Study Area for the Prospective Development and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development                                                                                  | No Significant Effect on Traffic and Transport occurred within the Traffic Study Area, thus there is no potential for Significant Transboundary Effects from the Existing Development                                                                                     | No potential for Significant Transboundary Effects from the Subject Development |
|  | Major Accidents and Natural Disasters | The potential for transboundary effects from Traffic and Transport are considered within the Traffic Study Area for the Prospective Development and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development                                                                                  | The potential for transboundary effects from Traffic and Transport are considered within the Traffic Study Area for the Prospective Development and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development | No potential for Significant Transboundary Effects from the Subject Development |
|  | Shadow Flicker                        | The potential for transboundary effects on human health from Shadow Flicker are considered within the Shadow Flicker Study Area for the Prospective                                                                                                                                                                                                        | Shadow flicker, as described in Section 5.2.3 and Section 5.4.3.2.7 above, can only occur during the operational phase of a wind energy                                                                                                                                   | No potential for Significant Transboundary Effects from the Subject Development |



|  |  |                                                                                                                                                                                                            |                                                                                                            |  |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--|
|  |  | Development, which there are no sensitive receptors located in Northern Ireland, and will be Not Significant. There is no potential for Significant Transboundary Effects from the Prospective Development | development. There is no potential for Transboundary Shadow Flicker Effects from the Existing Development. |  |
|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--|