Muingmore Wind Farm

Section 37E SID Application

Volume 1 – Environmental Impact Assessment Report - Non Technical Summary (NTS)

RWE Renewables Ireland Limited

Prepared by:

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Acronyms and Abbreviations

ACP	An Coimisiún Pleanála
AOD	Above Ordnance Datum
BESS	Battery Energy Storage System
BSc	Bachelor of Science
CAP24	Climate Action Plan 2024
CAP25	Climate Action Plan 2025
CEMP	Construction Environmental Management Plan
CLO	Community Liaison Officer
CLS	Community Liaison Strategy
COSHH	Control of Substances Hazardous to Health
CO_2eq	Carbon Dioxide equivalent
CSO	Central Statistics Office
DECC	Department of Environment, Climate and Communications
DOEHLG	Department of the Environment, Heritage and Local Government
EDs	Electoral Divisions
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
ELF-EMF	Extremely Low Frequency-Electromagnetic Field
ELF	Extremely Low Frequency
EMF	Electromagnetic Field
EPA	Environmental Protection Agency
ESB	Electricity Supply Board
EU	European Union
EWEA	European Wind Energy Association
GW	Gigawatt
GVA	Gross Value Added
HGVs	Heavy Goods Vehicles
HSA	Health and Safety Authority
HSE	Health Service Executive
IARC	International Agency for Research on Cancer
ICNIRP	International Commission on Non-Ionising Radiation Protection
IEMA	Institute of Environmental Management and Assessment
IWEA	Irish Wind Energy Association
LGVs	Light Goods Vehicles
MCC	Mayo County Council
MCDP	Mayo County Development Plan 2022-2028
MW	Megawatt
MWh	Megawatt-hour

NESC	National Economic and Social Council
NHMRC	National Health and Medical Research Council
NPWS	National Parks and Wildlife Service
PPE	Personal Protective Equipment
RESS	Renewable Energy Support Scheme
SEAI	Sustainable Energy Authority of Ireland
SEI	Sustainable Energy Ireland
SLR	SLR Consulting Limited
TDR	Turbine Delivery Route
UN	United Nations
WAW	Wild Atlantic Way
WEI	Wind Energy Ireland
WHO	World Health Organisation
ZTV	Zone of Theoretical Visibility

1.0 Introduction

1.1 Overview

SLR Consulting Ltd (SLR) has prepared this Environmental Impact Assessment Report (EIAR) on behalf of RWE Renewables Ireland Limited. The EIAR is to support RWE Renewables Ireland Limited in applying for planning permission to An Coimisiún Pleanála for the construction of the Proposed Development as described in **Chapter 2: Description of the Proposed Project** of this EIAR. The Proposed Development will be carried out in County Mayo.

1.2 Definition of terms

For the purposes of assessment, the following terms (Capitalised) are utilised throughout the EIAR:

Proposed Project: Refers to the Proposed Development including the GCR.

Proposed Development: Refers to the elements of the Proposed Project for which planning consent is being sought. This encompasses the wind farm and associated infrastructure (including the 33kV collector cables), Habitat Enhancement Area in the north-west quadrant (NWQ), any development associated with the Turbine Delivery Route (TDR), onsite substation, and battery energy storage system (BESS).

Proposed Development Site: The site where the Proposed Development is located, as defined by the Planning Application Boundary.

Main Wind Farm Development Site: part of the Proposed Development Site which includes the proposed wind turbines and associated infrastructure.

The Northern Cluster of the Main Wind Farm Development Site is comprised of a geographical area to the north of the local road, the L5252. Elements of the Proposed Development which will be located in the Northern Cluster comprise:

- 7 no. turbines (turbine nos. 1-7) and their associated access tracks, hardstandings and foundations.
- 1 no. 110kV substation.
- 1 no. temporary construction compound (TCC1).
- 1 no. BESS.
- 2 no. site access points (AP1 and AP2).
- Internal underground 33V collector cables which connects both clusters to the onsite substation which is located within the Northern Cluster.
- Habitat Enhancement Area in the north-west quadrant (NWQ).

The Southern Cluster of the Main Wind Farm Development Site is defined by the area to the south of the local road, the L5252. Elements of the Proposed Development which will be located in the Southern Cluster comprise:

- 6 no. turbines (turbine nos. 8-13) and their associated access tracks, hardstandings and foundations.
- 1 no. temporary construction compound (TCC2).
- 1 no. meteorological mast.
- 1 no. site access point (AP3).

- Internal underground 33kV collector cables, connecting to the onsite substation which is located within the Northern Cluster.

Turbine Delivery Route (TDR): Refers to the proposed turbine delivery route from Killybegs Port to the Main Wind Farm Development Site and includes the 3 no. Over-run Areas.

Over-run Areas: Refers to the 3 no. areas (Over-run Areas 1, 2 & 3) along the TDR where temporary accommodation works on private lands are required.

Grid Connection Route (GCR): The designated route for the 110kV Underground Electricity Cable from the Proposed Development onsite substation to the national grid connection point at Bellacorick 110 kV Substation. The GCR will be the subject of a separate planning application.

Habitat Enhancement Area in the NWQ: An area to the north-west of the Main Wind Farm Development Site which will not include any infrastructure related to the Proposed Project other than that to enhance habitat.

1.3 The Proposed Project

The Proposed Project as assessed in this EIAR comprises the Proposed Development together with the Grid Connection Route (GCR) as described in **Chapter 2** of this EIAR. This GCR will not form part of the planning application but will be subject to a separate application which will be submitted to An Coimisiún Pleanála at a later date. The GCR is assessed in this EIAR to ensure a comprehensive evaluation of the overall project.

The GCR will comprise of approx. 25.5 km long underground cabling which runs eastwards to the Bellacorick Substation. While the onsite 110 kV Substation and the 33 kV collector cables form part of the current planning application (The Proposed Development), the 110 kV GCR cable will be located entirely within the public roads and does not form part of this planning application.

1.4 The Proposed Development

The Proposed Development will primarily consist of a wind farm with 13 No. wind turbine generators (WTGs), an electrical substation compound along with ancillary civil and electrical infrastructure, a Battery Energy Storage System (BESS) compound and associated infrastructure, including meteorological mast, access tracks and aviation lighting.

The proposed turbines will be three-bladed, horizontal axis type, with a blade tip height of 179-180 m (from the top of the foundation). The rotor diameter will be within the range of 149-163 m, and the hub height will be within the range of 98.5-105 m. Following formal consultation with An Coimisiún Pleanála, these ranges provide necessary flexibility for selecting the most efficient technology at the time of construction. All possible turbine permutations within these parameters have been fully assessed throughout the EIAR to ensure a robust evaluation of potential environmental effects.

A Turbine Delivery Route (TDR) is proposed from Killybegs Port via the R263, N56, N15, N4, N59, R313, L1206 and the L5252 to the Main Wind Farm Development Site. The TDR works requiring planning consent involve 3 no. Over-run Areas where new temporary tracks will be constructed to avoid transportation pinch points. There are also minor works in relation to street furniture in various locations along the TDR although these will be completed within the boundary of the public corridor.

The applicant is seeking a 10-year construction period in addition to a 35-year operational period. This operational period will commence once the Proposed Development is fully commissioned.

1.5 Main Wind Farm Development Site Location

The Main Wind Farm Development Site, which accommodates 13 no. wind turbines and all associated infrastructure, is located within the townlands of Muingmore (An Mhoing Mhór) and Doolough (Dumha Locha) in County Mayo, approximately 0.5 km north of the village of Gweesalia.

The Main Wind Farm Development Site covers an area of approximately 454 hectares (ha) and is comprised of two turbine clusters. The Main Wind Farm Development Site is accessed from the local road L5252, which branches off the L1206. The L1206 connects to the R313 and wider road networks.

The Main Wind Farm Development Site primarily consists of cutover lowland blanket bog, with areas of commercial forest plantation, worked and unworked peatlands. The Main Wind Farm Development Site itself is located on low-lying terrain, ranging from 3 m AOD at the southern end to 33 m AOD at the northeastern portion. A number of small streams are present, and the area is located within the Blacksod-Broad Haven catchment. The streams ultimately discharge into the sea, an area designated as the Blacksod Bay / Broad Haven Special Protection Area (SPA) and Mullet / Blacksod Bay Special Area of Conservation (SAC).

The Main Wind Farm Development Main Wind Farm Development is located in a predominantly rural area which is characterised by open moorland areas interspersed with one-off housing. The nearest residential property is located 740 m from the nearest wind turbine (T10).

1.6 Main Wind Farm Development Site Surrounds

The Main Wind Farm Development Site and its surrounding area are described in **Chapter 1: Introduction** and topic specific chapters of the EIAR but a summary is also provided here for ease of reference.

The Main Wind Farm Development Site is situated within a coastal region of County Mayo and occupies a relatively condensed area of around 3km in a north-east to south-west orientation, encompassing 2 cluster areas. The surrounding area is predominantly rural in character but there are several small settlements within a 5km radius of the Main Wind Farm Development Site. The Main Wind Farm Development Site is also located c. 8km west of Bangor Eris and c.0.5km north of the village of Gweesalia (see **Figure 2-1**).

Geographically, the Main Wind Farm Development Site lies north of the intersection of roads L1205 and L1206. The L1206 borders the southern edge of the Main Wind Farm Development Site, while the L1205 runs westward and leads to the R313, located c. 4km north of the Main Wind Farm Development Site. The R313 provides connections to more extensive road networks, as indicated below.

A local road (L5252) bisects the Main Wind Farm Development Site east to west. This local road branches off from the L1206 (see **Figure 2-3**). This road runs longitudinally through the Main Wind Farm Development Site, spanning from north-west to south-east, connecting the L1205 and L1206. Notably straight and offering good lines of sight, this road will provide access to the Main Wind Farm Development Site, both north and south of the road.

The Main Wind Farm Development Site predominately consists of cutover lowland blanket bog, conifer plantation and peatland. There is no built development within the Main Wind Farm Development Site, however a vacant industrial facility is located adjacent to the Northern Cluster but outside the planning application boundary and does not form any part of the Proposed Development.

The Main Wind Farm Development Site is less than 1 km from the Atlantic coastline and is located on low-lying terrain, ranging from approximately 3 m AOD at the southern end to approximately 33 m AOD at the northeastern portion.

A number of small streams are present within the Main Wind Farm Development Site and along the boundaries, such as along the northern boundary, flowing west, the lower portion of the east boundary, flowing south.

There are 109 residential properties indicated in **Figure 4-3** of the EIAR as being located within 1km of the Main Wind Farm Development Site. The nearest residential property is located c. 740m from the nearest wind turbine (T10). There are 282 residential properties within 500m of the GCR.

1.7 The Application and EIAR Requirement

Given the scale and size of the Proposed Project, it meets the mandatory requirements for Environmental Impact Assessment (EIA) as defined in European and national legislation, the European Union Directive 2011/92/EU (the EIA Directive) as amended by Directive 2014/52/EU and the Irish Planning and Development Regulations 2001 (as amended), respectively.

Under the Irish legislation, major wind energy projects such as the Proposed Project (i.e. exceeding 5 turbines or having a total output greater than 5 megawatts (MW) of power output, must be subject to an EIA process, and any planning application must be accompanied by an EIA Report (EIAR).

As well as an EIAR, an Appropriate Assessment (AA) Screening and Natura Impact Statement (NIS) has been prepared in compliance with Article 6 of the Habitats Directive. The NIS evaluates potential impacts on nearby European Sites also referred to as Special Protected Areas (SPAs) and Special Areas of Conservation (SACs).

1.8 The Applicant

The applicant for the Proposed Development is RWE Renewables Ireland Limited (The “Applicant”), one of the largest global players in power generation from renewable energies. The Applicant has been active in Ireland since 2016 and is undertaking long-term investments in onshore wind, offshore wind, and new battery storage projects, potentially amounting to billions of Euros in direct foreign investment in the country. The Applicant’s objective is to grow organically by developing business from greenfield sites, positioning itself as a long-term energy partner for Ireland during its energy transition to 2030 and beyond. As part of its growth ambitions, the Applicant is actively seeking new opportunities to further expand its portfolio in Ireland. The renewable energy generated from the Proposed Development will contribute towards Ireland’s onshore wind energy target of 9 GW by 2030. Already with an operational wind farm, two battery storage facilities, an airborne wind test site and both onshore and offshore wind farms in development, the Applicant’s current Irish portfolio is managed by experienced teams in Kilkenny and Dun Laoghaire.

1.9 Land Ownership

Ownership of the lands associated with the Proposed Development is provided by a combination of lands owned by Coillte and by private landowners. The Applicant has obtained letters of consent (Addendum 2, Letters of Consent to the Planning Application Form) for these lands which accompany this planning application.

1.10 EIAR Structure

The format of this EIAR is designed to ensure that a consistent and logical approach is used to describe the potential significant environmental effects arising from the Proposed Project.

The overall structure of this EIAR is presented as follows:

- Volume 1 – Non-Technical Summary (NTS).
- Volume 2 – EIAR Chapters.
- Volume 3 – Technical Appendices to the EIAR Chapters.
- Volume 4 – Photomontages.

All Figures, Tables, and Technical Appendices prepared within this EIAR are numbered with the chapter number first followed by the figure / table / technical appendix number for simple reference.

This EIAR has been prepared in accordance with the EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (2022).

The general methodology is described in Volume 2 - EIAR **Chapter 1**, and the specific details regarding the assessment techniques, which comply with industry guidance are set out in the separate EIAR chapters for each topic. The methodology involves evaluating the sensitivity of the existing environment (Baseline) against the degree of change caused by the project to determine the *Significance of Effects*. These effects are classified using standard EPA terminology ranging from *Imperceptible* (an effect capable of measurement but without significant consequences) and *Not Significant* (an effect which causes noticeable changes in the character of the environment but without significant consequences), to *Moderate* (an effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends) and *Significant* (an effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment).

The description of the existing environment, the Proposed Project and the potential impacts, mitigation measures and residual effects are grouped in each EIAR chapter. Each of the specialist assessments within the EIAR considers the list of developments in the region that have potential to result in cumulative impacts.

The grouped format makes it easy to investigate topics of interest and facilitates cross reference to specialist studies. Additionally, this ensures that the EIAR is readily accessible to the general public, as well as statutory authorities. Volume 2 - EIAR Chapters is structured as follows:

- Chapter 1 Introduction
- Chapter 2 Description of the Proposed Project
- Chapter 3 Site Selection and Alternatives, EIA Scoping, Consultation and Key Issues
- Chapter 4 Population and Human Health
- Chapter 5 Biodiversity
- Chapter 6 Land, Soils and Geology
- Chapter 7 Water (Hydrology & Hydrogeology)
- Chapter 8 Air Quality and Climate
- Chapter 9 Noise and Vibration
- Chapter 10 Landscape and Visual

- Chapter 11 Shadow Flicker
- Chapter 12 Cultural Heritage
- Chapter 13 Material Assets, including Telecommunications and Aviation
- Chapter 14 Traffic and Transport
- Chapter 15 Major Accidents and Disasters
- Chapter 16 Interactions of the Foregoing
- Chapter 17 Schedule of Mitigation Measures

1.11 Competent Experts

A highly specialised multi-disciplinary team of environmental consultants has prepared the EIAR. In accordance with the requirements of the EIA Directive, details of qualifications and experience of the competent experts across the team is provided in full in Volume 2 - EIAR **Chapter 1**.

2.0 The Need for the Development and Alternatives

The Proposed Project is necessary to produce renewable energy to support Ireland's transition to a low-carbon economy.

National policy, including the most recent Climate Action Plan 2025 (CAP 25), is focused on the need to reduce the use of fossil fuels and anthropogenic greenhouse gas emissions. The Irish Government, through the Climate & Low Carbon Development (Amendment) Act 2021, commits to achieving 'net-zero' emissions no later than 2050, and a 51% reduction in emissions between 2021 and 2030.

CAP 25 sets a clear target to achieve 80% renewable electricity for the country by 2030, which includes a specific target of 9 GW for onshore wind capacity. The Proposed Project supports the achievement of these targets.

Once operational, the Proposed Project will have an estimated power output of between 74.1 to 91 MW. This generation capacity will contribute substantially to the fulfilment of European, National and Regional objectives for the increased production of renewable energy and will directly support the delivery of targets within CAP 25.

A full review of the Proposed Project against all applicable national, regional and local policies is contained in the **Planning Statement** which also accompanies this application.

2.1 Alternatives Considered

A review of the reasonable alternatives considered by the developer in the design of the final Proposed Project has been set out in **Chapter 3** of the EIAR, in accordance with EIA requirements and consultation undertaken as part of the EIA process. The alternative options considered were in relation to the following:

- Future Baseline alternative.
- Alternative locations.
- Alternative technologies.
- Alternative design and layouts.
- Alternative cable and turbine delivery routes.

Under the Future Baseline alternative, the Proposed Project would not go ahead, the development of wind turbines would not be pursued, and the Main Wind Farm Development

Site would remain in use as cutover lowland blanket bog, commercial forestry and farmland. The State's ability to produce sustainable energy and contribute to the decarbonisation requirements under EU targets and National targets, as set out above, would be restricted by the loss of the potential contribution from the Proposed Project.

At the outset, an assessment of alternative locations was undertaken based on criteria such as environmental constraints, wind resources and grid availability to avoid sensitive locations in favour of those that have fewer constraints.

A review of datasets in relation to all of the above indicated that the location for the Proposed Project is favourable.

2.2 Consultation Feedback

Alternative designs and layouts across all elements of the Proposed Project were reviewed continuously throughout the EIA process. This was achieved through a process of iterative feedback between the design team and the EIA team, as well as through targeted consultation undertaken as part of the EIA scoping and project development process.

The scope of the EIAR was informed by a scoping consultation process. During this scoping consultation a total of 69 statutory and non-statutory bodies were consulted and were invited to contribute to the scope of the EIAR.

This scoping consultation was carried out in April 2024. As part of this process, the Applicant issued a scoping request letter and preliminary scoping report, providing a description of the Proposed Project at that time, a preliminary table of contents of the EIAR and an outline of the methodology for assessment to prescribed bodies.

Responses were received from 39 bodies, and these submissions informed the design of the Proposed Project and the approach to this EIAR.

As stakeholder interaction progressed, a number of issues were consistently raised. These include shadow flicker, noise, and visual impact. These issues directly informed the technical studies and design refinements.

Additionally, the Applicant adapted their approach to community consultation based on feedback, with many residents expressing a preference for one-to-one or small group meetings over large public gatherings.

Details on consultation and public participation are provided mainly in EIAR **Chapter 3** in **Technical Appendix 3-7**, with additional topic-specific feedback included within the relevant EIAR chapters.

3.0 Description of Proposed Project

3.1 Proposed Project

The Proposed Project as assessed in this EIAR comprises the Proposed Development together with the Grid Connection Route (GCR) as described in **Chapter 2** of this EIAR. This GCR will not form part of the planning application but will be subject to a separate application which will be submitted to An Coimisiún Pleanála at a later date. The GCR is assessed in this EIAR to ensure a comprehensive evaluation of the overall project.

The GCR will comprise of approx. 25.5 km long underground cabling which runs eastwards to the Bellacorick Substation. While the onsite 110 kV Substation and the 33 kV collector cables form part of the current planning application (The Proposed Development), the 110 kV GCR cable will be located entirely within the public roads and does not form part of this planning application.

3.2 Proposed Development

The Proposed Development will consist of:

- Construction of 13 no. wind turbines, each with an overall blade tip height between 179-180m inclusive, rotor diameter between 149-163m inclusive, hub height between 98.5-105m inclusive, in two clusters.
- Battery energy storage system (BESS) compound to include control building with welfare facilities, all associated plant and equipment, security fencing and gates, underground cabling, and all ancillary structures, drainage works, as well as storage and parking.
- Construction of crane hardstands, laydown areas and turbine foundations.
- Construction of permanent internal site access roads including passing bays and all associated drainage infrastructure.
- Construction of a permanent 110 kV onsite electricity substation and onsite IPP (Independent Power Producer) substation to include control buildings with welfare facilities, all associated electrical plant and equipment, security fencing and gates, all associated underground cabling, wastewater holding tanks, and all ancillary structures and works.
- Construction of 33kV underground electricity cabling and communications cabling, including joint bays and ancillary works, to connect the windfarm and battery energy storage system to the proposed onsite substation.
- Construction of two temporary construction compounds with associated temporary site offices, parking areas, welfare facilities and security fencing.
- Development of an internal site drainage network and sediment control systems.
- Temporary works as part of road improvements to facilitate the delivery of abnormal loads and turbine component deliveries from Killybegs Port to site, to include 3 no. over-run areas along the turbine delivery route, (No. 1 in the townland of Tristia onto the L1206, No. 2 in the townland of Moneynierin at the junction of the N59 and the R312, and, No. 3 in the townland of Bangor off the R313).
- Construction of 1 no. new site entrance and the construction/ upgrade of 2 no. additional site entrances (all off local road L5252, west of the L1206),
- Ancillary forestry felling to facilitate construction of the development.
- All associated site development works including landscaping, lighting, soil management and the ongoing maintenance and management of the biodiversity measures in accordance with the Habitat Management Plan and the Peat Restoration Plan.
- The replacement of felled trees with the planting of new trees.
- The erection of a permanent meteorological mast 100m in height.

3.3 Power Output

The Proposed Project will have an estimated installed capacity of between 74.1 MW to 91 MW, depending on the final turbine technology installed. This capacity range accounts for the various electrical generators that may be installed within the turbine nacelles.

Assuming this installed capacity, the Proposed Project has the potential to produce approximately 263,063 MWh (megawatt hours) of electricity per year. This annual electricity production (226,884 to 279,006 MWh) will be sufficient to supply approximately 54,020 to

66,430 Irish households with electricity per year (based on the average household consumption of 4.2 MWh).

According to the 2022 Census data, there are a total of 52,114 private households within County Mayo. Therefore, the Proposed Project will produce enough electricity for the equivalent of 104% to 127% of all households in County Mayo.

3.4 Construction

The construction phase, which includes civil, electrical, grid works, and turbine assembly is anticipated to take approximately 18-24 months once the proposed turbines are acquired via a competitive tender process. The construction sequence will be as follows:

- off-site highway works;
- mobilisation & site set up;
- site clearance and tree felling;
- site access and internal access tracks;
- turbine hardstands;
- turbine foundation construction;
- turbine delivery & Installation;
- onsite cable delivery and installation;
- onsite substation, BESS and Grid connection cable works;
- wind farm commissioning and testing; and
- landscaping, reinstatement/restoration and demobilisation.

A Construction Environmental Management Plan (CEMP) is provided as **Technical Appendix 2-1** in Volume 3 of the accompanying EIAR. The CEMP details the proposed best practice construction methods, mitigation measures, and the waste management strategy.

The CEMP will be a key contract document which will be updated throughout the construction process to reflect site progress and any conditions imposed by An Coimisiún Pleanála.

3.5 Operation

During the operational phase, turbines will operate automatically, responding to changes in wind speed and direction by means of anemometry-equipment and control systems.

The operation of the wind turbines will be monitored remotely, and a Site Manager will oversee the day-to-day management of the site. Each turbine will undergo regular scheduled maintenance. Permission is sought for a 35-year operation period commencing from full operational commissioning of the wind farm. At the end of the operational life, the Proposed Project will be decommissioned unless planning permission is sought to repower or extend the operational life of the turbines.

3.6 Decommissioning

Prior to decommissioning, a decommissioning plan will be agreed with Mayo County Council.

During the decommissioning phase of the Proposed Project, cranes will disassemble the above ground turbine components which will be removed offsite for recycling.

The foundations will be covered over and allowed to re-vegetate naturally. Leaving turbine foundations in situ is considered a more environmentally sensible option as to remove the

reinforced concrete associated with each turbine would result in environmental nuisances such as noise and vibration and dust. It is proposed that the internal site access tracks will be left in situ. Underground cabling will be cut back and left in situ.

The BESS and associated electrical equipment will be removed offsite for recycling. The proposed onsite substation and GCR will be taken in charge by ESB Networks /EirGrid and will continue to form part of the national electricity network.

4.0 Population and Human Health

Chapter 4 of the EIAR assesses the potential for the construction, operation and decommissioning phases of the Proposed Project to result in significant effects on Population and Human Health. A study area of 1 km radius of the Main Wind Farm Development Site was reviewed for the existence of potentially sensitive receptors. The baseline demographic data is based on the three Electoral Divisions (EDs) that intersect the 1 km study area, which are Glencastle, Goolamore, and Rathhill. The population of the study area, as recorded in the 2022 Census, was 1,324 persons, representing a decline of -1.2% from the 2016 Census. The population density of the study area is significantly lower than that of County Mayo and the State. The proportion of individuals aged 65 and over in the Study Area is significantly higher than the State and Mayo, and the population within the study area has high levels of unemployment when compared to the County and State.

The existing land-uses in proximity to the Proposed Project will remain broadly unchanged, though the Proposed Project will alter the land use where proposed works will take place. The Proposed Project is estimated to create between approximately 89 and 273 direct jobs during its construction phase, based on the estimated 74.1 MW to 91 MW capacity.

Investment in the local area is anticipated through the Community Benefit Fund, which will be approximately €453,768 to €558,012 per year for the communities in the local area. This fund mandates a minimum payment of €1,000 to all dwellings located within a one-kilometre radius, with a lower amount for households outside 1 km but within 2 km, decreasing progressively.

The assessment of potential health impacts is supported by a review of peer-reviewed literature, which does not find any published, credible scientific sources that link wind turbines to adverse health effects. As with any large-scale infrastructure project, the construction phase involves potential health and safety risks typical of construction site activities for both workers and the public, depending on the Proposed Project's output, all of which will be addressed in the CEMP in **Technical Appendix 2-1**, Volume 3 of the accompanying EIAR.

The potential impacts from noise during the construction phase are expected to be of a negligible significant effect, which is not significant in EIA terms with the exception of construction of Over-run Area 1 where there is a risk of a temporary moderate significant effect at one dwelling situated to the north where the over-run track joins the local road opposite this property.

A temporary 2.5 m high solid close-boarded wooden fence, or equivalent noise barrier, will be installed on the north section of Over-run Area 1, which will reduce noise from construction activity taking place closest to this area by up to 10 dB.

Vibration will not be perceivable by residents at their dwellings, as the nearest noise-sensitive locations are at least 740 m distant. With the implementation of best practice construction methods and mitigation measures, there are no significant adverse effects on human health predicted as a result of the Proposed Project.

Potential effects during the decommissioning phase are expected to be similar to, but less than, those described for the construction phase. These temporary impacts will be managed through appropriate mitigation measures to ensure that no significant residual effects occur

on the population or human health. Mitigation will include the management of noise, air quality, and traffic, which are assessed to be temporary and not significant.

The Proposed Project, along with other renewable energy projects, will act cumulatively in reducing CO_2 emissions by displacing fossil fuel in the production of electricity, resulting in a moderate positive effect on climate change mitigation. When considered cumulatively with other projects, the Proposed Project will contribute to ongoing positive socio-economic effects through continued community investment and the creation of further employment opportunities in the region.

5.0 Biodiversity

Chapter 5 of the EIAR assesses the potential for the construction, operation and decommissioning phases of the Proposed Project to result in significant effects on Biodiversity.

The Main Wind Farm Development Site predominately consists of cutover lowland blanket bog. The bog is extensively drained, is subject to scrub encroachment and there is the pervasive presence of invasive species such as rhododendron and prickly heath. The Main Wind Farm Development Site also comprises conifer plantation located on peated substrate, alongside various peatland habitats. The Main Wind Farm Development Site is generally flat with levels ranging from 3 m AOD at the southern end to 33 m AOD at the northeastern portion and surface water features, including a number of small streams, are present within along its boundaries.

Desk and field studies were conducted to identify Important Ecological Features (IEFs) within the potential zone of influence of the Proposed Project. IEFs are specific habitats or species considered to be of sufficient conservation value that a significant effect upon them could influence the outcome of the planning decision. The assessment focuses on these features to determine the scale of potential impacts and required mitigation. The assessment considers potential cumulative impacts with other projects, including constructed developments, permitted but unbuilt developments, and those subject to appeal. The assessment also strictly applies the mitigation hierarchy guidelines of avoidance, mitigation, compensation, and enhancement.

5.1 Biodiversity Features

The existing environment was evaluated across three primary categories: Habitats and Flora, Terrestrial Fauna, and Aquatic Fauna. A desk study and field surveys identified the Important Ecological Features (IEFs) within the zone of influence of the Proposed Project.

5.1.1 Designated Nature Conservation Sites

Designated sites within the vicinity of the Main Wind Farm Development Site were assessed for potential connectivity. The following site types were reviewed:

- Special Areas of Conservation (SACs): Nine sites within 15 km.
- Special Protection Areas (SPAs): Nine sites within 20 km.
- Ramsar Sites: Three sites within 20 km.
- Proposed Natural Heritage Areas (pNHAs): One site within 15 km.
- and Natural Heritage Areas (NHAs): Three sites within 15 km.

Of these, only those with a direct ecological or hydrological pathway, specifically the Mullet/Blacksod Bay Complex SAC and SPA, and the Owenduff/Nephin Complex SAC and SPA were identified as having connectivity. These are assessed in detail within the Natura

Impact Statement (NIS), which concludes that the Proposed Project will not adversely affect the integrity of these sites.

5.1.2 Habitats and Flora

The Main Wind Farm Development Site is dominated by cutover lowland blanket bog and conifer plantations. The peatland habitats correspond to Annex I Blanket Bog (habitat code 7130), although the bog is degraded due to historic drainage, peat cutting and invasive species encroachment (such as Rhododendron). Other habitats include small areas of scrub, heath, and surface water streams.

5.1.3 Terrestrial Fauna

Surveys identified bird species of conservation concern utilizing the Main Wind Farm Development Site, including breeding Common snipe and Eurasian woodcock, as well as species vulnerable to collision such as Curlew and Lapwing. The bat assemblage includes Common, Nathusius', and Soprano pipistrelle, and Leisler's bat. These species are considered IEFs due to their vulnerability to habitat loss, disturbance, or collision risk.

5.1.4 Aquatic Fauna

Surveys and eDNA sampling confirmed the presence of European eel (County/Regional importance) and Lamprey (Site level importance, a species protected under the EU Habitats Directive). While no Freshwater pearl mussel or White-clawed crayfish were detected, the invasive pathogen crayfish plague was found in all riverine sampling locations. Biological water quality was generally found to be typical of the local environment, with no rare macro-invertebrate species recorded.

5.1.5 Potential Effects

Construction and Decommissioning Phases

During the construction and decommissioning phases, significant effects of smothering to non-priority Annex I blanket bog (cutover) at the European scale are anticipated in the absence of mitigation. The decommissioning phase will involve similar activities to construction, such as ground disturbance and the presence of personnel, though the magnitude of impact will be lower as infrastructure such as turbine foundations will remain in situ to minimise further habitat disruption.

Indirect effects include short-term deterioration in water quality due to pollution or suspended solids and smothering due to sediment washout, compaction, and excavation of soil adjacent to hedgerows and tree lines. There are potential significant effects of spreading invasive and non-native species on hedgerows, amenity grassland, tree lines and conifer plantation habitats at the local scale. These risks will be strictly managed via the CEMP (See **Technical Appendix 2-1**).

Effects on the Avian assemblages include habitat loss leading to indirect disturbance / displacement. This is especially for breeding Common snipe and Eurasian woodcock, and also for yellowhammer, skylark and meadow pipit. For terrestrial mammals, vegetation removal during construction could lead to short-term displacement, but no significant residual effects are anticipated.

Operational Phase

Direct mortality due to collision is a potential operational phase impact for species. A Collision Risk Model (CRM) was used to estimate collision risk based on recorded target species activity levels and flight behaviour, proposed turbine numbers and specifications. Further detail is provided in **Technical Appendix 5-8 Collision Risk Model Results.**

For the bat assemblage, direct collision with turbines or barotrauma is a potential effect. This is significant at local scale for Common, Nathusius' and soprano pipistrelle, and Leisler's bat.

Cumulative Effects

A review of other relevant projects was undertaken, and additional mortality could occur to bird populations due to other wind farms in the area. While the risk to some species is increased slightly due to the proximity of other projects, the cumulative contribution of the Proposed Project is not significant at a national or regional scale when mitigation is applied.

Mitigation Measures

Proposed mitigation measures for the construction, operational and decommissioning phases are described in **Chapter 5**, and these mitigation measures will be implemented in full for the turbine selected. Measures are detailed in the CEMP to ensure implementation

For the high value peatland habitats, a full habitat restoration and management plan has been developed which will ensure the remaining habitat is enhanced to a higher ecological condition than the current status. The habitat and species management plan also details measures for the control and removal of the invasive species found onsite.

For collision risk, bat buffers will be implemented. Post-construction monitoring will be carried out to monitor the effectiveness of the bat and bird collision risk mitigation measures. If considered necessary based on this monitoring, additional mitigation measures will be implemented in agreement with the Planning Authority and NPWS, which will include turbine feathering and / or curtailment as required.

The area to be managed for enhancement far exceeds the area to be lost as a result of the Proposed Project. Replacement planting of any hedgerows/treelines lost will be with like-for-like native species mix. Following the full implementation of the mitigation measures in **Chapter 5**, there are not likely to be any significant residual effects on important ecological features.

6.0 Land, Soils and Geology

Chapter 6 of the EIAR assesses the potential for the construction, operation and decommissioning phases of the Proposed Project for significant effects on Land, Soils and Geology, on geological features of the area and also on other geological aspects of the Main Wind Farm Development Site.

The geographical study area includes the Main Wind Farm Development Site and a 2 km offset from it when considering land, soils and geology aspects. The study area for the Turbine Delivery Route (TDR) and the Grid Connection Route (GCR) consists of the immediate road corridor, including the three proposed over-run areas for the TDR.

6.1 Features within the Study Area

The topography across the Main Wind Farm Development Site is generally flat and low lying (ranging from 3 m AOD at the southern end to 33 m AOD at the northeastern end). The study area outside the Main Wind Farm Development Site consists of a mixture of bog, farmland and scattered dwellings. Corine Landcover 2018 classifies that there are three broad (level 1) land uses on the Main Wind Farm Development Site and within the study area: forest and semi-natural areas, agricultural lands and wetlands.

The TDR and GCR are in current use as part of the existing regional, national and road network between the Main Wind Farm Development Site and Killybegs Port.

The Main Wind Farm Development Site and wider study area is underlain predominately by Blanket Peat but also include areas of Metamorphic Till and deposits of Alluvium. Soils

beneath the over-run areas 1, 2 and 3 are mapped as peat but over-run area 2 also contains a historical access road comprising made ground. Subsoils beneath over-run areas 1, 2 and 3 are mapped as comprising of blanket peat.

The Main Wind Farm Development Site is entirely underlain by Precambrian foliated orthogneisses of the Annagh Division. The Annagh Division, also known as the Annagh Gneiss Complex, contains the oldest known bedrock in Ireland, with an estimated age of c. 1.3 billion years. There is no bedrock outcrop recorded by GSI at the Main Wind Farm Development Site. There are two Geoheritage sites within the wider study area: Blacksod Bay and Doolough Gneiss. No current or historical pits have been noted.

6.2 Assessment Work

Ground Investigation (GI) was carried out across the Main Wind Farm Development Site Proposed Development Site (see **Technical Appendix 6-1**). It confirmed the presence of variable peat thicknesses overlying till deposits of between 1 and 5.6 metres below ground level (mbgl).

The study area and Main Wind Farm Development Site are predominantly within an area of low landslide susceptibility (GSI, 2023). More than 90% of the Main Wind Farm Development Site, including all proposed access tracks and turbine locations, are classified as low or moderately low for landslide susceptibility. All of the turbines have been situated in areas with a low landslide susceptibility. A Peat Landslide Hazard Risk Assessment (PLHRA) (see **Technical Appendix 6-2**). was carried out and found there are no areas of potential instability within the Main Wind Farm Development Site.

A Peat Management Plan (see **Technical Appendix 6-3**) was also prepared and this was informed in part by the GI and the PLHRA.

The main potential impacts that are considered in the assessment relate to: activities or events that might impact quaternary sediment quality during construction and operation phase (e.g. soil contamination by a fuel or oil spill or leakage), geotechnical instability arising due to soils/subsoils, and extraction of sediments and bedrock and their relocation and reuse within the Main Wind Farm Development Site as part of development works..

Construction Phase:

Soils (including peat) will be removed at the Main Wind Farm Development Site at turbine locations and associated infrastructure, BESS and electricity substation. The potential impact to soils and subsoils through excavation is considered to be low adverse and the significance of the effect is considered to be Slight (Not Significant in the context of the EIA Regulations). Management of excavated materials will be governed by a site-specific Peat Management Plan (PMP). Excavated soils and peat will be reused within the Main Wind Farm Development Site. Any material management will be conducted in strict accordance with the Waste Management Act 1996 (as amended).

Fuel and oil leaks and spills are a potential indirect impact associated with construction machinery. The mandatory implementation of spill prevention measures ensures that any residual effect is Not Significant in the context of the EIA Directive.

Operational Phase:

During the operational phase of the Proposed Project, there are no expected direct impacts to the land, soils and geology. Routine site maintenance (which will involve limited number of vehicles and equipment) of the turbines, substation, BESS and GCR will be undertaken. Given that there will be no exposed excavations and a small number of vehicles/equipment required for maintenance, the effects are assessed as being Not Significant in the context of the EIA Directive.

During the construction phase inherent design measures will be implemented to reduce the risk of peat instability (such as the design and implementation of drainage management systems onsite, refer to **Technical Appendix 6-2**). These design measures will be in place during the operational phase and it is considered that the potential effect to human health or built structures is negligible and the effect is considered to be Not Significant in the context of the EIA Directive.

Decommissioning Phase

The decommissioning phase will involve the removal of above-ground turbine components as well as BESS and associated electrical equipment. To minimise ground disturbance, turbine foundations and hardstandings will be left in situ and covered over to allow for natural revegetation. The proposed substation, and the GCR (subject to a separate planning application) will continue to exist on a permanent basis. The decommissioning phase is assessed as having no direct impact on land, soils, and geology, with potential indirect impacts (such as accidental spills) remaining similar to the construction phase.

Mitigation and Residual Effects

Mitigation measures will be implemented in full during the Proposed Project. Site operations will be managed in accordance with relevant Health and Safety legislation and construction will take place in accordance with the CEMP (see **Technical Appendix 2-1**. The area of bare or exposed soils and rock will be kept to a minimum, insofar as practicable. All aspects of the proposed backfilling / construction phase works will be undertaken in accordance with relevant best practice environmental guidance published by the Environmental Protection Agency.

For spill prevention, refuelling of mobile plant will only be undertaken within the compound at a dedicated impermeable refuelling pad (during construction phase) or by mobile double skinned bowsers (during any phase). No oils, greases, hydraulic fluids or hazardous substances (or any associated wastes) will be stored across the Main Wind Farm Development Site, but will be stored in the designated Control of Substances Hazardous to Health (COSHH) storage area within the onsite substation and BESS compounds during the operational phase. Contingency plans / procedures will be developed to deal with potential leaks and spills. Detailed mitigation measures are included for the areas of peat, which will protect all exposed peat surfaces from erosion and desiccation and minimise the exposed surface of the up-slope cut face. Mitigation measures for the operational and decommissioning phases are similar to those applied during construction where relevant.

With the implementation of the proposed mitigation measures, the residual effect to soils and bedrock through the indirect impact of leaks and spills is considered to be Imperceptible (Not Significant).

Following the application of the Peat Management Plan and construction best practice, the residual effect of soil and peat excavation at the Main Wind Farm Development Site will be Slight (Not Significant). The residual effect of the potential peat instability is assessed as being Slight (Not Significant in the context of the EIA Directive) for all Proposed Project phases.

In the context of land, soils and geology, a review indicates that there are no other major planned developments in the vicinity of the Main Wind Farm Development Site that have the potential to give rise to any significant adverse land, soils or geology cumulative impacts.

7.0 Water (Hydrology & Hydrogeology)

Chapter 7 of the EIAR provides a description of the surface water and groundwater conditions in the Main Wind Farm Development Site within the context of the regional setting, and assesses the potential impacts of the construction, operation and decommissioning phases of Proposed Project to result in significant effects on surface water and groundwater. For the

purposes of the assessment, the study area comprises the Main Wind Farm Development Site and the surrounding area up to 2 km, the three over-run areas on the Turbine Delivery Route and the Grid Connection Route. A Stage 1 Flood Risk Assessment was caried out and is included in **Chapter 7** of the EIAR. A Water Framework Directive Assessment (See **Technical Appendix 7-4**) was also carried out.

7.1 Water Features

Local surface waterbodies within the Main Wind Farm Development Site boundary include Tristia stream (TRISTIA_010), Unnamed stream (AN_RÁITH_010) and, Doolough Stream / An Mhoing Mhór (DOOLOUGH STREAM_010). The Tristia stream, which is located within the centre of the Main Wind Farm Development Site, flows into the Main Wind Farm Development Site from the east and flows out from the Main Wind Farm Development Site in a south easterly direction. These surface water bodies are classified under the Water Framework Directive as having either “Good” or ‘’Poor’ Status. The EPA monitors these waterbodies using a Biological Quality Rating (Q-Value) system, which categorizes water quality into four classes: ‘unpolluted’ (Class A), ‘slightly polluted’ (Class B), ‘moderately polluted’ (Class C), and ‘seriously polluted’ (Class D). Within the Main Wind Farm Development Site, the Doolough Stream / An Mhoing Mhór has a Poor WFD status and is At Risk, while the An Ráith and Tristia streams both have a Good WFD status and are currently Under Review.

Designated sites with hydrological links include Mullet/Blacksod Bay Complex SAC / SPA / pNHA and Blacksod Bay/Broad Haven SPA, located c. 1.1 km downstream of Site. Tullaghan Bay and Bog NHA is also located c. 1.1 km downstream from the Main Wind Farm Development Site.

The Turbine Delivery Route is approximately 200 km in length and crosses 95 river waterbodies, although only the three over-run areas involve works outside the public road. The specific waterbodies in proximity to these over-run areas are:

- Over-run Area 1 is located approximately 94 m west of the Tristia River (WFD ID: TRISTIA_010), which has a "Good" WFD status and is currently "Under Review".
- Over-run Area 2 is the only area that involves a direct watercourse crossing. It intersects with the Moneynierin River (WFD ID: MUING_010), which has a "Good" WFD status and is "Not at Risk".
- Over-run Area 3 is located within the vicinity of an unnamed stream (WFD ID: OWENMORE (MAYO)_060), which has a "High" WFD status and is "Not at Risk".

The Grid Connection Route comprises an underground cable route of 25.5 km. Although located within the roadway, the GCR route traverses several sub-catchments and local groundwater bodies. The assessment concludes that the GCR will have a minimal direct impact on the water environment as it follows the existing road corridor.

7.2 Flood Risk

A Stage 1 Flood Risk Assessment has been undertaken for the Proposed Project. National Indicative Fluvial Maps identify some minor flooding at the north-western boundary of the Main Wind Farm Development Site, associated with the Doolough Stream; however, the extent of the flooding does not impact on the Proposed Project. Pluvial flood risk is considered to be low, no infrastructure is located within areas of coastal flood risk, and there is no evidence of groundwater flooding. No recorded historical or recurring flood incidents have been identified within the Main Wind Farm Development Site. Overall, flood risk for the Proposed Project is low and a Stage 2 Flood Risk Assessment is not required.

7.3 Hydrological Arrangements for Proposed Project

Potential impacts relate to:

- Potential impacts on surface water quality from accidental fuel leakage/ spillage during the construction stage.
- Sediment release during the construction stage.
- Groundwater quality from accidental spillage of oils, fuels and cement during the construction stage.
- Drainage networks provide a conduit for rapid transport of silty water and potential contamination from surface spills of fuels/oils, concrete or chemicals.

Mitigation measures will be implemented in full during the construction phase. Site operations will be managed in accordance with the CEMP in **Technical Appendix 2-1**. Mitigation measures include:

- Best practice construction methods which will be implemented in order to prevent water (surface water and groundwater) pollution. Good practice measures will be applied in relation to pollution risk, sediment management and management of surface runoff rates and volumes.
- A CEMP (**Technical Appendix 2-1** found in Volume 3 of the EIAR) has been developed for the Proposed Project to ensure adequate protection of the water environment. All personnel working on the Proposed Project will be responsible for the environmental control of their work and will perform their duties in accordance with the requirements and procedures of the CEMP.
- During the construction phase, all works associated with the construction of the Proposed Project will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015). Any groundwater encountered will be managed and treated in accordance with CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016).

See also **Chapter 7** for further detail on good practice measures.

During the operational phase of the Proposed Project, it is anticipated that routine maintenance of infrastructure and tracks will be required across the Main Wind Farm Development Site. This may include work such as maintaining access tracks and drainage and carrying out wind turbine maintenance.

Should any maintenance be required onsite which will involve construction type activities; mitigation measures will be adhered to in accordance with the measures in the CEMP (**Technical Appendix 2-1** of the EIAR) to avoid potential effects.

During the operation of the Proposed Project, it is not anticipated that there will be any excavation or stockpiled material, reducing the potential for erosion and sedimentation effects. Should any excavation be required, this is likely to be limited and required for maintenance of tracks etc. Any excavation, handling and placement of material from excavations will be subject to the same safeguards that will be used during the construction phase of the Proposed Project, as outlined in **Chapter 7** of the EIAR.

With the implementation of the mitigation measures:

- The potential effects on surface water quality from accidental fuel leakage/ spillage during the Construction stage will be reduced from "moderate" to "slight".
- The reduction in surface water quality from sediment release during the construction stage will be reduced from "moderate" to "slight".

- The reduction in the groundwater quality from accidental spillage of oils, fuels and cement during the construction stage will be reduced from “slight - moderate” to “slight – not significant”.

The significance of all other potential effects during the construction and operational stage will be reduced to “slight” or lower to the water environment receptors. Additionally, the Proposed Project will not cause a deterioration of the status of any surface or groundwater body under the WFD and will not undermine the attainment by any such body of good status.

The risk of a pollution incident during decommissioning will be managed via the CEMP (**Technical Appendix 2-1**). Practices will focus on undertaking activities away from watercourses and identifying safe areas for stockpiling potential pollutants. Adherence to these measures will ensure material is not transported into nearby watercourses. Location-specific sediment control will be in place for track-related activities to manage fine sediment that could otherwise enter the water environment.

A cumulative assessment of the Proposed Project and other projects was undertaken. The assessment concludes that there are no significant cumulative effects on water environment receptors during the construction, operational, or decommissioning phases.

8.0 Air and Climate

Chapter 8 of the EIAR assesses the potential for the construction, operation and decommissioning phases of the Proposed Project to result in significant effects on Air Quality and Climate.

8.1 Air Quality

In relation to air quality, the principal sources of potential dust emissions during the construction of the Proposed Project are as follows:

- Earthworks: resulting from the excavation, handling, haulage and storage of soils, upgrading of the existing agricultural tracks onsite and construction of new site access tracks.
- Construction: construction of the onsite substation, BESS and 13 No. turbine hard standing areas and associated turbine foundations, with associated material (and aggregate) excavation & storage.
- Trackout:
    - Onsite haulage by heavy vehicles on unpaved / compacted aggregate surfaces; and
    - Offsite haulage resulting in potential trackout of materials onto the public road network.

8.1.1 Dust and Traffic Emissions

The Applicant in association with the contractor will implement good practice measures to control the generation and dispersion of dust outlined in the CEMP (**Technical Appendix 2-1**). In consideration of the dust emission magnitude and the sensitivity of the area, the resulting dust impact risk is considered to be ‘low’ from all construction phase activities. Although there will be emissions from small, intermittently operated plant and machinery such as generators and excavators, the impacts of emissions from these units will be imperceptible.

Road traffic impacts associated with the Proposed Project on air quality are considered to result in a ‘not significant’ effect in the context of the EIA Regulations upon both human and ecological receptors.

There is considered to be negligible potential for dust generation offsite on the TDR as it will utilise the existing paved road network. Regarding the three offsite Over-run Areas, it is confirmed that any associated emissions will not be significant. This is due to the high baseline air quality of the area, and the temporary nature of the construction works, which will not lead to a persistent deterioration in air quality.

Maintenance vehicles will access the Main Wind Farm Development Site for periodic monthly maintenance during the operational period. Given the low and infrequent traffic movements involved, the traffic emission impact will be imperceptible along with any associated dust emissions impact.

The air quality impact assessment herein indicates that the Proposed Project will not contribute to a significant increase in local air pollution by way of air / dust emissions. Cumulative effects with regard to dust emissions from the construction phase of the development are not considered to be a risk. Cumulative impacts during the operational and decommissioning phases will also be not significant. Once the wind farm is constructed, there will be no significant direct emissions to atmosphere under the operational phase.

Truck movements associated with removing turbines and the BESS will result in vehicular emissions and dust; however, these will be significantly less than during construction, resulting in a slight temporary impact. Emissions will arise from machinery onsite, such as for the movement of soil to cover foundations, but are not likely to result in significant impacts.

Regarding ancillary infrastructure, the internal ducts, access roads, and turbine hard standings will be left in situ, resulting in no additional truck movements or impacts from machinery. Similarly, the onsite substation and GCR infrastructure will form part of the national grid and will be left in situ, resulting in no decommissioning impacts for that component.

8.2 Climate Change

Chapter 8 also assesses the construction, operation and decommissioning phases of the Proposed Project for significant effects on climate in the context of Ireland's net-zero greenhouse gas emissions targets. The assessment included a Whole Life Carbon Assessment (WLCA) whereby emissions, removals, and avoided emissions are combined to establish the overall (net) carbon effect of the Proposed Project, as well as its 'carbon payback period'.

The Proposed Project is expected to produce greenhouse gas (GHG) emissions during the manufacturing, construction, and decommissioning phases. However, these emissions are predicted to be offset within approximately four years of the development becoming operational, when compared to average grid electricity. Assuming a total operational life of 35 years, the Proposed Project is projected to result in lifetime emissions savings of 1,785,538 – 2,206,043 tonnes of CO_2. The operational phase will result in positive and significant effects on air quality due to the displacement of fossil fuels as an energy source.

In terms of climate resilience, the vulnerability of the Proposed Project to risks of disasters has been considered. The potential for effects related to the vulnerability to climate change are likely to be limited to those effects associated with extreme weather, mechanical failure or structural damage. Taking this into consideration the effect of the climate on the Proposed Project is not significant in the context of the EIA Regulations.

Mitigation measures will be implemented during the construction phase and construction activities will follow best practice guidance in the CEMP. Specific practices include:

- Reducing traffic speed at the Main Wind Farm Development Site entrance/Construction Emissions and Mitigation.
- Regular maintenance of vehicles and equipment.

- Implementation of best practices for environmental management.

Management practices for dust minimisation and control will be included in the CEMP, which will follow the principles of the IAQM guidance.

A Construction Traffic Management Plan (CTMP) has also been developed and will be implemented. See **Technical Appendix 14-4 of the EIAR**.

Overall, the Proposed Project is expected to have a Significantly Beneficial impact by reducing carbon emissions and contributing to national climate change goals.

9.0 Noise and Vibration

Chapter 9 of the EIAR assesses the potential for the construction, operation and decommissioning phases of the Proposed Project to result in significant effects on noise and vibration.

During the Proposed Project, noise will be emitted by equipment and vehicles used during construction and decommissioning, and by the turbines, substation and BESS infrastructure during operation. The level of noise emitted by the sources and the distance from those sources to the receptor locations are the main factors determining levels of noise at receptor locations.

Baseline noise monitoring was undertaken at receptor locations surrounding the Main Wind Farm Development Site to establish the existing background noise levels. The data was analysed in conjunction with onsite measured wind speed data.

Vibration generated during the construction and decommissioning of the turbines and onsite infrastructure will be imperceptible to the nearby sensitive receptors. Vibration may be perceived by some residents of dwellings situated close to the cable route during trenching activities. However, this will be for a brief period of less than one day while work is at a minimal distance and will be comparable to that experienced during other highway road works. As such, construction vibration is scoped out the assessment.

Operational vibration from the wind turbines, substation and the battery storage facility are minimal and will not be perceived at the nearest sensitive locations. Therefore, operational vibration is scoped out the assessment.

9.1 Construction Noise

Construction noise has been assessed by a desk-based study of the proposed construction programme and by assuming the Proposed Project is constructed using standard and common methods. Noise levels have been calculated for receiver locations closest to the areas of work and compared with guideline and baseline values. Construction noise, by its very nature, tends to be temporary and highly variable and therefore much less likely to cause adverse effects. It is concluded that noise generated through construction activities on the Main Wind Farm Development Site would be of negligible significant effect.

The potential impacts from noise on residential amenity during the construction of the Over-run Areas, are expected to result in a moderate significant effect. This is due to a single sensitive receptor near Over-run Area 1. Prior to mitigation, short-term construction noise levels at this receptor may exceed permitted levels, resulting in a temporary moderate significant effect in EIA terms. With mitigation, specifically the provision of a 2.5m high close boarded wooden temporary noise barrier to the north of Over-run Area 1, any likely significant effects will be eliminated with no significant residual effects expected

As construction noise typically diminishes to a negligible level at a distance of less than 500m, there are no cumulative construction noise impacts. As set out in **Chapter 9**, cumulative noise

impacts from the construction phase are scoped out due to the large separation distances between the Main Wind Farm Development Site and the nearest cumulative development.

9.2 Operational Noise

Operational turbines emit noise from the rotating blades as they pass through the air. This noise can sometimes be described as having a regular 'swish'. The amount of noise emitted tends to vary depending on the wind speed. When there is little wind the turbine rotors will turn slowly and produce lower noise levels than during high winds when the turbine reaches its maximum output and maximum rotational speed. Background noise levels at nearby noise sensitive receptors (NSRs) will also change with wind speed, increasing in level as wind speeds rise due to wind in trees and around buildings, etc.

Noise levels from the operation of the turbines have been predicted at NSRs around the area most likely to be affected by noise. Surveys have been performed to establish existing baseline noise levels at seven locations. Noise limits have been derived from data about the existing noise environment following the method stipulated in national planning guidance. The assessment considers the potential cumulation of the noise from the Proposed Project along with other proposed, approved and existing wind and non-wind energy developments in line with current best practice; however, no other wind energy developments have been identified that result in a requirement for a cumulative operational wind turbine noise assessment.

Predicted wind turbine operational noise levels have been compared to the limit values to demonstrate that turbines of the type and size which would be installed can operate within the limits so derived. It is concluded therefore that operational noise levels from the Proposed Project will be within levels recommended in national guidance for wind energy schemes and would have no significant effect.

The impact of the noise from the operation of the proposed substation and battery storage infrastructure was assessed in line with the relevant standards. Noise from this infrastructure would be of negligible significant effect (Not Significant in the context of the EIA Directive).

9.3 Decommissioning Noise

Decommissioning noise has been assessed by a desk based study and is lower than that generated during construction due to the reduced number of operations. It is concluded that noise generated through decommissioning activities would be of negligible significant effect.

10.0 Landscape and Visual

Chapter 10 of the EIAR describes the landscape context of the Proposed Project and assesses the likely landscape and visual effects of the Proposed Project on the receiving environment. Although closely linked, landscape and visual effects are assessed separately.

Landscape Impact Assessment (LIA) relates to changes in the physical landscape brought about by the Proposed Project, which may alter its character, and how this is experienced. Visual Impact Assessment (VIA) relates to assessing effects on specific views and on the general visual amenity experienced by people. This deals with how the surroundings of individuals or groups of people may be specifically affected by changes in the content and character of views as a result of the change or loss of existing elements of the landscape and/or introduction of new elements.

Production of the Landscape and Visual Impact Assessment (LVIA) involved baseline work in the form of desktop studies and fieldwork comprising professional evaluation by qualified and experienced Landscape Architects. The LVIA adheres to methodology as prescribed in guidance documents including the EPA (2022) Guidelines and the GLVIA - Third edition (2013).

The Study Area for the Zone of Theoretical Visibility (ZTV) is a 20 km radius from the outermost turbines of the Proposed Project, as the blade tips will be between 179 m – 180 m high. The 'central study area' is the landscape within 5 km of the Main Wind Farm Development Site. Selection of potential Viewpoints (VPs) from key visual receptors were also investigated during fieldwork for actual visibility and sensitivity.

10.1 Landscape Features

Several localised streams, watercourses, and drainage ditches flow through the immediate vicinity of the Main Wind Farm Development Site. A small unnamed river demarcates the northern boundary of the Main Wind Farm Development Site before draining into the sea approximately 1.5 km to the west. The Main Wind Farm Development Site is situated across an extensive area of peatland on low-lying terrain, with drainage formed by localised streams, watercourses and drainage ditches.

The Oweninny River, which drains a large area of bogs, moorland, and mountains, is the nearest notable watercourse to the Main Wind Farm Development Site.

The wider study area 5 km – 20 km comprises a much more varied mix of landscape types, features and areas. The coastal complex in the surrounds of Blacksod Bay encompasses an array of coastal features, and the broad beaches, river estuaries, and small islands contribute to a sense of naturalness and enhance the area's unique character. This landscape holds notable value in relation to tourism, as evidenced by the presence of numerous holiday lets, campsites, and the route of the Wild Atlantic Way (WAW).

Ecological designations within the study area include the following:

- Mullet/Blacksod Bay Complex SAC.
- Blacksod Bay/ Broad Haven SPA.
- Tristia Bog Natural Heritage Area (NHA).
- Tullaghan Bay and Bog NHA.
- Ederglen Bog NHA.
- Mullet/ Blacksod Bay Complex pNHA (Main Wind Farm NHA).
- West Connacht Coast SAC.

10.2 Potential Changes to Landscape

The magnitude of the landscape effect during the operational stage is deemed to be High-medium within the Central Study Area. Beyond 5 km from the Main Wind Farm Development Site, the magnitude of landscape impact is deemed to reduce to Low and Negligible at increasing distances. The Proposed Project will result in a considerable increase in the intensity of built development within both the local and wider landscape context, becoming one of the most prominent forms of built development in the local surrounding landscape context.

When balancing the Medium sensitivity judgement for the landscape of the Main Wind Farm Development Site and the High-medium/Medium landscape sensitivity judgement for the central study area, combined with a High-Medium magnitude of operational stage landscape impact, the significance of effect is considered to be Substantial-moderate/ Negative / Long-term (Not Significant in the context of the EIA Regulations).

During the construction and decommissioning stage, the significance of effect is considered to be Substantial-moderate / Negative / Short-term (Not Significant in the context of the EIA

Regulations) within and immediately around the Main Wind Farm Development Site but reducing quickly with distance and broader context.

10.3 Potential Changes to Views

The visual impact assessment was structured around a series of representative viewpoint locations, with photomontages prepared using a turbine envelope of 150 m rotor diameter, 105 m hub height and 180 m tip height, which represents the most potential for visibility. As can be seen from the comparative photomontages (included in Volume 4 of the EIA Report), there is a relatively subtle difference in the perceived scale of the proposed turbines in all three scenarios which will be difficult to discern from even the nearest visual receptors.

The highest visual effects are associated with the nearest surrounding local roads, with many situated less than 1 km from the nearest turbines. In these locations, the turbines will often be viewed at a prominent scale and will have a dominant visual presence. At these closest properties and roads, the visual change is high-to-medium. This results in a substantial-to-moderate effect which is negative in quality but is ultimately concluded to be not significant in EIA terms.

The residual visual effects along the WAW vary considerably and are largely influenced by proximity to the Proposed Project. The significance of visual effect across sections of the WAW within the study area ranges from Substantial–Moderate to Slight–Imperceptible (Not Significant in the context of the EIA Regulations).

Overall, the significance of visual effect at major route receptors ranged between Moderate–Slight and Slight (Not Significant in the context of the EIA Regulations).

Residual visual effects during the construction and decommissioning stages of the Proposed Project are deemed not significant in accordance with the EIA Regulations.

10.4 Cumulative Wind Project Proposals

The cumulative ZTV map (based on a bare-ground scenario) identifies that the Proposed Project will be visible in isolation across only 3.9% of the Study Area. It is also important to note that over 17.8% of the Study Area will have no visibility of any existing, consented, or proposed turbines. The cumulative effects generated by the Proposed Project are deemed Not Significant.

Whilst the Proposed Project will generate some residual borderline significant landscape and visual effects (i.e. Substantial-moderate) in the immediate surroundings of the Main Wind Farm Development Site and at the nearest surrounding local receptors, it is not considered that the Proposed Project will generate significant landscape and visual effects.

11.0 Shadow Flicker

Chapter 11 of the EIAR presents the results of a Shadow Flicker assessment. Under certain combinations of geographical position, wind direction, weather conditions and times of day and year, the sun may pass behind the rotors of a wind turbine and cast a shadow over the windows of nearby buildings. When the blades rotate and the shadow passes a window, to a person within that room the shadow appears to ‘flick’ on and off; this effect is known as ‘shadow flicker’. The phenomenon occurs only within buildings where shadows are cast across a window opening, and the effects are typically considered up to a maximum distance of 10 times the rotor diameter from each wind turbine. At greater distances the effects are generally considered to be negligible.

The assessment has been undertaken for three potential candidate turbine types. Each assessment has employed a study area based upon ten times the rotor diameter of each

turbine, in accordance with current guidelines. This equates to a study area of 1,490 m for Scenario 1, 1,500 m for Scenario 2, and 1,630 m for Scenario 3. The assessment considers all identified potential shadow flicker sensitive receptors within each study area. For the assessment, residential buildings have been considered sensitive receptors.

The potential for shadow flicker to occur and the intensity and duration of any effects depend upon the following factors:

- The location and orientation of the window relative to the turbines.
- Whether a window has direct, unobstructed line of sight to the turbine rotor.
- The distance of the building from the turbines.
- The turbine geometry.
- The time of year (which impacts the angle of the sun's path across the sky).
- The frequency of cloudless skies (particularly at low elevations above the horizon).
- The wind direction (which impacts on which direction the turbine faces).

A shadow flicker model was created using computer software. This calculates all the possible instances of shadow flicker throughout the year, at all shadow flicker sensitive receptors within the study area, based on the locations of the proposed turbines, as shown on **Figure 11-1** of the EIAR. This assumes that there are clear skies all of the time, all windows have unobstructed views of the turbines, the turbines are always turning, and that all turbines are facing the windows at all times. This overestimates the actual effects, as shadow flicker will only occur some of the time. Turbines will not always be orientated as described or always turning, clouds will obscure the sun and line of sight may be obscured by trees or other obstacles. A correction factor is then applied to the theoretical occurrence figures which considers the average % of time per year that the sun is shining. The 'likely' occurrence of shadow flicker can then be calculated.

A shadow flicker assessment has been undertaken on up to 92 receptors within 10 rotor diameters of the proposed turbines, under three study area scenarios. This approach ensures that all possible permutations in the range have been covered by the assessment – no permutation will result in a greater shadow flicker effect than the worst-case scenario assessed, and all permutations will result in the same significance of effect.

When considering the 'Maximum Theoretical Minutes Per Day' (accounting for any day in which shadow flicker is predicted to occur) then shadow flicker exceeds 30 minutes at 37 receptors under Scenario 1, 41 receptors under Scenario 2, and 49 receptors under Scenario 3.

When considering the 'Total Theoretical Hours Per Year', 31 receptors are predicted to exceed the Wind Energy Development Guidelines 2006 threshold of more than 30 hours per year under Scenario 1, 33 under Scenario 2, and 38 under Scenario 3.

However, when accounting for a more 'likely' scenario, where the average annual sunshine hours are taken into account, 6 receptors are predicted to exceed more than 30 hours per year under Scenario 1 and Scenario 2, and 8 receptors are predicted to exceed more than 30 hours per year under Scenario 3.

The results of the shadow flicker assessment predict that the turbines of the Proposed Project have the potential to introduce shadow flicker impacts at some buildings surrounding the Main Wind Farm Development Site.

However, the Applicant is committed to the implementation of mitigation in the form of a shadow flicker control system and Shutdown Protocol, which allows turbines to be shut down when shadow flicker exceeds the 30 hours per year (or 30 minutes per day) significance

thresholds, such that there will be no residual significant effects. The shadow flicker control modules can also be programmed to a zero shadow flicker approach in line with the 2019 Draft Revised Wind Energy Development Guidelines should they be adopted. This will be undertaken by shutting down turbines during times when wind and climactic conditions are such that shadow flicker could occur, using the turbines inbuilt shadow flicker control module.

The implementation of the proposed mitigation measures, namely a shadow flicker control system and shutdown protocol, will ensure that shadow flicker at all residential buildings will not exceed significance thresholds for the Proposed Project or cumulatively.

12.0 Cultural Heritage

Chapter 12 of the EIAR presents the results of a cultural heritage impact assessment encompassing both buried archaeological remains and above ground-built heritage. The chapter assesses the likely significant effects of the Proposed Project on the surrounding archaeological and cultural heritage landscape (for example, National Monuments and Protected Structures).

The assessment methodology used to assess the direct and indirect effects of the Proposed Project upon Cultural Heritage complies with the 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'. In accordance with the EPA Environmental Impact Assessment Guidelines, the assessment identifies effects as either direct or indirect, adverse or beneficial, and short-term, long-term, or permanent. Direct effects are those which change the cultural heritage significance of an asset through physical alteration. For purposes of the assessment, indirect effects are those effects which cause change within the asset's setting and thereby change the cultural heritage significance of an asset.

The Cultural Heritage baseline includes an initial assessment based on a desktop review of the accessible archaeological and cultural heritage data. Site assessments were also undertaken for the Main Wind Farm Development Site and for the Turbine Delivery Route (TDR) Over-run Areas to establish direct and indirect impacts upon receptors in proximity to the Site. A 1 km-radius study area was implemented to inform the predictive model of unknown buried archaeology, and a 5 km-radius study area was used to inform the settings assessment, in conjunction with a Zone of Theoretical Visibility (ZTV).

The assets scoped in for assessment as being susceptible to direct, indirect or cumulative impacts included the Crannog, Dumha Locha (MA025-004) for potential direct impacts. Assets scoped in for further assessment for potential setting impacts (indirect effects) included the Megalithic tomb - court tomb (MA026-002001-) and the Penal Mass station (MA026-007----). All other assets were concluded to have no potential impacts upon their setting by the Proposed Project during the scoping exercise.

Construction Phase

Regarding construction phase effects, indirect effects have been scoped out as these will be temporary and not exceed the impacts of the proposed turbines on the setting of assets. Mitigation through design has taken place, by avoiding the recorded asset within the Main Wind Farm Development Site to avoid direct effects. The closest turbine is located c.0.23 km away from the crannog (MA025-004) and as such is not predicted to cause an impact. Therefore, no magnitude of impacts is predicted, resulting in no significance of effect. All TDR Over-run Areas were identified as having a negligible potential for unknown archaeological remains, and as such there is no direct impact predicted upon archaeological remains. Should any palaeoenvironmental materials within the Site be preserved within the peat, it is unlikely that these would comprise substantial materials due to the likely low level of activity across the Site and the disturbances caused by extensive modern drainage ditches, peat cutting and

commercial forestry. In the event that previously unrecorded archaeological materials or features are identified during construction, works will cease in the affected area and further archaeological mitigation, including a proportionate level of archaeological recording, will be implemented, pending agreement with the Department of Housing, Local Government and Heritage and the County Mayo Archaeological Advisor.

Operational, Construction & Decommissioning Phase

During the operational phase, the assessment focuses on potential setting impacts from the presence of the turbines. No significant effects were identified for the scoped-in assets. The decommissioning of the wind farm would not cause any additional direct impacts upon archaeological remains, as it would only occur within the existing footprint of the Main Wind Farm Development Site.

Where direct effects on known archaeological features have been identified, mitigation by design has been proposed wherever possible. In the event that previously unrecorded archaeological assets are discovered during groundworks, mitigation will be achieved through a proportionate level of archaeological recording. This process will be agreed upon with the Department of Housing, Local Government and Heritage and the County Mayo Archaeological Advisor. Following the implementation of these mitigation and monitoring measures, no significant residual effects on Cultural Heritage will occur.

Cumulative Effects

A cumulative effects assessment considered all developments identified in the EIAR, specifically other wind energy developments within 10 km of the affected cultural heritage assets. No significant cumulative effects are predicted. A statement of the anticipated residual effects, i.e., following the implementation of the relevant mitigation measures, has been provided. Following the implementation of these mitigation and monitoring measures, no significant residual effects on Cultural Heritage will occur.

13.0 Material Assets

Chapter 13 of the EIAR assesses the impacts of the Proposed Project on material assets. Material assets refer to built services and infrastructure. The consideration of Material Assets therefore included built services such as electricity, aviation, telecommunications, gas, water supply infrastructure and sewerage, waste management, as well as land use.

The Study Area for the assessment relates primarily to the Main Wind Farm Development Site and those dwellings and buildings on the roads immediately surrounding it, which rely on the services that could be impacted. Desk-based assessments and consultation with key service providers have been undertaken to identify the physical infrastructure in the study area.

The Main Wind Farm Development Site contains approximately 178 hectares of forestry. Tree felling will be required as part of the Proposed Project. Between 27.17 and 31.37 hectares of existing forestry, comprising mostly coniferous tree species, will be felled to facilitate the Proposed Project.

Following the grant of planning permission, equivalent areas of forestry will be replanted in accordance with Forest Service policy and subject to licence.

There will be disturbance to soils and subsoils within the Main Wind Farm Development Site. During the construction phase, temporary land take of c. 11.81 ha (consisting of crane hardstands and a construction compound) will be required. Following completion of construction, approximately half of the total area of crane hardstands and all of the construction compound will be decommissioned and removed.

While the majority of the Main Wind Farm Development Site will remain in its current use, the footprint of the proposed infrastructure will result in a permanent change in land use for those

specific areas. Material will be excavated at the turbine locations and associated infrastructure, onsite substation and BESS.

Following decommissioning, the additional access roads will be retained for the forestry indefinitely. Regarding aviation, the proposed turbines are located outside the Obstacle Limitation Surfaces (OLS) for Ireland West Airport. Turbines at the Main Wind Farm Development Site will not penetrate the ICAO Annex 15 Aerodrome Surface for Ireland West Airport. The Irish Aviation Authority (IAA) requested standard conditions and may request that the turbines be included in the IAA Aeronautical Electronic Obstacle Data Sets. The IAA has requested standard conditions regarding lighting and coordinates, which will be complied with. Overall, the Proposed Project will have no significant impact on aviation safety or operations.

Private utilities and telecommunications companies were consulted. A review of Eir mapping indicates that there is Eir infrastructure along the western boundary of the Main Wind Farm Development Site, adjacent to the Southern Cluster. Ongoing engagement will be carried out with Eirgrid and ESB Networks throughout the implementation of the Proposed Project. Gas Networks Ireland stated no proximity to gas pipelines. There will be no long-term impacts to water supply or wastewater infrastructure as a result of the Proposed Project. Overall, following the implementation of standard protection measures and ongoing consultation with service providers, the Proposed Project will have no significant impact on electricity, telecommunications, gas, water supply, or wastewater infrastructure.

The construction, operational and decommissioning phases of the Proposed Project will result in the generation of standard construction waste. The following categories of waste will most likely be generated during the construction phase of the Proposed Project: construction and demolition waste, waste oil and hydrocarbons, paper and cardboard, timber and steel, and municipal solid waste. The contribution of the Proposed Project to a transition to a green economy are considered to be beneficial to an overall move to reduce waste in society.

The cumulative assessment considered the Proposed Project in conjunction with other existing, permitted or proposed projects in the vicinity. No cumulative effects on Material Assets are predicted. In conclusion, no significant effects on Material Assets are predicted during the construction, operational or decommissioning phases of the Proposed Project.

14.0 Traffic

Chapter 14 of the EIAR assesses the effects of traffic and transport arising from the Proposed Project and the potential for them to be significant. The assessment focuses primarily on the construction phase, as this is when the highest levels of traffic and associated disruption are expected. The operational and decommissioning phases are predicted to have negligible effects and are therefore scoped out of detailed assessment.

14.1 Study Area and Key Routes

The Main Wind Farm Development Site is located in a rural area near Gweesalia, County Mayo, and is accessed via the L5252 branching from the L1206, which in turn connects to the R313. The wider delivery route for wind turbine components originates from Killybegs Port, passing through the N56, N15, N4, and N59, before reaching the R313, L1206, and L5252.

- Three main roads were surveyed to establish baseline traffic conditions: N59 (south of Bangor Erris) – a regional road with an average weekday flow of ~2,397 vehicles, 4% of which are Heavy Goods Vehicles (HGVs).
- L1206 – a lightly used local road with ~943 daily vehicles and no recorded HGVs.

- L5252 – the direct access to the site, with just 61 vehicles per day, all light vehicles.

14.2 Construction Traffic and Activities

The construction phase is anticipated to last approximately 18-24 months, during which various activities will occur, including site access upgrades, turbine foundation installation, internal cabling, onsite substation and BESS construction, turbine delivery and erection.

In the assessment traffic is referred to as deliveries, trips and movements:

- Deliveries and movements refer to vehicles arriving and departing from the Main Wind Farm Development Site and count the individual vehicle. For example, one delivery/movement includes that vehicle arriving and then departing from the Main Wind Farm Development Site.
- Trips refer to the individual processes of arriving or departing from the Main Wind Farm Development Site and count the number of times vehicles moved into or out of the Main Wind Farm Development Site. For example, one delivery/movement requires two trips, the arrival and departure.

Construction traffic will involve two main categories:

- Conventional HGVs delivering materials such as stone, concrete, steel reinforcement, and site cabins.
- Abnormal Indivisible Loads (AILs) for transporting large components including tower sections, blades, and nacelles. A total of 234 AIL movements are projected for turbine deliveries.

The peak construction month is expected to generate up to 311 HGV movements and 51 light vehicle movements per day, leading to a worst-case scenario of around 362 daily two-way vehicle trips.

14.3 Traffic Effects and Mitigation

The assessment follows Institute of Environmental Management and Assessment (IEMA) guidelines to determine the significance of traffic effects, which are based on the percentage increase in vehicle flows compared to existing baseline traffic levels.

Key findings include:

- The N59, while experiencing an increase in total traffic and HGVs during peak construction, is a robust national route with a Low receptor sensitivity. The greatest magnitude impact is assessed to result in an effect that is of Moderate Significance (Significant). However, for the residual effect, post mitigation and resulting from the temporary nature of the construction traffic, it is assed that the effect will be temporary and not significant.
- The L1206, while experiencing an increase in total traffic and HGVs during peak construction, is a remote rural route with a Low receptor sensitivity. The greatest magnitude impact is assessed to result in an effect that is of Moderate Significance (Significant). However, for the residual effect, post mitigation and resulting from the temporary nature of the construction traffic, it is assed that the effect will be temporary and not significant.

- The L5252, while experiencing an increase in total traffic and HGVs during peak construction, is a remote rural route with a Low receptor sensitivity. The greatest magnitude impact is assessed to result in an effect that is of Moderate Significance (Significant). However, for the residual effect, post mitigation and resulting from the temporary nature of the construction traffic, it is assed that the effect will be temporary and not significant.

To minimise disruption:

- A CTMP (**Technical Appendix 14-4**) will be implemented, covering vehicle routing, signage, road condition monitoring, and engagement with Mayo County Council.
- All construction HGVs and AILs will access the Main Wind Farm Development Site via approved routes, avoiding sensitive areas and peak traffic times.
- Temporary traffic management measures will be in place during GCR trenching works, which require partial road closures, with safe diversions provided. This will be dealt with under a separate planning application.

Cumulative Effects

The assessment also considers the impact of other developments in the area, such as Oweninny Phase 3 Wind Farm, Sheskin South Wind Farm, and the Mayo Green Hydrogen Plant. Cumulative traffic from these projects, if constructed concurrently, could further increase flows on shared routes like the N59. Even with these added effects, overall effects remain temporary and not significant with the proposed mitigation measures.

Operational Phase

As stated, the operational phase has been scoped out of detailed assessment. This is because, the Proposed Project will only generate infrequent maintenance traffic, such as small vans or 4x4s, well within the normal variation of rural traffic patterns.

Decommissioning Phase

Similarly, the decommissioning phase has also been scoped out of detailed assessment. This is because the decommissioning (at the end of the 35-year design life) is expected to involve far less traffic than construction, with turbine components removed in smaller sections and no abnormal loads required.

While the Proposed Project will lead to increased construction traffic, principally on the L1206 and L5252, these effects are temporary, localised, and manageable with proper planning and mitigation. With the implementation of the CTMP (**Technical Appendix 14-4**), no significant long-term effects on the local or regional transport network are anticipated.

15.0 Major Accidents and Disasters

Chapter 15 of the EIAR considers the vulnerability of the Main Wind Farm Development Site, as well as potential risks of the Proposed Project, to result in major accidents and/or natural disasters. In the assessment of potential vulnerability and risks, both embedded and additional mitigation measures that will be implemented throughout the Main Wind Farm Development Site are clearly identified.

A desk-study based onsite knowledge, online mapping and consideration of applicable guidance has been completed to establish the baseline environment for which the risk assessment. The approach to identifying and quantifying risks associated with the Proposed Project by means of a site-specific risk assessment is based on the EPA 'Guidance on

Assessing and Costing Environmental Liabilities' document. Risks have been reviewed through the identification of reasonably foreseeable risks in consultation with relevant contributors to this EIAR. The identification of risks has focused on non-standard but plausible incidents that could occur at or as a result of the Proposed Project during construction, operation and decommissioning.

It is considered that the overall vulnerability of the Proposed Project to risks of major accidents and natural disasters is low. It is assessed that the Proposed Project carries no likely significant effects with respect to major accidents or disasters, nor is it vulnerable to potential disasters or accidents, including both natural and man-made incidents. The construction, operation and decommissioning stages pose similar risks in terms of major accidents and disasters. As the construction and decommissioning stage will be limited to a temporary period of time, it is considered that there is a low risk of major accidents or disasters.

An Environmental Management System (EMS) will be put in place for the Proposed Project. The operator will develop the EMS in accordance with ISO14001:2015, applying for accreditation when operational. The EMS will include accident prevention and emergency response procedures. The Applicant has a duty to ensure that all reasonable measures are taken to avoid the potential for any emergencies to arise. In the unlikely event of a major emergency arising, An Garda Síochána, the Health Service Executive, and Mayo County Council are the principal response agencies (PRAs) charged with managing the response to emergency situations which arise in the county. The Health and Safety Authority will also be notified in accordance with relevant statutory requirements.

16.0 Interactions

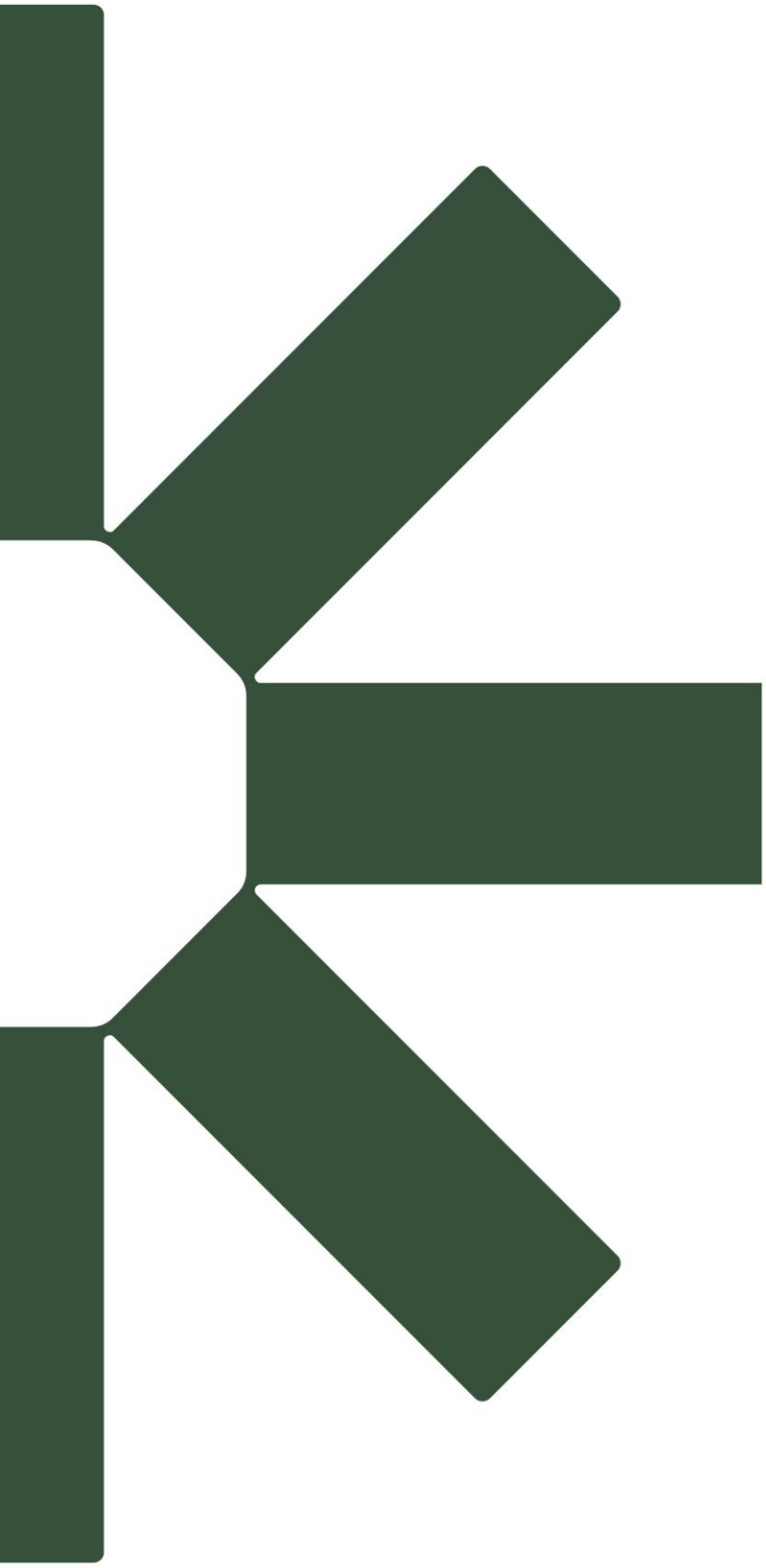
The purpose of the Interactions Chapter (**Chapter 16** of the EIAR) is to draw attention to significant interactions and interdependencies between one topic and another

A matrix is provided within the chapter to provide a visual representation of where there are potential interactions between environmental topic areas in the context of the Proposed Project. These interactions have been identified for the construction, operational, and decommissioning phases. A supporting commentary is also provided, which explains the main interactions of note given the specific circumstances of the project and its location.

The review of potential interactive effects did not identify any further interactions beyond those that were identified within each of the technical assessments of the EIAR. Where any potential interactive negative impacts had been identified, appropriate mitigation measures were found to be already included in the relevant sections (**Chapters 4 to 15**) of the EIAR. The implementation of these mitigation measures will reduce or remove the potential for these effects.

17.0 Schedule of Mitigation Measures

Chapter 17 of the EIAR consolidates all the proposed mitigation measures identified in the EIAR in one concise table for the Proposed Project and is intended to assist An Coimisiún Pleanála in its role as the competent authority and in identifying any necessary planning conditions required to implement identified mitigation measures.



Making Sustainability Happen

460000 470000 480000 490000 500000

840000 830000 820000 810000

402.064443.00001.0063.0 Site Location

Broadhaven Bay
Béal an Mhuirthead
Loch na Ceathrún Móire
Blacksod Bay - Cuan an Fhóid Duibh
Achill Island - Acaill
Keel Beach
Wild Nephin National Park
N59
Mayo

N

0 2.5 5
Kilometres

LEGEND

- Proposed Development Site Boundary
- Proposed Turbine Location

RWE

SLR

MUINGMORE WIND FARM

PROJECT DESCRIPTION

SITE LOCATION

FIGURE 2-1

Scale 1:150,000 @ A3

Date MARCH 2026

474000 476000 478000

824000 822000

L1205 L1206

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13

1 2 3

TCC1 TCC2

Saint Colmcille's Church

Béal an Mhuirthead

Blacksod Bay / Cuan an Fhóid Duibh

N

0 1 2

Kilometres

LEGEND

- Proposed Development Site Boundary
- Proposed Turbine Location
- Proposed Site Access Location
- Proposed Met Mast Location
- Proposed New Access Track
- Proposed Upgraded Access Track
- Proposed Grid Connection Route (Subject to Separate Planning Application)
- Proposed Crane Pad
- Proposed Substation
- Proposed Battery Energy Storage System (BESS) Compound
- Proposed Temporary Construction Compound (TCC)
- Proposed Attenuation Basin

RWE

SLR

MUINGMORE WIND FARM

PROJECT DESCRIPTION

SITE LAYOUT

FIGURE 2-3

Scale 1:18,000 @ A3

Date MARCH 2026

402.064443.00001.0065.0 Site Layout