Planning and Environmental Consultants



# Environmental Impact Assessment Report (EIAR)

## Gannow Renewable Energy Development, Co. Galway

Non-Technical Summary

# NON-TECHNICAL SUMMARY



## 1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of the Applicant, Gannow Ltd. who intends to apply to Galway County Council (GCC) for planning permission to construct a renewable energy development comprising 8 no. wind turbines, and associated infrastructure in the townlands of Gannow and adjacent townlands, near Athenry in Co. Galway, including a 38kV on-site substation and associated works, and underground 38kV cabling to connect to the national grid at Cashla 220kV substation, in the townland of Barrettspark, Co. Galway.

For the purposes of this EIAR:

- The 'Proposed Project' refers to the entirety of the project ('Proposed Wind Farm' and 'Proposed Grid Connection' as described below) for the purposes of this EIAR in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- The 'Proposed Wind Farm' refers to the 8 no. turbines and associated foundations and hardstanding areas, including access roads, underground internal cabling, permanent meteorological mast, temporary construction compounds, peat and spoil management areas, biodiversity enhancement measures, tree felling and vegetation removal, site drainage, operational stage signage, 38kV onsite substation, and all ancillary works and apparatus.
    - The 'proposed turbines' refers to the 8 no. turbines associated with the Proposed Wind Farm as outlined above.
- The 'Proposed Grid Connection' refers to the 38kV underground cabling connection from the proposed onsite 38kV substation to the existing Cashla 220kV substation, and all ancillary works and apparatus.
- The 'Site' refers to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approximately 884 hectares.
- The 'Proposed Wind Farm site' refers to the portion of the Site containing the proposed turbines and ancillary infrastructure but excluding the portion of the Site surrounding the Proposed Grid Connection.

This EIAR, along with a Natura Impact Statement ('NIS'), will accompany the planning application for the Proposed Project which will be made to GCC. Both the EIAR and NIS contain the information necessary for GCC to complete the Environmental Impact Assessment and Appropriate Assessment as required for this planning application.

Both the EIAR and NIS take into account the combined impacts identified across the various EIAR disciplines of the Proposed Project.

For clarity in this EIAR, all elements of the Proposed Project will be assessed cumulatively and in combination with other projects to aid the competent authority in carrying out an EIA.

### Brief Description of the Proposed Project

The Proposed Project will comprise the construction of 8 No. wind turbines with *an overall turbine total tip height range of 178m - 185m* and all associated works, including an onsite 38kV substation, underground cabling (20kV/33kV & 38kV), and all associated works and apparatus. The full description of the Proposed Project is detailed in Chapter 4 of this EIAR.

The development description for the current planning application as it appears in the public notices is as follows: The proposed development will consist of the provision of;

i. *8 no. wind turbines with an overall turbine total tip height range of 178m - 185m, a rotor diameter range of 149m - 163m, and turbine hub height range of 101m - 104m, and associated foundations and hardstanding areas;*
ii. *A permanent 38kV substation compound (including a control building (157.6 sq. m) with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, storage containers, wastewater holding tank, site drainage and all ancillary works);*
iii. *Permanent underground electrical (38kV) and communications cabling to the existing Cashla Substation in the townland of Barrettspark (including joint bays, communication and earth sheath link chambers and all ancillary works along the route). This cabling route is primarily located within the public road corridor which includes protected structures (RPS No. 3747, RPS No. 146).*
iv. *Underground electrical (20/33kV) and communications cabling connecting the wind turbines and meteorological mast to the proposed on-site substation;*
v. *2 no. temporary construction compounds (including site offices and welfare facilities (with a combined floor area of 202.5 sq.m));*
vi. *A meteorological mast with a height of 30 metres, security fencing and associated foundation and hard-standing area;*
vii. *Upgrade of existing site tracks/ roads and provision of new site access roads, junctions and hardstand areas, including a new site entrance off the L3115;*
viii. *Peat and Spoil Management Areas;*
ix. *Tree felling and vegetation removal;*
x. *Biodiversity enhancement measures (including peatland habitat enhancement, Marsh Fritillary habitat enhancement and management, establishment of hedgerows and native woodland planting);*
xi. *Site drainage;*
xii. *Operational stage site signage; and*
xiii. *All ancillary works and apparatus.*

This application is seeking a ten-year permission. Current and future wind turbine generator technology will ensure that the wind turbine model, chosen for the Proposed Project, will have an operational lifespan greater than the 35-year operational life that is being sought as part of the planning application.

Modern wind turbine generators currently have a potential generating capacity in the 4 to 7 MW range, with the generating capacity continuing to evolve upwards as technology improvements are achieved by the turbine manufacturers. For the purposes of this EIAR it is assumed that the wind turbine model installed as part of the Proposed Project will have a generating capacity of 6.1MW. Therefore, on this basis, the proposed 8 no. wind turbines would have a combined generating capacity of 48.8MW. The actual turbine procured as part of a competitive tender process may have a generating potential that is marginally lower or greater than the 6.1MW turbine described in the EIAR. Irrespective of the power output of the actual turbine procured, the conclusions of the EIAR will not be materially affected.

## Applicant

The Applicant for the Proposed Project, Gannow Ltd., is an associated company of Enerco Energy Ltd., which is an Irish-owned, Cork-based company with extensive experience in the design, construction and operation of wind energy developments throughout Ireland, with projects currently operating or in construction in Counties Cork, Kerry, Limerick, Clare, Galway, Mayo and Donegal.

By Q2 2025, Enerco associated companies had over 925 Megawatts (MW) of wind generating capacity in commercial operation or in construction, with a further c.500MW of projects at various stages in its portfolio to assist in meeting Ireland's renewable energy targets.

## Need for the Proposed Project



Ireland faces significant challenges to its efforts to meet EU targets for renewable energy by 2030 and its commitment to transition to a low carbon economy by 2050. Further detail can be found in Chapter 2 of this EIAR.

The Proposed Project provides the opportunity to capture an additional part of County Galway's valuable renewable energy resource. If the Proposed Project were not to proceed, this opportunity to harness the wind energy resource of County Galway's valuable renewable energy resource would be lost, as would the opportunity to further contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions.

## Economic Benefits

The Proposed Project will have both long-term and short-term benefits for the local economy including additional income to local landowners, job creation, work opportunities for local businesses and service providers, local authority commercial rate payments and a Community Benefit Fund.

Commercial rate payments from the Proposed Project will be provided to GCC each year, which will be redirected to the provision of public services within Co. Galway. These services include provisions such as road upkeep, fire services, environmental protection, street lighting, footpath maintenance etc. along with other community and cultural support initiatives.

It is estimated that the Proposed Project has the potential to create up to 100 jobs during the construction phase and 2-3 jobs during operational and maintenance phases. During construction, additional indirect employment will be created in the region through the supply of services and materials. There will also be income generated by local employment from the purchase of local services i.e., travel, goods and lodgings. Further details on employment associated with the Proposed Project are presented in Chapter 5 of this EIAR, Population and Human Health.

Should the Proposed Project receive planning permission, there are substantial opportunities available for the local area in the form of Community Benefit Funds. Based on the current proposal, should the Proposed Project enter the Renewable Energy Support Scheme (RESS), the proposed Community Benefit Fund would attract a community contribution in the region of approximately €300,000/year for the first 15 years of operation, to be used by the local community over the lifetime of the Proposed Project (based on the current RESS T&C's). The value of this fund will be directly proportional to the energy produced by the Proposed Wind Farm and will support and facilitate projects and initiatives in the area.

## Purpose and Scope of the EIAR

The purpose of this EIAR is to document the current state of the environment on and in the vicinity of the Site and to quantify the likely significant effects of the Proposed Project on the environment. The compilation of this document serves to highlight any areas where mitigation measures may be necessary in order to protect the surrounding environment from the possibility of any negative impacts arising from the Proposed Project. This EIAR uses the grouped structure method to describe the existing environment, the potential impacts of the Proposed Project thereon and the proposed mitigation measures. Background information relating to the Proposed Project, scoping and consultation undertaken and a description of the Proposed Project are presented in separate sections.

The EIAR project team comprises a multidisciplinary team of experts with extensive experience in the assessment of wind energy developments and in their relevant area of expertise. Each chapter of this EIAR has been prepared by a competent expert in the subject matter. The chapters of this EIAR are as follows:

- *Introduction*
- *Background to the Proposed Project*
- *Considerations of Reasonable Alternatives*
- *Description of the Proposed Project*
- *Population and Human Health*
- *Biodiversity (excluding Birds)*
- *Birds*
- *Land, Soils and Geology*
- *Water*
- *Air Quality*
- *Climate*
- *Noise and Vibration*
- *Landscape and Visual*
- *Archaeology, Architectural and Cultural Heritage*
- *Material Assets (including Traffic and Transport, Telecommunications and Aviation)*
- *Major Accidents and Natural Disasters*
- *Interactions of the Foregoing*
- *Schedule of Mitigation Measures*

A Natura Impact Statement has also been prepared in line with the requirements of the Habitats Directive and accompanies this planning application.

## Assessment of Turbine Parameter Range within the EIAR

As detailed above, and further detailed in Chapter 4 of this EIAR, the Proposed Wind Farm will comprise the construction of 8 No. wind turbines with the following parameters:

- Total tip height range of 178m – 185m,
- Rotor diameter range of 149m – 163m,
- Hub height range of 101m to 104m

For the purposes of this EIAR, various types and sizes of wind turbines, within the proposed ranges outlined above, have been selected and considered in the relevant sections of the EIAR. This allows for a robust assessment of the proposed range of turbines. Turbine design parameters have a bearing on the assessment of shadow flicker, noise, visual impact, traffic and transport and ecology (specifically birds), and Table 1-3 in Chapter 1 details the specific sections within the EIAR where turbine scenarios within the turbine parameter range are assessed.

It should also be noted that the assessment of the development footprint of the Proposed Project, within this EIAR, is based on the maximum potential footprint for all of the infrastructural elements. This precautionary approach is taken as the assessment of the maximum development footprint will, in the absence of mitigation measures, give rise to the greatest potential for significant effects. Should the development footprint be less than the maximum, the potential for significant effects will also be reduced.

# 2 Background to the Proposed Project



Chapter 2 of the EIAR presents information on renewable energy and climate change policy and targets, the strategic, regional and local planning context for the Proposed Project, planning history, scoping and consultation, as well as setting out nature of the cumulative impact assessment process undertaken.

The Proposed Project will be known as the 'Gannow Renewable Energy Development,' and is being brought forward in response to local, regional, national and European policy regarding Ireland's transition to a low-carbon economy, associated climate change policy objectives and to reduce Ireland's dependence on imported fossil fuels for the production of electricity.

A gradual shift towards increasing Ireland's use of renewable energy is no longer viable. There is an urgency now to ensure real changes occur without delay. Renewable energy development is recognised as a vital component of Ireland's strategy to tackle the challenges of combating climate change and ensuring a secure supply of energy. Ireland is heavily dependent on the importation of fossil fuels to meet its energy needs. In 2023, over 81% of Ireland's energy was imported from abroad, higher than the European Union (EU) average of almost 60% (National Energy Security Framework, 2022). This high dependency on energy imports is highly risky, and Ireland is currently extremely vulnerable both in terms of meeting future energy needs and ensuring price stability. As such, expanding indigenous renewable energy supply is critical for energy security and price stability. The provision of the Proposed Project would aid in achieving the shift to decarbonising the electricity sector and energy security in Ireland.

Ireland's Climate Action Plan 2024 and Climate Action Plan 2025 sets ambitious yet essential targets for renewable energy, including 9GW of onshore wind capacity—with at least 5GW to be delivered by 2030—and an 80% share of renewable electricity by the same year. However, multiple assessments, including the Climate Change Advisory Council (CCAC) Annual Review and the Environmental Protection Agency (EPA) emissions projections, confirm that Ireland is not on track to meet these targets. Significant gaps remain in renewable energy deployment, particularly in grid capacity expansion, as well as onshore and offshore wind energy development, while continued reliance on fossil fuels threatens national and EU climate commitments.

Failure to meet binding EU targets will expose Ireland to financial penalties, increased carbon credit costs, and continued dependence on fossil fuel imports—posing serious risks to energy security and economic stability. Furthermore, Ireland's national interest, as outlined in Section 143(1) of the Act requires the rapid expansion of renewable energy, making this a matter of strategic economic and social importance.

Every viable renewable energy project plays a crucial role in meeting Ireland's climate targets. The approval of well-planned, appropriately located renewable energy projects, such as the Proposed Project is not just beneficial—it is imperative. Without decisive action to facilitate renewable energy deployment, Ireland risks missing national and EU commitments, incurring financial penalties, and undermining energy security.

## Local Planning Policy

It is considered that the Proposed Project is consistent with the policies and objectives of the Adopted Galway County Development Plan 2022-2028.

### Galway County Development Plan 2022-2028

The Galway County Development Plan 2022-2028 (GCDP) came into effect on 20th June 2022. The GCDP is the statutory county development plan in effect for the County and provides the framework against which all planning applications for development in the county are assessed. The policies and

objectives set out within the GCDP have maintained strong linkages with the key aims and themes set out within the previous development plan. Climate change is again emphasised as one of the greatest global challenges, with GCC acknowledging that continual action is needed for Galway to become a low carbon and climate resilient county.



The importance of climate action is outlined at the beginning of 'Chapter 14: Climate Change, Energy and Renewable Resource' of the GCDP as it states, *"climate action is integrated into every chapter and strategy of the plan"*. The strategic aim of Chapter 14 is outlined below:

> *"To reduce the carbon footprint by integrating climate action into the planning system in support of national targets, support indigenous renewable sources in order to reduce dependence on fossil fuels and improve security of supply and the move to a competitive low carbon economy."*

Furthermore, the GCDP includes the following policies in relation to climate action and reducing GHG emissions, which aligns the County with wider European, national and regional objectives;

- ***CC1: Climate Change*** *- Support and facilitate the implementation of European, National and Regional objectives for climate adaptation and mitigation taking into account other provisions of the Plan (including those relating to land use planning, energy, sustainable mobility, flood risk management and drainage) and having regard to the Climate mitigation and adaptation measures.*
- ***CC2: Transition to a low carbon, climate-resilient society*** *- It is a policy objective of the Planning Authority to support the transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency.*

Regarding renewable energy, the GCDP maintains the underlying theme of 'a reduction in carbon footprint by integrating climate action into the planning system in support of national targets, supporting indigenous renewable sources in order to reduce dependence on fossil fuels and to improve the security of supply, '. There are a number of Policy Objectives relating to renewable energy, including the following:

- ***Objective RE 1: Renewable Energy Generation and ancillary facilities*** *– To facilitate and support appropriate levels of renewable energy generation and ancillary facilities in the county to meet national, regional and county renewable energy targets, to facilitate a reduction in CO2 emissions and the promotion of a low carbon economy.*
- ***Objective RE 2: Local Authority Renewable Energy Strategy*** *- The policy objectives and Development Management Standards set out in the Local Authority Renewable Energy Strategy for County Galway shall be deemed the policy objectives and development management standards for the purpose of the Galway County Development Plan 2022-2028.*
- ***Objective RE 3: Wind Energy Developments*** *– Promote and facilitate wind farm development in suitable locations, having regard to areas of the County designated for this purpose in the Local Authority Renewable Energy Strategy. The Planning Authority will assess any planning application proposals for wind energy production in accordance with the Local Authority Renewable Energy Strategy, the DoEHLG Guidelines for Planning Authorities on Wind Energy Development, 2006 (or any updated/superseded documents), having due regard to the Habitats Directive and to the detailed policy objectives and Development Standards set out in the Local Authority Renewable Energy Strategy.*
- ***Objective RE 5: Renewable Energy Strategy*** *- Support and facilitate the sustainable development and the use of appropriate renewable energy resources and associated infrastructure within the County having due regard to the Habitats Directive and to the detailed policy objectives and Development Standards set out in the Local Authority Renewable Energy Strategy as follows:*
  - *Renewable Energy Transmission*
  - *Renewable Energy Generation*

- *'Strategic Areas' for renewable energy development*
- *Onshore Wind Energy*
- *Solar Energy*
- *Bioenergy/Anaerobic Digestion*
- *Micro-renewables*
- *Marine Renewables*
- *Hydro Energy*
- *Geothermal Energy*
- *Alternative Technologies*
- *Energy Efficiency & Conservation*
- *Sustainable Transport*
- *Auto production*
- *Battery Storage*
- *Repowering/Renewing Wind Energy Developments*
- *Community Ownership*

- ***RE 7 Renewable Energy Generation -Transition to a Low Carbon Economy*** *- To facilitate and support appropriate levels of renewable energy generation in County Galway, considering the need to transition to a low carbon economy and to reduce dependency on fossil fuels.*
- ***EG1 Enhancement of Electricity Infrastructure*** *- Support and promote the sustainable improvement and expansion of the electricity transmission and distribution network that supply the County, while taking into consideration landscape, residential, amenity and environmental considerations.*
- ***EG2 Delivery of Electricity and Gas Infrastructure*** *- Support the provision and extension of electricity and gas transmission networks within the county which are critical to the economic development of the County subject to environmental quality, landscape, wildlife, habitats or residential amenity.*
- ***EG3 Power Capacity*** *- To support and liaise with statutory and other energy providers in relation to power generation, in order to ensure adequate power capacity for the existing and future needs of the County.*
- ***EG4 Ireland's Grid Development Strategy*** *- Support the implementation of Ireland's Grid Development Strategy, while taking into account landscape, residential, amenity and environmental considerations.*

**Galway County Council Climate Action Plan 2024-2029**

The Galway County Council Local Authority Climate Action Plan 2024-2029 (Galway LACAP), published in March 2024, sets out GCC's intentions to create a low carbon and climate resilient County. It also aligns itself with international and national policy regarding climate action, highlighting the Climate Act and Ireland's legally binding target of a 51% reduction in GHG emissions by 2030.

The main ambition of the Plan is "to meet its own emissions and energy efficiency targets. They are a 51% reduction in greenhouse gas (GHG) emissions and a 50% improvement in energy efficiency by 2030,"

The Galway CAP is divided into several sections, setting out their scope and ambition of the LACAP, relative to national legally binding targets. Objectives and Actions within Galway's CAP clearly set out the Council's intentions to reduce GHG emissions within the electricity sector through the development of renewable energy infrastructure projects. These include:

- **Action GL3.5 –** Advance the implementation of climate-related objectives in the County Development Plan and Local Authority Renewable Energy Strategy

- **Action EB 1.1:** Support renewable energy research and development at the commercial and community scale whilst advocating and exerting influence to ensure such projects promote climate action co-benefits and do not contravene relevant environmental protection requirements.

**Galway County Development Plan 2022 – 2028: Local Authority Renewable Energy Strategy**

County Galway's Local Authority Renewable Energy Strategy (LARES) is included as Appendix 1 of the GCDP. The LARES for Galway sets out guidance designed to allow County Galway to both contribute to meeting the national legally binding targets while also capitalising on those opportunities associated with the generation and harnessing of renewable energy in a sustainable manner. The vision as outlined in the LARES is as follows:

> *"To facilitate and encourage renewable energy generation and a low carbon energy transition across County Galway, in the interests of future generations, through the application of energy efficient technology and the harnessing of indigenous renewable energy resources, whilst respecting the need to conserve areas of environmental, cultural and economic value."*

The LARES "*encompasses the entire county of Galway and comprehensively considers the key sources of renewable energy in the county. The role of non-renewable energy, such as gas, is also incorporated into the LARES to facilitate the transition to a low carbon economy.*"

One of the main aims of the LARES is to set out an integrated, comprehensive suite of policy objectives for renewable energy development in County Galway. Key objectives in the LARES that are relevant to the Proposed Project, include the following:

- ***LARES Policy Objective 3: Renewable Energy Generation –*** *To facilitate and support appropriate levels of renewable energy generation in County Galway, in light of the need to* ***LARES Policy Objective 13: Wind Energy Generation –*** *To increase renewable energy generation levels from wind energy developments in County Galway, given the recognised wind energy potential of the County*
- ***LARES Policy Objective 14: National Wind Energy Guidelines*** *– All onshore wind energy developments shall comply with the National Wind Energy Development Guidelines or any subsequent version thereof*
- ***LARES Policy Objective 16: Open to Consideration*** *- Wind energy development proposals in areas that are identified as 'Open to Consideration' for wind energy development will be considered in accordance with the LARES and the proper planning and sustainable development of the area.*
- ***LARES Policy Objective 17: Generally to be Discouraged*** *- Wind energy development proposals in areas that are identified as 'Generally to be Discouraged' for wind energy development will be considered in accordance with the LARES and the proper planning and sustainable development of the area.*
- ***LARES Policy Objective 37: Indigenous Renewable Energy*** *- To prioritise and actively encourage the generation of indigenous renewable energy in developments throughout County Galway. Proposals involving indigenous renewable energy as the primary source of energy will be considered favourably, in accordance with the LARES and the proper planning and sustainable development of the area.*

The layout of the Proposed Wind Farm has been strategically developed, with the proposed turbines being wholly located in an area classified as 'Open To Consideration' within the LARES, demonstrating the site's appropriateness for wind energy development. Accordingly, the Proposed Project is considered to be compliant with the relevant provisions of the GCDP and represents proper planning and sustainable development in the function area of GCC.

## Wind Energy Development Guidelines

In June 2006, the then Department of Environment, Heritage and Local Government (DoEHLG) published the Wind Energy Development Guidelines, 2006 (the Guidelines (DoEHLG, 2006)) under

Section 28 of the Act. The relevant considerations under the Guidelines (DoEHLG, 2006) have been taken into account during the preparation of this EIAR.



The aim of the Guidelines (DoEHLG, 2006) was to assist the proper planning of wind power projects in appropriate locations around Ireland. The Guidelines (DoEHLG, 2006) also highlight general considerations in the assessment of all planning applications for wind energy. They set out advice to planning authorities on planning for wind energy through the development plan process and in determining applications for planning permission. They contain guidelines to ensure consistency of approach throughout the country in the identification of suitable locations for wind energy development.

Each wind energy development has its own characteristics and defining features, and it is therefore impossible to write specifications for universal use. The Guidelines (DoEHLG, 2006) should be applied practically and do not replace existing national energy, environmental and planning policy. Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects and the commitment within the CAP25 to publish new wind energy guidelines for onshore wind in Q1 2025 it is possible that the Draft Guidelines (DoHPLG, 2019) may be adopted during the consideration period for the current planning application.

The Department of Housing, Planning and Local Government (DoHPLG) published the Draft Revised Wind Energy Development Guidelines (the Draft Guidelines (DoHPLG, 2019)) in December 2019. A consultation process in relation to the Draft Guidelines (DoHPLG, 2019) concluded on the 19th of February 2020. A further review of the Draft Guidelines (DoHPLG, 2019) is currently underway by the Department of Housing, Local Government and Heritage (DoHLGH) and the Department of Environment, Climate and Communications (DoECC), particularly in relation to noise limits. Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects it is possible that an updated version of the Draft Guidelines (DoHPLG, 2019) may be finalised during the consideration period for the current planning application for the Proposed Project. To this end, on the basis of the details available from the Draft Guidelines (DoHPLG, 2019) it is anticipated that the Proposed Project will be capable of adhering to the relevant noise and shadow flicker standards. While the final guidelines have not yet been published it should be noted that Shadow Flicker and Noise and are entirely controllable and are discussed further in Chapter 5 and Chapter 12, respectively. Furthermore, comprehensive community consultation has also been undertaken (refer to **Appendix 2-1 and 2-2**) and detail of the Proposed Grid Connection for the Proposed Project has been provided and assessed as part of this EIAR, forming an integral part of this planning application.

## Planning History

A planning search was carried out through the national planning application database and An Coimisiún Pleanála's online planning portal in August 2025. This was undertaken to search for planning applications that have been submitted for planning and that of which fall within the planning application boundary of the Proposed Project.

A planning search was carried out to establish existing, permitted and proposed wind energy developments within 25km of the proposed turbines for the purposes of informing the potential cumulative effects. The search was carried out using the relevant local authority planning portal and An Coimisiún Pleanála's portal in August 2025 for relevant planning applications.

## Scoping and Consultation

Section 2.7 of this EIAR presents details of the EIA Scoping undertaken with regards to the Proposed Project. A scoping report, providing details of the Proposed Project, was prepared by MKO and circulated in October 2024. The scoping document was circulated again in November 2024, as a follow up to the relevant bodies who had yet to respond. The scoping document provided details of the

Proposed Project and set out the scope of work for the EIAR. MKO requested the comments of the relevant personnel/bodies in their respective capacities as consultees with regards to this EIAR process. Also, as part of the constraints mapping process, detailed in Chapter 3 of the EIAR, telecommunications operators were contacted in August 2023 to determine the presence of telecommunication links or aviation assets traversing or located in close proximity to the Proposed Wind Farm site.



Copies of all scoping responses received are included in Appendix 2-1 of this EIAR. The recommendations of the consultees have informed the scope of the assessments undertaken and the contents of this EIAR. The responses received were fully considered and issues raised were followed up through contact with the respondent where clarification was necessary and addressed throughout this EIAR.

Section 2.7.3 of this EIAR includes details of the pre-planning meetings undertaken prior to the planning application being lodged. Members of the project team and the Applicant met with representatives of Galway County Council (GCC) in accordance with Section 247 of the Act via Microsoft (MS) Teams on the 4th March 2025. In addition to this pre-planning meeting, a further meeting was held with Galway County Council via MS Teams, under Section 32H(I) of the Planning and Development Act 2000 (as amended), to discuss design flexibility for the Proposed Project, relating to turbine total tip height, turbine rotor diameter and turbine hub height.

Further consultation was carried out with statutory consultees, with Members of the Project Team, including Environmental Scientists, Ecologists and Ornithologists meeting the National Parks and Wildlife Service (NPWS), to discuss the Proposed Project on 6th May 2025. Proposed plans for habitat enhancement and management measures were discussed, as well as ecological and ornithology surveys which have been conducted, along with their findings.

The outcomes of all these consultations have been duly considered and integrated into the design of the Proposed Project and the preparation of the EIAR.

## Cumulative Impact Assessment

The EIA Directive and associated guidance documents state that as well as considering any direct, indirect, secondary, transboundary, short, medium-, and long term, permanent and temporary, positive and negative effects of the Proposed Project that the description of likely significant effects should include an assessment of cumulative impacts that may arise.

To gather a comprehensive view of cumulative impacts on these environmental considerations and to inform the EIAR process being undertaken by the consenting authority, each relevant chapter within this EIAR includes a cumulative impact assessment where appropriate.

The potential cumulative impact of the Proposed Project and combined with the potential impact of other projects has been carried out with the purpose of identifying what influence the Proposed Project will have on the surrounding environment when considered collectively with projects that are proposed, pending a decision, approved, and existing land-uses in the defined cumulative assessment study areas as set out in Table 2-10 of this EIAR.

The cumulative impact assessment of projects has three principle aims:

1. *To establish the range and nature of existing and approved projects within the cumulative impact study area of the Proposed Project.*
2. *To summarise the relevant projects which have a potential to create cumulative impacts.*
3. *To identify the projects that hold the potential for cumulative interaction within the context of the Proposed Project and discard projects that will neither directly nor*

*indirectly contribute to cumulative impacts. (Note: this is done by individual competent experts with respect to their specialist area of expertise.)*



Projects were identified through a search of relevant online planning registers as well as informed by local knowledge of the area, particularly in relation to projects that have been circulated within the public domain but have not yet entered the formal planning system and effects were considered following a review of associated EIARs.

To gather a comprehensive view of cumulative impacts within the cumulative study area and to inform the EIA process being undertaken by the consenting authority, each relevant chapter within this EIAR addresses the potential for cumulative effects where appropriate and within the context of their identified cumulative study area. A long list of projects considered (i.e. the largest cumulative study boundary of 25km from the proposed turbines list) across all disciplines in their cumulative impact assessment is included in **Appendix 2-3** of this EIAR.

Overall, the Proposed Project has been designed to avoid and mitigate impacts on the environment, and a suite of mitigation measures is set out within the EIAR. The mitigation measures set out in this EIAR will ensure that significant cumulative effects do not arise during the construction, operational or decommissioning phases of the Proposed Project. Additional detail in relation to the potential significant cumulative effects arising and, where appropriate, the specific suite of relevant mitigation measures proposed are set out within each of the relevant chapters of this EIAR.

# 3 Consideration of Reasonable Alternatives

Chapter 3 of the EIAR introduces the reasonable alternatives studied by the Applicant which are relevant to the Proposed Project and its specific characteristics and an indication of the main reasons for the option chosen, taking into account the environmental effects. The consideration of alternatives typically refers to alternative design, technology, location, size and scale. A 'Do-Nothing Alternative' i.e., an outline of what is likely to happen to the environment should the Proposed Project not be implemented, has also been considered.

## Alternative Site Locations

The process of identifying a suitable location for a development such as the Proposed Project is influenced by a number of factors. While wind speeds, the area of suitable or available land, proximity to a grid connection point and planning policy are all very important, a wind farm project must be commercially viable/competitive, as otherwise it will never attract the necessary project finance required to see it built.

The Site has been identified as having potential for a wind energy development as a result of a nationwide search of suitable lands. The site selection process has been constraints and facilitators led. Facilitators are factors that give an advantage to a proposed project, while constraints are restrictions that inform the location and design of a project by highlighting sensitivities.

Site selection for the development of a wind farm must be suitable for consideration under a number of criteria, such as:

- **Environmental Sensitivities**: Located outside of EU Natura 2000 sites; locations outside of National designations; Article 17 Annex I Habitats;
- **Grid Connection**: Access to the national electricity grid possible within a viable distance;
- **Sensitive Receptors**: Capable of complying with required setbacks from sensitive receptors;
- **Site Scale**: Sufficient area of unconstrained land that could potentially accommodate a wind farm development and turbine spacing requirements.
- **Local Policy**: alignment with the wind energy strategy (i.e., in an area deemed 'open to consideration') of the relevant local authority

From the review of the criteria set out above, the Site is considered a suitable location for the provision of a renewable energy development of the scale proposed. The Proposed Project is located on agricultural land, cutover bog, and utilises the public road corridor which allows the Proposed Project to take advantage of the existing access roads (some of which will be upgraded) and highlights the suitability of the Proposed Project as it can make sustainable use of established items of infrastructure.

The Site is not located within any Nationally Designated or Natura 2000 site. Within the Proposed Wind Farm site, Article 17 Annex 1 Active Raised Bog habitat has been identified through assessment of available resources and through comprehensive multi-season site surveys. The Proposed Project has been designed to avoid and/or mitigate any potential effects and therefore there is no Proposed Project infrastructure sited within this area. Proposed biodiversity enhancement and management proposals do encompass a portion of this area and are detailed in Appendix 6-4 to the EIAR.

The Proposed Project intends to connect to the national grid via 38kV underground electrical cabling predominantly along the local and regional road network, as well as private land, from the proposed onsite 38kV substation to the existing Cashla 220kV substation, in the townland of Barrettspark, Co. Galway. The Proposed Grid Connection does not interact with any EU or National protected areas.

## Alternative Renewable Energy Technologies

To achieve the same maximum estimated electricity output from solar energy as is expected from the Proposed Wind Farm (c. 48.8MW), a larger development footprint would be required. As detailed in Section 1.1.1 in Chapter 1, the EIAR Site Boundary encompasses an area of approximately 894ha and the permanent footprint of the Proposed Project measures approximately 7.6ha, which represents approximately 0.9% of the Site. For a solar PV array of the scale necessary to provide the same electricity output as the Proposed Wind Farm, it would require a footprint of approx. 76.8 hectares or 9% of the overall Site

Although the screening exercise was based on identifying lands for onshore wind development; another alternative source of renewable electricity generation would be offshore wind energy.

Enerco Energy Ltd has a keen interest in offshore wind farms and has explored potential offshore sites. However, it is considered that due to delays with the regulatory process for offshore development, a combination of both onshore and offshore wind farm development will continue to be required to deliver on the ambitious renewable energy targets set out under CAP25 which include focusing on onshore wind energy developments to reach the 2025/2030 renewable energy targets. As such, Enerco's primary focus remains to be onshore wind farms, and they will continue to explore potential development offshore in tandem with delivering suitable sites onshore such as the Proposed Project.

The Applicant is an associated company of Enerco Energy Ltd, an Irish owned developer with extensive experience in the design, construction and operation of onshore wind energy developments throughout Ireland. The Applicant is committed to playing a key role in helping the State achieve its CAP25 objectives while building upon its proven record of generating clean renewable energy to the national grid. As such, the option of an offshore project is not considered to be a reasonable alternative at this time

## Alternative Turbine Numbers and Model

It is proposed to install 8 no. 6.1MW turbines at the Proposed Wind Farm site which will have an estimated installed capacity of 48.8MW. Such a wind farm could also be achieved on the Proposed Wind Farm site by using smaller turbines (for example 2.5 MW machines). However, this would necessitate the installation of over 19 turbines to achieve a similar output. A larger number of smaller turbines would result in the wind farm occupying a greater footprint, with a larger amount of supporting infrastructure being required (i.e., roads etc) and increasing the potential for environmental impacts to occur.

## Alternative Turbine Layout and Development Design

The design of the Proposed Wind Farm has been an informed and collaborative process from the outset, involving the designers, developers, engineers, landowners, environmental, hydrological and geotechnical, landscape and archaeological specialists and traffic consultants. The aim being to reduce potential for environmental effects while designing a project capable of being constructed and viable.

Throughout the preparation of this EIAR, the layout of the Proposed Wind Farm has been revised and refined to take account of the findings of all site investigations and baseline assessments, which have brought the design from its first initial layout iteration to the Proposed Wind Farm layout. The design process has also taken account of the recommendations and comments of the relevant statutory and non-statutory consultees, the local community and local authorities as detailed in Chapter 2 of the EIAR, while still seeking to ensure that a viable project can ultimately be constructed and connected to the national grid.

## Alternative Grid Connection Options

The Proposed Wind Farm will connect to the national grid via underground electrical cabling, located primarily within the public road corridor, with 3 no. small sections passing through private agricultural land and private track. The power from the proposed onsite 38kV substation will be transmitted to the existing Cashla 220kV substation, via a 38kV underground electrical cabling route, measuring approximately 21.8km in length.

A key consideration in determining the grid connection method for a proposed wind energy development is whether the cabling is underground or run as an overhead line. An alternative to the c.21.8km underground cabling route would be to construct an approx. 16.3km overhead line from the proposed onsite 38kV substation to the existing Cashla 220kV substation or approx. 5.8km of overhead line from the proposed onsite 38kV substation to the existing 110kV overhead line south of the Proposed Wind Farm site. While overhead lines are less expensive and allow for easier repairs when required, underground cabling will have no visual impact. For this reason, it was considered that underground cabling would be a preferable alternative to overhead lines. The Guidelines (DoEHLG, 2006) also indicate that underground cables are the preferred option for connection of a wind energy development to the national grid. The underground electrical cabling will primarily follow the route of existing public roads, thereby minimising the amount of ground disturbance required.

Additionally, consideration was given to installation of the grid connection within private lands adjacent to the public road network, however, the existing Cashla 220kV substation is located 16.3km west of the Proposed Wind Farm site, as the crow flies. It was considered that this was not a feasible option, due to the likely need for constructing at least 16.3km of new road across private lands to facilitate the construction and operation of the underground cabling.

The chosen Proposed Grid Connection design was considered to be the most environmentally prudent and practical option for a grid connection.

## Alternative Ports of Entry and Site Access

The ports considered for the port of entry of wind turbine components into Ireland for the Proposed Wind Farm site include, Dublin Port, Shannon-Foynes Port, County Limerick, Cork and the Port of Galway. Shannon Foynes Port is the principal deepwater facility on the Shannon Estuary and caters for dry bulk, break bulk, liquid, and project cargoes. The Port of Galway also offers a roll-on roll-off procedure to facilitate import of wind turbine components. All of the aforementioned ports have been used for the importing of turbine components. As stated, all ports mentioned above have a proven track record in the handling and subsequent transport of large turbine components. The final selection will be driven by commercial, availability and scheduling considerations. There are clear access routes for all four ports utilising the motorway network to the proposed haul route to the Site. For the purpose of this EIAR, the Port of Galway, Co. Galway was selected as the port of entry for the proposed turbines and has been assessed in detail in Chapter 15 of this EIAR.

The Site is located approx. 11km northeast of the M6/R348 junction and, as such, delivery of turbine components from this direction were considered as part of the iterative design process for the Proposed Project. The proposed turbine delivery route will exit off the M6 at Junction 17 towards Athenry/Craughwell. After exiting the M6, the turbines will travel north for 1.3km along the R348 regional road before turning south and traveling in a southeastern direction for 9.2km along the R348 regional road. The turbine delivery vehicles will then turn left onto the L3115 local road and travel north for approximately 5.2km to the proposed site entrance which will facilitate abnormal load delivery.

## General Construction and Operational Entrances

There are a number of existing access points to the Proposed Wind Farm. These comprise private farm access points off the L3115, L3118, L3118-3, and the L7169. An initial review of these existing locations was carried out to identify the most suitable locations for wind farm construction and operation site entrances.

The existing farm entrances off the L3118, L31183, and L7169 was deemed unsuitable for construction traffic due to the lack of adequate sightlines and significant areas of land take that would be required.

The existing farm entrance along the L3115 was deemed unsuitable for construction phase traffic and abnormal load delivery due to the lack of adequate sightlines.

Therefore, a new construction site entrance off the L3115 which has achieved the necessary sightlines is proposed for general construction (inclusive of abnormal load delivery) and operational access and was considered suitable as an operational entrance for maintenance staff.

## Alternative Mitigation Measures

Mitigation by avoidance has been a key aspect of the Proposed Project's evolution through the selection and design process. Avoidance of the most ecologically sensitive areas and geotechnically unstable areas of the Site limits the potential for environmental effects. As noted above, the layout aims to avoid any environmentally sensitive areas. Where loss of habitat occurs in the Site, this has been mitigated with the proposal of habitat enhancement and improved habitat connectivity with hedgerow replanting on the Proposed Wind Farm

The best practice design and mitigation measures set out in this EIAR will contribute to reducing any risks and have been designed to break the pathway between the Site and any identified environmental receptors. The alternative is to either not propose these measures or propose measures which are not best practice and effective and neither of these options is sustainable.

# 4 Description of the Proposed Project



This section of the EIAR describes the Proposed Project and all its component parts. The planning application for the Proposed Project will be made to Galway County Council. Construction methodologies for the main infrastructural components of the Proposed Project are also included in Chapter 4 (or its associated appendices) of the EIAR. The development description for the current planning application as appears in the public notices is included in Section 1 above.

The overall layout of the Proposed Project is shown on Figure 4-1 of the EIAR, this includes the Proposed Wind Farm site and the Proposed Grid Connection. The Proposed Project has been designed to minimise potential environmental effects, while at the same time maximising the energy yield from the Proposed Wind Farm. The Proposed Wind Farm layout is shown in Figure 4-2. The Proposed Grid Connection layout is shown in Figure 4-3. Detailed site layout drawings of the Proposed Project are included in Appendix 4-1 to this EIAR.

The proposed turbine layout has been optimised using wind farm design software (WindPro) to maximise the energy yield from the Proposed Project, while maintaining sufficient distances between the proposed turbines to ensure turbulence and wake effects do not compromise turbine performance. The Grid Reference coordinates of the proposed turbine locations are listed in Table 1 below.

*Table 1 Proposed Wind Turbine Locations and top of foundation level*

| Turbine | ITM X | ITM Y | Top of Foundation Levels (metre OD) |
|---|---|---|---|
| 1 | 560006 | 729599 | 71.5 |
| 2 | 560288 | 729308 | 69.5 |
| 3 | 560737 | 729992 | 72.5 |
| 4 | 561808 | 729771 | 74.5 |
| 5 | 562167 | 729573 | 76 |
| 6 | 562645 | 729614 | 76 |
| 7 | 563080 | 729518 | 73.5 |
| 8 | 562403 | 729093 | 70.6 |

The proposed wind turbines to be installed on the Proposed Wind Farm will have the following dimensions:

- Turbine Total Tip Height – 178m to 185m
- Hub Height – 101m to 104m
- Rotor Diameter – 149m to 163m

Modern wind turbines from the main turbine manufacturers have evolved to share a common appearance and other major characteristics, with only minor cosmetic differences differentiating one from another. For the purposes of this EIAR, a rated output 6.1MW has been chosen to calculate the potential generating capacity of the proposed 8-turbine renewable energy development, which would result in an estimated installed capacity of 48.8MW.

The Proposed Project makes use of the existing road network insofar as possible. It is proposed to upgrade approximately 2.4km of existing roads and tracks, and to construct approximately 6.6km of

new access road as part of the Proposed Project. It is proposed to construct passing bays along the proposed access road network in order to allow construction traffic to safely pass each other while travelling in opposite directions. Areas such as wide junctions and proposed hardstands will also be used as passing bays throughout the construction phase of the Proposed Wind Farm.



One meteorological (met) mast is proposed as part of the Proposed Wind Farm. The met mast will be equipped with wind monitoring equipment at various heights.

Each turbine and the meteorological mast will be connected to the on-site 38kV substation via underground 20/33kV electricity cabling. Fibre-optic cables will also connect each wind turbine and the met mast to the proposed onsite 38kV substation. The electricity and fibre-optic cabling connecting to the proposed onsite 38kV substation compound will be run in cable ducts approximately 1.2 metres beneath ground level, along the sides of roadways and/or under the roadways.

It is proposed to manage any excess overburden generated through construction activities locally within the Proposed Wind Farm site, in identified peat and spoil management areas.

The forestry felling activities required as part of the Proposed Wind Farm will be the subject of a Limited Felling Licence (LFL) application to the Forest Service in accordance with the Forestry Act 2014 and the Forestry Regulations 2017 (SI 191/2017) and as per the Forest Service's policy on granting felling licenses for wind farm developments. Further details on tree felling required is detailed in Chapter 4 and Chapter 6 of this EIAR.

The proposed site entrance for the Proposed Wind Farm will consist of a new access point off the L3115 local road along the western boundary of the Proposed Wind Farm site in the townland of Attimonmore South, Co. Galway. This entrance will be used during both the construction and operational phase of the Proposed Project. On completion of the construction phase, this entrance will be reduced in size and gated for security and will be used as an operational phase entrance.

In order to facilitate the construction of the Proposed Project, all crushed stone, hardcore materials and ready-mix concrete that will be required during the construction phase will be sourced from local, appropriately authorised quarries.

It is proposed to construct a 38kV electricity substation within the Proposed Wind Farm site, as shown in Figure 4-1, Figure 4-2 and Figure 4-3 of the EIAR. The proposed onsite 38kV substation is located within agricultural land and will be accessed via the internal Proposed Wind Farm road network.

It is proposed to connect the onsite 38kV substation to the existing 220kV Cashla substation in the townland of Barrettspark, Co Galway via 38kV underground electrical cabling. The underground electrical cabling route, illustrated in Figure 4-3 of the EIAR, is approximately 21.8km in length and located primarily within the public road corridor, with three subsections (approximately 0.2km, 0.6km and 1.5km respectively) located in private land/existing track.

An important part of a renewable energy development, which Gannow Ltd. (the Applicant) has been at the forefront of developing, is its Community Benefit Package. The concept of directing benefits from wind farms to the local community is promoted by the National Economic and Social Council (NESC) and Wind Energy Ireland (WEI) among others. While it may be simpler and easier to put a total fund aside for a wider community area, the Applicant is endeavouring to develop new ways to direct increased gain towards the local community with particular focus on those living closest to the Proposed Wind Farm. The Applicant has given careful consideration to the issue of community gain arising from the Proposed Wind Farm, if permitted and constructed. Community gain from significant development proposals, including wind farms, whilst a relatively recent approach, is now a common consideration for developers and, indeed, planning authorities. This approach recognises that, with any significant wind farm proposal, the locality in which the Proposed Wind Farm is situated is making a significant contribution towards helping achieve national renewable energy and climate change targets, and the local community should derive some benefit from accommodating such a development in their locality.

It is estimated that the construction phase of the Proposed Project will take approximately 18-24 months from commencement of civil works to the commissioning of the wind turbines. The construction phase can be broken down into three main phases, which overlap partially, 1) civil engineering works - 10 months, 2) electrical works including grid connection works - 9-12 months, and 3) turbine erection and commissioning - 8 months.



As part of the Proposed Project planning application, permission is being sought for a 35-year operation period commencing from the date of full operational commissioning of the proposed turbines. During the operational period, on a day-to-day basis the wind turbines will operate automatically, responding by means of meteorological equipment and control systems to changes in wind speed and direction.

Following the end of their useful life, the equipment may be replaced with a new technology, subject to planning permission being obtained, or the Proposed Wind Farm may be decommissioned fully. The Proposed Grid Connection and onsite 38kV electricity substation will remain in place as it will be part of the Electricity Grid under the ownership and control of the ESB Networks. The decommissioning plan for the Proposed Project is further detailed in Appendix 4-6.

# 5 Population and Human Health



One of the principal concerns during the development process is that human beings, as individuals or communities, should experience no significant diminution of their quality of life from the direct, indirect or cumulative effects arising from the construction, operation and decommissioning of a development. Ultimately, all the effects of a development impinge on human beings, directly and indirectly, positively and negatively. The key issues examined in Chapter 5 of the EIAR include population, human health, employment and economic activity, land use, residential amenity (including visual amenity, shadow flicker and noise), community facilities and services, tourism, property values, traffic and health and safety

The Proposed Wind Farm site is located approximately 9.7km east of Athenry, Co. Galway and 13km north of Loughrea, Co. Galway. The village of Attymon, Co. Galway is located approximately 1km northwest of the nearest proposed turbine (T01) and the village of New Inn is located approximately 4.6km southeast of the nearest proposed turbine (T07).

The land uses within the Proposed Wind Farm site are predominantly comprised of peat cutting, pastoral agriculture land, and commercial forestry. The primary surrounding land use within the Population Study Area comprises a mix of pastoral agriculture, peatlands, low-density residential, and small-scale commercial properties.

The construction of the Proposed Wind Farm will provide employment for technical consultants, contractors and maintenance staff. As discussed, it is proposed to construct the Proposed Wind Farm and Proposed Grid Connection concurrently which would require approximately 100 employees in total, with the majority of these roles focused on the construction phase of the Proposed Wind Farm. Up-skilling and training of local staff in the particular requirements of the wind energy industry is likely to lead to additional opportunities for those staff as additional wind farms are constructed in Ireland. This will have a long-term slight positive indirect residual effect.

There is currently no published credible scientific evidence to positively link wind turbines with adverse health effects. The main publications supporting the view that there is no evidence of any direct link between wind turbines and health are summarised in Chapter 5. Similarly, there is insufficient evidence from the scientific literature discussed in Chapter 5 to credibly determine that there is the potential for a significant effect on property values in Ireland, or abroad, as a result of the Proposed Project.

Shadow flicker is an effect that occurs when rotating wind turbine blades cast shadows over a window in a nearby property. Shadow flicker is an indoor phenomenon, which may be experienced by an occupant sitting in an enclosed room when sunlight reaching the window is momentarily interrupted by a shadow of a wind turbine's blade. Shadow flicker lasts only for a short period of time and occurs only during certain specific combined circumstances. The Guidelines (DoEHLG, 2006) recommend that shadow flicker at neighbouring dwellings within 500 metres of a proposed turbine location should not exceed a total of 30 hours per year or 30 minutes per day. It is further noted that at distances greater than 10 rotor diameters from a turbine, the potential for shadow flicker is very low, and therefore the Shadow Flicker Study Area is set at 1.63km (10 x rotor diameter 1.63km). There are 203 no. properties located within 1.63km of the proposed turbine locations

WindPRO computer software was used to model the predicted daily and annual shadow flicker levels in significant detail, identifying the predicted daily start and end times, maximum daily duration and the individual turbines predicted to give rise to shadow flicker. The maximum shadow flicker model assumes that daylight hours consist of 100% sunshine. This is a conservative assumption which represents theoretical precautionary conditions. Following the detail provided above on sunshine hours, a sunshine factor of 26.46% has been applied. Of the 203 no. properties modelled; it is predicted that:

- 121 no. properties are theoretically predicted to experience zero shadow flicker;
- 82 no. properties are theoretically predicted to experience some shadow flicker;

- It should be noted that of these 82 no. properties, 7 no. are Participating Properties, and 2 no. are in derelict condition (1 no. of which is a Participating Property). As a result, no mitigation measures are required for these 9 no. properties. Please see Table 5-9 in Chapter 5 for details.

- The annual threshold of over 30 hours for shadow flicker (Guidelines (DoEHLG, 2006)) is predicted to be exceeded at 4 no. properties once the regional sunshine average factor of 26.46% has been considered.
  - Of these 4 no. properties, 3 no. are Participating Properties, in which mitigation measures are not required. Please see Table 5-11 in Chapter 5 for details.

It is also noted that the Proposed Project can be brought in line with the requirements of the Draft Guidelines (DoHPLG, 2019) should they be adopted while this application is in the planning system, through a stricter implementation of mitigation measures outlined in Chapter 5.

For the assessment of cumulative effects, any other existing, permitted or proposed projects (wind energy or otherwise) have been considered. The potential cumulative effects of the Proposed Wind Farm, Proposed Grid Connection (together forming the Proposed Project) and other relevant developments has been carried out with the purpose of identifying what influence the Proposed Project will have on the surrounding environment when considered cumulatively with regards to employment and economic activity, tourism and amenity, traffic, air (dust), health and safety, property values, shadow flicker, and residential amenity.

Impacts on human beings during the construction, operational and decommissioning phases of the Proposed Project are described in Chapter 5 in terms of health and safety, employment and investment, population, land-use, noise, dust, traffic, tourism, residential amenity, renewable energy production and reduction in greenhouse gas emissions, shadow flicker and interference with communication systems. Where a negative impact is identified, appropriate mitigation measures will be put in place to ensure that there will be no significant health effects on sensitive receptors in the surrounding area. Overall, the construction, operation and decommissioning of the Proposed Project will not have any significant adverse effects on population and human health, following the implementation of the appropriate mitigation measures.

# 6 Biodiversity



Chapter 6 assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Project may have on Biodiversity, Flora and Fauna, and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

A comprehensive desk study, NPWS consultation, and suite of field surveys have been carried out. Multidisciplinary walkover surveys were undertaken between 2023 and 2025. Habitat surveys of the Site covered the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011). Dedicated species/habitat specific surveys including for bats, marsh fritillary, protected mammals and detailed habitat assessment surveys were carried out, during which any incidental records of other species were also recorded. In addition, fisheries surveys and aquatic macroinvertebrate surveys have been undertaken as part of the detailed baseline assessment, the detailed results of which are provided in technical appendices to Chapter 6.

The multi-disciplinary walkover surveys comprehensively covered the lands within the Site and based on the survey findings, further detailed targeted surveys were carried out for features and locations of ecological significance. These surveys were carried out in accordance with NRA Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (NRA, 2009).

During the multidisciplinary surveys, a search for Invasive Alien Species (IAS) listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) was conducted.

The habitats on the Site were the subject of a detailed survey and assessment and habitat mapping. This habitat mapping and assessment was undertaken following the 'A Guide to Habitats in Ireland' (Fossitt, 2000). Cutover peatland habitats have also been categorised according to the guidance set out in Irish Wildlife Manual No. 128.

The Proposed Wind Farm site is dominated by cutover bog (PB4), conifer forestry (WD4), agricultural grasslands (GA1) and wet grassland (GS4). The Raford River (FW2) flows through the eastern portion of the Proposed Wind Farm site. In addition, a tributary of the Raford River flows through the western portion of the Proposed Wind Farm site.

Article 17 mapped Active Raised Bog is present within the Proposed Wind Farm site. There is existing marsh fritillary breeding habitat within the Proposed Wind Farm site. These areas were identified early in the design stage of the Proposed Project and the site layout has been designed to avoid these habitats.

The majority of the Proposed Grid Connection is restricted to the public road corridor. There are 10 no. water crossings along the route. No instream works will be required. There are short off-road sections to the route, which pass through agricultural fields and follow existing tracks.

The Proposed Project includes a Biodiversity Management and Enhancement Plan (BMEP) (Appendix 6-4) which sets out the creation of an additional 8ha of suitable marsh fritillary breeding habitat, enhancement of over 5ha of cutover bog, planting of native woodland and over 3km of hedgerow/wildlife corridors throughout the Proposed Wind Farm site. This will result in a biodiversity net gain as part of the Proposed Project.

The construction of the Proposed Wind Farm will result predominantly in the loss of conifer forestry, degraded cutover bog habitat and improved agricultural grassland. There will also be loss of scrub (1.6ha), and semi-native woodland (0.1ha). There will be loss of 466m of hedgerow and treeline habitat. The Proposed Grid Connection will not result in the significant permanent loss of any habitat. The works will primarily be restricted to the existing road categorised as Buildings and Artificial Surfaces (BL3) and short sections of agricultural grassland. With the implementation of the Biodiversity

Management and Enhancement Plan as described above, there is no potential for residual significant effect as a result of loss of habitat.

Bat species composition and abundance was found during detailed bat surveys undertaken at the Site to be typical of the geographic location and nature of the Site. Bats as an Ecological Receptor have been assigned Local Importance (Higher value) on the basis that the habitats within the study area are utilized by a regularly occurring bat population of Local Importance. Following the implementation of mitigation, no potential for residual significant effects with regard to loss of commuting and foraging habitat, loss or damage to roosts, displacement or other construction phase impacts have been identified; the proposed net gain in linear landscape features within the site will result in a long-term positive impact on bats at the local level. In relation to potential collision risk and injury with operational turbines, a bespoke adaptive monitoring and mitigation strategy has been devised for the Proposed Project in line with NatureScot (2023) Guidance, which will ensure that there is no potential for significant residual effects on local bat populations during the operational phase of the Proposed Project.

There are 2 no. new clear-span water crossing structures proposed within the Proposed Wind Farm site. There are 10 no. existing water crossings along the Proposed Grid Connection. Evidence of otter activity was found in the form of spraint near the Graigabbey Bridge along the Proposed Grid Connection. However, no otter holts or other resting places were recorded during any of the ecological surveys. There is no potential for direct loss or fragmentation of significant otter habitat including loss of breeding or resting places. Given that no otter holts or resting places were recorded within the Site, no direct mortality, significant disturbance or any barrier to the movement of otter is anticipated.

Two badger setts were recorded within the Proposed Wind Farm site. Evidence of activity was seen at the setts. Evidence of badger activity was found within the Site in the form of fresh scats. The badger setts were identified early on in the design stage of the Proposed Project and as a result, the site layout has been designed to avoid impacts on these setts. In addition, pre-commencement surveys for badger will be carried out. With these measures in place, there is no potential for significant effect to badger via habitat loss or disturbance.

Dedicated surveys for Marsh Fritillary (Euphydryas aurinia) larval webs were undertaken in 2023, 2024 and 2025. Two main breeding populations of the species were found within the Proposed Wind Farm site and the layout has been designed to through an iterative design process, to avoid areas of breeding marsh fritillary and suitable habitat. The Biodiversity Management and Enhancement Plan also includes for the creation of 8ha of additional breeding habitat for the species.

No residual significant effects on surface water quality, groundwater quality or the hydrological/ hydrogeological regime were identified during construction, operation, or decommissioning. A suite of detailed mitigation measures for protection of water quality has been included in this EIAR. No residual significant effects as a result of water quality deterioration to nearby designated sites, including the Raford River NHA, was identified. A full hydrological assessment in relation to the Proposed Project has been carried out in Chapter 9 of the EIAR.

In relation to European designated sites, Galway Bay Complex SAC, Rahasane Turlough SAC, Inner Galway Bay SPA, and Rahasane Turlough SPA have been fully assessed within the Appropriate Assessment Screening and Natura Impact Statement (NIS) that accompanies this EIAR. The NIS has been prepared to provide the competent authorities with the information necessary to complete an Appropriate Assessment screening and an Appropriate Assessment for the Proposed Project in compliance with Article 6(3) of the Habitats Directive. The NIS concludes that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site.

It is therefore judged that, provided that the Proposed Project is constructed and operated in accordance with the design, best practice and mitigation that is described within this application,

significant individual or cumulative effects on ecology are not anticipated at the international, national, county, or local scales or on any of the identified KERs.

An assessment of potential cumulative effects was also undertaken to consider other extant planning applications and existing and proposed wind farms within 10 km of proposed turbines for the biodiversity chapter and 25 km of proposed turbines for the NIS. The Proposed Project will not result in any significant residual effects on biodiversity and will not contribute to any cumulative effect when considered in combination with other plans and projects.

In the review of the projects and plans that was undertaken, no connection that could potentially result in additional or cumulative impacts was identified. Neither was any potential for different (new) impacts resulting from the combination of the various projects and plans in association with the Proposed Project.

# 7 Birds



Chapter 7 assesses the likely significant effects that the Proposed Project may have on bird species. Firstly, a brief description of the Proposed Project is provided. This is followed by a comprehensive description of the methodologies that were followed in order to obtain the information necessary to complete a thorough assessment of the potential effects of the Proposed Project on bird species. The survey data is presented in full in the Environmental Impact Assessment Report (EIAR) appendices with a summary of the information presented within this chapter. An analysis of the results is then provided, which discusses the ecological significance of the birds recorded within the study area. The potential effects of the Proposed Project are then described in terms of the construction, operation and decommissioning phases of the development. An accurate prediction of the effects is derived following a thorough understanding of the nature of the Proposed Project along with a comprehensive knowledge of bird activity within the study area. The identification of Key Ornithological Receptors (KORs) and the assessment of effects follow a precautionary approach.

The following KORs were identified: golden plover, hen harrier, peregrine, whooper swan, curlew, kestrel, lapwing, snipe, buzzard, long-eared owl, and sparrowhawk.

The potential for effects on designated sites is fully described in the Natura Impact Statement (NIS) that accompanies this application. The NIS concluded that where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction, operation and decommissioning of the Proposed Project will not adversely affect the integrity of any European sites.

Based on the detailed assessment, it is considered that the potential effects of the Proposed Project upon birds will not be significant. Effects associated with habitat loss, disturbance, displacement, collision risk and cumulative effects have been assessed to be no greater than long-term slight negative effect (EPA, 2017) and low effect significance (Percival, 2003).

An assessment of potential cumulative effects was also undertaken taking into consideration other extant planning applications and existing and proposed wind farms within 25km. No residual additive, antagonistic or synergistic effects have been identified with regard to habitat loss, displacement or collision mortality for any of the identified KORs. No significant cumulative impacts are predicted.

The implementation of the prescribed mitigation measures will render any potential effects on avian receptors to low significance. In conclusion, no significant effects as a result of the Proposed Project are foreseen on KORs of the study area.

8

# Land, Soils and Geology



Chapter 8 assesses the likely significant effects that the Proposed Project may have on land, soils and geology and sets out the mitigation measures prescribed to avoid, reduce or offset any potential significant effects that are identified.

The land, soils and geology of the Site has been characterised using a combination of desk study and site investigation data. Several walkover inspections of the Proposed Wind Farm site have been completed as well as peat probing, gouge coring, shear vane testing, trial pit excavations, and laboratory analysis of recovered soil samples. A visual assessment of exposed soils, subsoil and bedrock and topographic changes along the Proposed Grid Connection was also completed.

**Proposed Wind Farm**

The Proposed Wind Farm site comprises of rough agricultural land, coniferous forestry with evidence of turbary peat cutting in open peatland areas. The Proposed Wind Farm site is relatively flat to gently undulating with gentle to moderate slopes. Ground elevations within the Proposed Wind Farm site range from ~65mOD (metres above Ordnance Datum) to ~80mOD. The overall slope of the land is to the south/west. In places, the natural topography has been modified through previous peat extraction activities and associated drainage.

Based on site investigations, peat is present at the Proposed Wind Farm site and ranges in depth from 0.1 to 7.2m with an average peat depth of 1.1m. 76% and 95% of the peat probes encountered peat depths less than 2m and 3m respectively. A number of localised readings recorded peat depths from 3.0 to 7.2m. Other subsoils encountered during the trial pit excavations comprised of SILT, MARL or sandy or gravelly SILT and CLAY with cobbles of limestone.

No bedrock was encountered during the site investigations which extended to a maximum depth of 4.2mbgl. Bedrock is mapped by the GSI as dark limestones and shales of the Lucan Formation.

The Proposed Project will involve the removal of soils, subsoils (spoil) and peat for the construction of the internal cable network, hardstanding emplacement, turbine foundations, substation, crane hardstands and construction compounds. Rock for construction purposes will be sourced offsite from local suitably licenced quarries.

The estimated volume of peat and spoil to be excavated within the Proposed Wind Farm site is 120,700$m^3$. It is proposed to manage overburden generated through construction activities locally within the Proposed Wind Farm site, in the designated peat and spoil management areas, for landscaping at the proposed turbine locations and along proposed accessed roads. The handling and management of spoil will be done in accordance with the Peat and Spoil Management Plan (Appendix 4-2).

Storage and handling of hydrocarbons/chemicals will be carried out using best practice methods. The base of the substation transformer will bunded and capable of holding 110% of the stored oil volume. Turbine transformers are fully bunded located within the enclosed turbines, so any leaks would be contained within the turbine and there is no potential pathway to receptors associated with the Land, Soils and Geological environment. Measures to prevent soil and subsoil erosion during excavation and reinstatement will be undertaken to prevent water quality effects.

The Proposed Project has a very small development footprint when compared to the overall area of the Site, i.e 7.6 ha or 0.9%. Therefore, no significant effects on land will occur during the construction, operation or decommissioning phases of the Proposed Project.

The mineral soil/subsoil deposits at the Proposed Wind Farm site are not designated in this area (i.e. they do not form part of a designated site). For this reason, and with the implementation of the mitigation measures detailed in this EIAR and the best practice measures detailed in relation to spoil

management, no significant effects on soils or subsoils will occur during the construction, operation or decommissioning phases of the Proposed Project.

Similarly, with the implementation of the mitigation measures outlined in this EIAR, no significant effects on the underlying siltstone bedrock geology will occur during the construction, operation, or decommissioning phases of the Proposed Project.

An assessment of the impacts associated with any potential piling works concluded that, with the implementation of the prescribed mitigation measures, and due to the small footprint of the piles, there will be no significant effects on the land, soils and geology environment.

An assessment of potential cumulative effects associated with the Proposed Wind Farm and other developments on land, soils and geology has been completed. The land, soils and geology assessment confirms there will be no significant cumulative effects on land, soil and geology as a result of the Proposed Wind Farm.

**Proposed Grid Connection**

The Proposed Grid Connection from the proposed onsite 38kV substation to the existing Cashla 220kV substation is ~21.8km and is located within the primarily within the carriageway of the public road corridor with three sections (approximately 0.2km, 0.6km and 1.5km) being located within private land.

A total of 35 no. peat probes were undertaken at targeted locations along the Proposed Grid Connection. These probes were completed in all areas of private accessible land and in areas of mapped by the GSI as being underlain by peat. Where present the peat was noted to be limited in extent and shallow with all probes recoding peat depths <0.3m.

The spoil generated along the Proposed Grid Connection underground cabling trench will either be managed in the identified peat and spoil management areas within the Proposed Wind Farm or sent to an appropriately licensed facility. This is dependent on the road makeup at locations along the underground cabling route and the distance from the works along the route to the Proposed Wind Farm site, the main contractor will determine the appropriate location for management of arisings from the Grid Connection.

Storage and handling of hydrocarbons/chemicals will be carried out using best practice methods. Measures to prevent soil and subsoil erosion during excavation and reinstatement will be undertaken to prevent water quality impacts.

No significant effects on the land, soil and geology along the Proposed Grid Connection will occur during the construction, operation, or during decommissioning phases.

The land, soils and geology assessment confirm there will be no significant cumulative effects on land, soil and geology as a result of the Proposed Grid Connection.

# 9 Water



Chapter 9 assesses the likely significant effects that the Proposed Project may have on water (hydrology and hydrogeology) and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

The Proposed Wind Farm site is situated in a rural, agricultural setting in east Co. Galway, located ~9.7km east of Athenry Town and 13km north of Loughrea. The Proposed Project is divided into two distinct areas; the Proposed Wind Farm and the Proposed Grid Connection.

**Proposed Wind Farm**

The Proposed Wind Farm site comprises of rough agricultural land, coniferous forestry with evidence of turbary peat cutting in open peatland areas. The Proposed Wind Farm site is relatively flat to gently undulating with gentle to moderate slopes. Ground elevations within the Proposed Wind Farm site range from ~65mOD (metres above Ordnance Datum) to ~80mOD. The overall slope of the land is to the south/west. In places, the natural topography has been modified through previous peat extraction activities and associated drainage.

On a regional scale, the Proposed Wind Farm site is located within the Galway Bay Southeast WFD surface water catchment within Hydrometric Area 29 of the Western River Basin District. On a more local scale, the vast majority of the Proposed Wind Farm site is mapped within the Raford River sub-catchment (Raford_SC_010). A very small area in the west of the Proposed Wind Farm site is located in the Clarinbridge River sub-catchment (Clarinbridge_SC_010). The Proposed Wind Farm site is drained by the Raford River in the east and the Killimor River in the west. These rivers merge downstream of the Proposed Wind Farm site with the Raford River then continuing to the southwest and discharging into the Kilcolgan River near Craughwell. The Kilcolgan River, known locally as the Dunkellin River, passes through Rahasane Turlough and discharges into Dunbulcan Bay.

The bedrock underlying the Proposed Wind Farm site is classified as a Locally Important Aquifer. This means that the underlying bedrock has little or no open cracks which means groundwater movement within the aquifer is very localised. Within the Proposed Wind Farm site the bedrock is overlain by peat and low permeability silty and clay which restrict groundwater recharge. Surface water runoff rates are high and surface waters are the main sensitive receptor.

There are several designated sites and protected areas located downstream and hydrologically connected to the Proposed Wind Farm site. These include the Raford River Bog NHA, Rahasane Turlough SAC/pNHA and SPA, the Galway Bay Complex SAC/pNHA and the Inner Galway Bay SPA. The closest of these is the Raford River Bog NHA which is located 0.4km from the Proposed Wind Farm site. Following implementation of the appropriate mitigation measures as outlined in the EIAR no significant effects on these downstream designated sites will occur as a result of the Proposed Project.

There are no surface water abstractions for drinking water located downstream of the Proposed Wind Farm site on the Raford, Killimor or Kilcolgan Rivers.

The Raford River within the Proposed Wind Farm site is mapped in the Outer Source Protection Area of the Rhynn Killeeneen Group Water Scheme (GWS). The GWS is supplied by a borehole located in Rhynn, ~6km southwest of Craughwell, which abstracts groundwater from a Regionally Important karstified limestone aquifer. The source protection area for this GWS includes the Dunkellin River which flows from east to west through the zone of contribution. The GSI include the Dunkellin River in the source protection area as water from the river may be reaching the abstraction point via swallow holes and groundwater flowpaths in karst conduits. However, with the implementation of the prescribed tried and tested, best practice mitigation measures for the protection of surface and groundwater quality as detailed in this EIAR, there will be no significant effects on the Rhynn Killeeneen GWS.

Some areas of the Proposed Wind Farm site are mapped in fluvial flood zones along the Raford and Killimor Rivers. However, the Proposed Wind Farm has been designed, cognisant of the fluvial flood risk at the Proposed Wind Farm site and will ensure that flooding at the Proposed Wind Farm site poses no risk to the proposed infrastructure and that access will be maintained during flooding events. Furthermore, the Proposed Wind Farm will not increase the downstream flood risk.

During each phase of the Proposed Project (construction, operation, and decommissioning) a number of activities will take place at the Proposed Wind Farm site, some of which will have the potential to significantly affect the hydrological/hydrogeological regime or water quality at or downstream of the Proposed Wind Farm site. These significant potential effects generally arise from sediment input from runoff and other pollutants such as hydrocarbons and cement-based compounds.

Surface water drainage measures, pollution control and other preventative measures have been incorporated into the project design to minimise significant effects on water quality (surface and groundwater), downstream designated sites and water resources. A self-imposed 50m watercourse buffer was used during the design of the Proposed Project, thereby largely avoiding sensitive hydrological features. Where works are proposed within the buffer zone additional mitigation measures will be implemented for the protection of surface water quality. The surface water drainage plan will be the principal means of significantly reducing sediment runoff arising from construction activities and to control runoff rates. The key surface water control measure is that there will be no direct discharge of wind farm runoff into local watercourses or into the existing site drainage network. This will be achieved by avoidance methods (i.e. stream buffers) and design methods (i.e. surface water drainage plan). Preventative measures also include fuel and concrete management and a waste management plan which are incorporated into the Construction and Environmental Management Plan (Appendix 4-5).

No significant effects to surface water (quality and flows) and groundwater (quality and quantity, and any local groundwater wells) will occur as a result of the Proposed Wind Farm provided the proposed mitigation measures are implemented. This EIAR presents proven and effective mitigation measures to mitigate the release of sediment which will reduce the concentration of suspended solids to acceptable levels. The storage and handling of hydrocarbons/chemicals will be carried out using best practice methods which will ensure the protection of surface and groundwater quality. The base of the substation transformer will bunded and capable of holding 110% of the stored oil volume. Turbine transformers are fully bunded located within the enclosed turbines, so any leaks would be contained within the turbines. The proposed wind farm drainage system will be designed to slow surface water runoff from the site by providing greater attenuation. This will ensure that the Proposed Project does not alter downstream surface water flows and will not contribute to downstream flooding.

An assessment of the impacts associated with any potential piling works concluded that, with the implementation of the prescribed mitigation measures, and due to the small footprint of the piles, there will be no significant effects on the water environment.

A Water Framework Directive (WFD) Compliance Assessment has been completed for all waterbodies (surface water and groundwater bodies) with the potential to be impacted by the Proposed Project; included as Appendix 9-3. With the implementation of the mitigation measures detailed in this EIAR there will be no change in the WFD status of the underlying groundwater body or downstream surface waterbodies as a result of the Proposed Project. The Proposed Project has been found to be fully compliant with the WFD and will not prevent any waterbody from achieving its WFD objectives.

An assessment of potential cumulative effects associated with the Proposed Project and other developments on the hydrological and hydrogeological environment has been completed. With the implementation of the mitigation measures detailed in this EIAR, the cumulative assessment found that there will be no significant effects on the hydrological and hydrogeological environments.

No significant effects on the water environment will occur during the construction, operation or decommissioning of the Proposed Wind Farm.

**Proposed Grid Connection**

The Proposed Grid Connection from the proposed onsite 38kV substation to the existing Cashla 220kV substation is ~21.8km and is located within the primarily within the carriageway of the public road corridor with three sections (approximately 0.2km, 0.6km and 1.5km) being located within private land.

On a regional scale, the Proposed Grid Connection is located in the Galway Bay Southeast WFD surface water catchment within Hydrometric Area 29 within the Western River Basin District. On a more local scale, the Proposed Grid Connection is mapped within 3 no. WFD river sub-catchments (Raford_SC_010, Clarinbridge_SC_010 and the Carrowmoneash [Oranmore]_SC_010). There are a total of 4 no. crossings over EPA mapped watercourses along the Proposed Grid Connection.

Designated sites located downstream of the Proposed Grid Connection include the Galway Bay Complex SAC/pNHA, the Inner Galway Bay SPA and Rahasane Turlough SAC. Due to the minor and transient nature of the proposed works, coupled with the prescribed mitigation measures, there will be no significant effects on downstream designated sites.

Approximately 9.6km of the Proposed Grid Connection is underlain by a Regionally Important Aquifer – Karstified (conduit). However, due to the minor, shallow and transient nature of the works, and the prescribed mitigation measures, there will be no significant effect on karst features or the underlying karst aquifer.

There is a total of 10 no. watercourse crossings (4 no. crossings over EPA mapped watercourses and additional 6 no. crossings over watercourses which are not included in the EPA database) along the Proposed Grid Connection. All the crossings are existing bridges and culverts along the public road. With respect to the Proposed Grid Connection, 4 no. watercourse crossings are proposed over the Clarinbridge River which forms part of the Outer Source Protection Area of the Brockagh Lisduff Group Water Scheme. However, due to the minor, shallow and transient nature of the works and the prescribed mitigation measures, there will be no significant effect on this GWS.

An assessment of the construction, operational and decommissioning phases has been completed, along with a cumulative assessment for each phase. Based on the above, and with implementation of the outlined mitigation measures, no significant effects on the surface water and groundwater environments will occur.

10 # Air Quality



Chapter 10 identifies, describes and assesses the potential significant direct and indirect effects on air quality arising from the construction, operation and decommissioning of the Proposed Project.

The air quality zone for the Site was selected, followed by a review of EPA collated baseline air quality data namely Sulphur Dioxide ($SO_2$), Particulate Matter ($PM_{10}$), Nitrogen Dioxide ($NO_2$), Carbon Monoxide (CO) and Ozone ($O_3$) for the selected air quality zone to determine the representative levels of such emissions for the Proposed Project.

The EPA has designated four Air Quality Zones for Ireland:

- Zone A: Dublin City and Environs
- Zone B: Cork City and Environs
- Zone C: 16 urban areas within population greater than 15,000
- Zone D: Remainder of the country

These zones were defined to meet the criteria for air quality monitoring, assessment and management as described in the CAFE Directive. The Proposed Project lies within Zone D, which represents rural areas located away from large population centres.

The air quality in the vicinity of the Site is typical of that of rural areas in the west of Ireland, i.e., Zone D. Prevailing south-westerly winds carry clean, unpolluted air from the Atlantic Ocean onto the Irish mainland. The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent report on air quality in Ireland, '*Air Quality in Ireland 2023'* was published by the EPA in 2024. The EPA reports provide $SO_2$, $PM_{10}$, $NO_2$ and $O_3$ concentrations for areas in Zone D. These can be seen in Section 10.2 of Chapter 10.

The Institute of Air Quality Management in the UK (IAQM) guidance document '*Guidance on the Assessment of Dust from Demolition and Construction*' (2024) (hereafter referred to as 'IAQM 2024 Guidance') was considered in the dust impact assessment. The guidance document outlines an assessment method for predicting the impact of dust emissions from construction activities based on the scale and nature of the works and the sensitivity of the area to dust impacts. This methodology has been used to predict the likely risk of dust as a result of the construction phase works operational phase activities and decommissioning phase.

The production of energy from wind turbines has no direct air emissions as is expected from fossil fuel-based power stations. Harnessing more energy by means of renewable sources will reduce dependency on fossil fuels, thereby resulting in a reduction in harmful emissions that can be damaging to human health and the environment. Some temporary or short-term indirect emissions associated with the construction of the Proposed Project will include vehicular and dust emissions.

A Construction and Environmental Management Plan (CEMP) will be in place throughout the construction phase (see Appendix 4-5). The CEMP includes dust suppression measures. In addition, turbines and construction vehicles will be transported to the Site on specified haul routes only, which will be regularly inspected for cleanliness and cleaned as necessary.

During the construction phase of the Proposed Project and the construction of other permitted or proposed developments and plans in the area (please see Section 2.9 in Chapter 2 (Background to the Proposed Project) and Appendix 2-3 of this EIAR), there will be exhaust emissions from construction plant and machinery and potential dust emissions associated with the construction activities. However, once the mitigation proposals, as outlined in the Chapter 10 assessment are implemented during the construction phase of the Proposed Project, there will be no cumulative negative effect on air quality.

Exhaust and dust emissions during the operational phase of the Proposed Project will be minimal, relating to the use of maintenance machinery and vehicles onsite, and therefore there will be no measurable negative cumulative effect with other developments on air quality. The nature of the Proposed Project is such that, once operational, it will have a long-term, moderate, positive impact on the air quality. There will be no measurable negative cumulative effect with other developments on air quality, and it is not significant

There will be no net carbon dioxide ($CO_2$) emissions from operation of the Proposed Project. By providing an alternative to electricity derived from coal, oil or gas-fired power stations, the Proposed Project will result in emission savings of carbon dioxide ($CO_2$), oxides of nitrogen ($NO_x$), and sulphur dioxide ($SO_2$). The production of renewable energy from the Proposed Project will have a Long-Term Moderate Positive effect on air quality due to the offsetting of approximately 30,568 tonnes of Carbon Dioxide ($CO_2$) per annum, or 1,069,088 tonnes of carbon dioxide over the proposed 35 year lifecycle of the Proposed Project.

# 11 Climate



Chapter 11 identifies, describes, and assesses the potential significant direct and indirect effects on climate arising from the extension of operation and decommissioning of the Proposed Project.

The production of energy from wind turbines has no direct emissions as is expected from fossil fuel-based power stations. Harnessing more energy by means of wind farms will reduce dependency on fossil fuels, thereby resulting in a reduction in harmful emissions that can be damaging to human health and the environment.

Climate change is one of the most challenging global issues facing us today and is primarily the result of increased levels of greenhouse gases in the atmosphere. These greenhouse gases come primarily from the combustion of fossil fuels in energy use. Changing climate patterns are linked to increased frequency of extreme weather conditions such as storms, floods and droughts. In addition, warmer weather trends can place pressure on animals and plants that cannot adapt to a rapidly changing environment. Moving away from our reliance on coal, oil and other fossil fuel-driven power plants is essential to reduce emissions of greenhouse gases and combat climate change.

In May 2025, the Environment Protection Agency (EPA) released '*Ireland's Greenhouse Gas Emissions Projections 2024-2055*'. The EPA has produced two scenarios in preparing these greenhouse gas emissions projections: a "With Existing Measures" (WEM) scenario and a "With Additional Measures" (WAM) scenario. These scenarios forecast Irelands greenhouse gas emissions in different ways. The WEM scenario assumes no additional policies and measures, beyond those already in place by the end of 2023. This is the cut off point for which the latest national greenhouse gas emission inventory data is available, known as the 'base year' for projections. The WAM scenario has a higher level of ambition and includes government policies and measures to reduce emissions such as those in Ireland's Climate Action Plan (CAP) 2024 that are not yet implemented. As implementation of policies and measures occurs, they will be migrated into the WEM Scenario. Please note, CAP25 is not specifically referenced in this report as it had yet to be published during the preparation phase of the 2024-2055 projections. A review was undertaken and there are no significant additional measures in CAP25 therefore no major omissions in these projections.

The EPA has produced two scenarios in preparing these greenhouse gas emissions projections: a "With Existing Measures" (WEM) scenario and a "With Additional Measures" (WAM) scenario. These scenarios forecast Irelands greenhouse gas emissions in different ways. The WEM scenario assumes no additional policies and measures, beyond those already in place by the end of 2023. This is the cut off point for which the latest national greenhouse gas emission inventory data is available, known as the 'base year' for projections. The WAM scenario has a higher level of ambition and includes government policies and measures to reduce emissions such as those in Ireland's Climate Action Plan 2024 that are not yet implemented. As implementation of policies and measures occurs, they will be migrated into the WEM Scenario. Please note, CAP25 is not specifically referenced in this report as it had yet to be published during the preparation phase of the 2024-2055 projections. A review was undertaken and there are no significant additional measures in CAP25 therefore no major omissions in these projections.

A methodology was published in June 2008 by scientists at the University of Aberdeen and the Macauley Institute with support from the Rural and Environment Research and Analysis Directorate of the Scottish Government, Science Policy and Co-ordination Division. The document, '*Calculating Carbon Savings from Wind Farms on Scottish Peat Lands*', was developed to calculate the impact of wind farm developments on the soil carbon stocks held in peat. This methodology was refined and updated in 2011 based on feedback from users of the initial methodology and further research in the area. The web-based version of the carbon calculator, which supersedes the excel based versions of the tool, was released in 2016. Please note, the web-based version of the carbon calculator is currently not available, the Macauley Institute has supplied a worksheet of the calculator (Version 2.14.0) which has been used to complete the following carbon loss assessment. The tool provides a transparent and easy

to follow method for estimating the impacts of wind farms on the carbon dynamics of peatlands. Previously guidance produced by Scottish Natural Heritage in 2003 had been widely employed to determine carbon payback in the absence of any more detailed methods.

The full life cycle and embodied carbon of the Proposed Project turbines have been taken account of in the Macauley Institute model. The emissions associated with the embodied carbon, along with the construction phase transport movements, of the remaining features of the site are considered using the Transport Infrastructure Ireland (TII) Carbon Tool (TII 2022). The TII Carbon Tool is customised for road and light rail projects in Ireland, using emission factors from recognised sources during the construction, maintenance and operation of TII projects in Ireland.

The carbon balance of wind farm developments in peatland habitats has attracted significant attention in recent years. When developments such as wind farms are proposed for peatland areas, there will be direct impacts and loss of peat in the area of the development footprint. There may also be indirect impacts where it is necessary to install drainage in certain areas to facilitate construction, or from the reinstatement of extracted peat. The works can either directly or indirectly allow the peat to dry out, locally, which permits the full decomposition of the stored organic material with the associated release of the stored carbon as $CO_2$. It is essential therefore that any wind farm development in a peatland area saves more $CO_2$ than is released. The Proposed Wind Farm site is situated on pastoral agricultural land and peatland with small sections being covered by coniferous forestry. For this reason, the carbon balance between the use of renewable energy and the loss of carbon stored in the peat is assessed in this EIAR.

The Proposed Project will result in the loss of 116,125 tonnes of carbon dioxide equivalent, the details of these carbon losses are provided in Table 11-5 of Chapter 11 of the EIAR. Please note, that in completion of these calculations a number of assumptions have been made under theoretical precautionary conditions; all assumptions are detailed in Appendix 11-2 Carbon Calculations. Therefore, it can be determined that the actual carbon losses associated with the Proposed Project will likely be less than the values provided in Table 11-5 of Chapter 11.

The Proposed Project will have an export capacity of approximately 48.8MW and therefore will help contribute towards the achievement of national and international emission reduction targets, provide much needed grid infrastructure, and the capacity to offset 30,568t$CO_2$e per annum, or 1,069,880t$CO_2$e over the proposed 35 year operational life. Carbon losses to the atmosphere associated with the construction phase and from operations will be offset by the Proposed Wind Farm site in approximately **45.6** months (3.8 years) of operation. Please see Section 11.4.3.2 for details on carbon savings/offset calculations.

Following construction of the Proposed Project, there will be a Permanent Imperceptible Negative Effect on Climate as a result of greenhouse gas emissions from construction plant and vehicles, embodied carbon associated with the turbines and construction materials. Operation of the Proposed Project will have a Long-Term Moderate Positive Effect on climate as a result of reduced greenhouse gas emissions

# 12 Noise and Vibration



Chapter 12 of the EIAR has been prepared by AWN Consulting to assess the likely significant environmental noise and vibration effects of the Proposed Project. The chapter identifies appropriate noise and vibration threshold values for the various phases and elements of the project with reference to best practice guidance documents.

The background noise environment has been established through noise monitoring surveys undertaken at seven noise sensitive locations (NSLs) surrounding the Proposed Wind Farm site. Typical background noise levels for day and night periods at various wind speeds have been measured in accordance with best practice guidance contained in the Institute of Acoustics document 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (IOA GPG). The results of the background noise survey have been used to derived appropriate noise criteria for the development in line with the guidance contained in the Guidelines, DoEHLG, 2006.

When considering a development of this nature, the potential noise and vibration effects on the surroundings must be considered for three stages: the short-term construction and decommissioning phases and the long-term operational phase.

The assessment of construction and decommissioning noise and vibration and has been conducted in accordance with best practice guidance contained in BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise* and BS 5228-2:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Vibration*. Subject to good working practice and mitigation measures as recommended in the EIAR Chapter, it is not expected that there will be any significant noise and vibration impacts associated with the construction phase and the likely noise from construction activity at the nearest NSLs is expected to be within recommended threshold values. The associated construction noise and vibration impacts are not expected to cause any significant effects.

The exact model of turbine to be installed as part of the Proposed Wind Farm will be the result of a future tendering process and within the dimensions prescribed in this planning application should planning permission be granted. Achievement of the noise limits determined by this assessment and any planning condition requirements will be a key determining requirement in the final choice of turbine for the Proposed Wind Farm.

Based on detailed information on the site layout, the likely turbine noise emissions and turbine hub height for the proposed turbines (inclusive of all modelled scenarios), a series of turbine noise prediction models were prepared. The predicted turbine noise levels have been calculated in accordance with the IOA GPG recommendations. The assessment has confirmed that the residual turbine noise levels associated with the Proposed Project will be within the best practice noise criteria curves recommended in the Guidelines (DoEHLG, 2006). Therefore, it is not considered that any significant effects are associated with the proposed turbines.

The effects of the Proposed Grid Connection are also considered. A daytime baseline noise survey has been carried out along the Proposed Grid Connection and is presented in Appendix 12-9. This EIAR considers the potential construction noise and vibration effects of the Proposed Grid Connection. There is no operational noise associated with the Proposed Grid Connection and therefore no operational noise effects. It is not intended to decommission the Proposed Grid Connection; therefore no decommissioning phase noise effects will arise

No significant vibration effects are associated with the operation of the Proposed Project.

In summary, the noise and vibration impact of the Proposed Project is not significant considering best practice guidance for wind turbine developments.

13

# Landscape and Visual



Chapter 13 of the EIAR includes a Landscape and Visual Impact Assessment (LVIA). The LVIA assessed the likely significant effects of the Proposed Project on key sensitive landscape and visual receptors, as well as visual effects on local residential receptors in close proximity to the proposed turbines, including cumulative effects with other wind energy developments within 20km of the proposed turbines. The Proposed Wind Farm adheres to good wind farm design with respect to the location, spatial extent, spacing, layout, height and cumulative effect of the proposed turbines in Hilly and Flat Farmland landscape type prescribed by the Guidelines (DoEHLG, 2006). The LVIA was informed by desk study, field surveys, on-site visibility appraisals, GIS analysis including Zone of Theoretical Visibility (ZTV) and Route Screening Analysis (i.e. on-the-ground visibility appraisal within 3-5km), as well as the production of verified photomontages.

The Site and all proposed infrastructure is sited within landscape of Co. Galway designated as "Low" sensitivity in the Galway County Development Plan (GCDP) 2022-2028 defined as *"Unlikely to be adversely affected by change"*.

Considering the 20km LVIA Study Area, no residual Significant effects will occur on designated landscape and visual receptors or scenic sensitivities of county, regional or national renown. There are no designated or protected views as set out in the GCDP 2022-2028 within 10km of the proposed turbines and none with any visibility of the proposed turbines within 20km. There are no recreational, popular cultural heritage or tourism destinations located within 5km of the proposed turbines and none with the potential for visual effects within 10km.

Within the Proposed Wind Farm site, all proposed turbines T01-T08 are sited within land area zoned as *Open to Consideration* to wind energy development in the Galway County Development Plan Local Authority Renewable Energy Strategy (LARES). The landscape type and character of the area where the proposed turbines are sited comprises modified working landscape types of low sensitivity and can effectively accommodate wind energy development, i.e. agricultural fields, cutover peatlands, and commercial forestry.

The proposed turbines at 185m tip height, deemed the essential aspect of the Proposed Project from an LVIA perspective, are sited in primarily flat terrain with localised undulations and mature boundary vegetation that provide visual screening from most receptors beyond 2km of the proposed turbines. A range of turbine model scenarios has been assessed in the LVIA, with a total tip height ranging from 178-185m, a hub height ranging from 101-104m and a rotor diameter ranging from 149-163m. For the avoidance of doubt, the turbine model scenario with the greatest potential to result in landscape and visual effects (Scenario 1) was assessed in all visualisations, and additional representative visualisations of the other scenarios within the turbine range (Scenarios 3 – 4) were also produced for assessment. Irrespective of which turbine scenario is used, the determination of residual visual effects in the visual impact assessment tables will not be altered.

There are 13 No. photomontage viewpoints selected and assessed to represent a good geographic spread of views from within the 20km LVIA Study Area, focused in the direction of the proposed turbines. The LVIA determined the potential for negative visual effects ranging from "Not Significant" and "Slight" at all viewpoints greater than 1.8km from the proposed turbines, and visual effects of "Moderate" at viewpoints within 1km. The potential for "Significant" residual visual effects was predicted for one viewpoint captured at a destination of local importance located approximately 695m south of the nearest proposed turbine (T02), mainly owing to the greater perceived scale of 3 no. of the proposed turbines visible from that vantage point. The actual number of receptors likely to experience these effects is very low as the landscape surrounding the Proposed Wind Farm site has a significantly low population density, and other factors such as roadside screening from dense, mature vegetation and undulations in local topography would allow for most receptors in the vicinity to experience visual effects of a lesser degree.

There were 4 no. designated Landscape Character Units (LCUs) assessed for effects on landscape character within 15km of the proposed turbines, including cumulative effects. All LCUs were deemed to be "Low" sensitivity and no "Significant" landscape effects are predicted to occur.



No "Significant" residual visual effects are predicted for any receptors located greater than 1km from the proposed turbines; the predicted visual effects for receptors within 1km were reported previously in this conclusion section in relation to the photomontage viewpoint assessment. The LVIA focused on assessing the visual impact on local residential receptors (those within 2km of the proposed turbines) considered high sensitivity owing to their close proximity and determined that most receptors within 2km of the Proposed Wind Farm site are predicted to experience "Slight" to "Moderate" visual effects, which are not significant.

The presence of wind turbines in the rural landscape of Ireland is consistent with evolving national climate policy and the changing character of Ireland's working landscapes. The focus for the LVIA of the Proposed Project was on a combination of distance, arrangement, location and potential disruption to key scenic sensitivities, rather than simply on whether turbines are visible or not from a particular vantage point.

The LVIA in Chapter 13 determined that no Significant landscape and visual effects were identified. The Proposed Project is effectively accommodated within the landscape without any significant effects on the key scenic or landscape sensitivities of receptors identified in the 20km LVIA Study Area. The Proposed Project is appropriately designed and suitably scaled, and it has been demonstrated that no significant landscape and visual effects are likely to arise

Overall, the LVIA in Chapter 13 identifies that the Proposed Project is an appropriately designed development, sited in a rural, modified working landscape of significantly low population density deemed capable of accommodating wind energy development. The Proposed Project is therefore considered acceptable in this context and is in alignment with emerging baseline trend.

14

# Archaeological, Architectural & Cultural Heritage



Chapter 14 was prepared by IAC Archaeology and details an archaeological, architectural, and cultural heritage assessment of the Proposed Project. The assessment is based on a desktop assessment of the available cultural heritage and archaeological data, field survey, GIS based mapping, ZTV, and was also assisted by representative photomontages and photowire images.

A total of 123 no. archaeological sites, or groups of sites, are located within the 5km study area (5km from proposed turbines). Two of these, ringforts AH97 and AH98, are located within the Proposed Wind Farm site and will not be subject to direct effects. Of the identified archaeological sites, or groups of sites, 4 no. are located within 50m of the Proposed Grid Connection, along with 5 no. built heritage sites and 17 no. previously unidentified sites of cultural heritage significance.

The construction of the Proposed Project will not result in any direct, negative effects on the recorded archaeological and architectural heritage resource as none of these sites are located within the footprint of the Proposed Project infrastructure that require excavations and ground works. Ground disturbance associated with the construction of Proposed Wind Farm will have direct negative (permanent) effect on CH44 (the possible sub-surface remains of two vernacular buildings) and six townland boundaries (TB2–5, TB7–8). The effects will be slight.

Mitigation measures include pre-construction archaeological test trenching, and archaeological monitoring during the construction stage of the Proposed Project. If archaeological remains are identified during the course of these works further mitigation may be required, such as preservation by record or in-situ. Any further mitigation will require agreement from the Department of Housing Local Government and Heritage.

An assessment of the potential, indirect operational impacts on the archaeological, architectural and cultural heritage resource has been carried out. No significant negative operational impacts have been identified.

An assessment of potential cumulative effects was also undertaken taking into consideration, including proposed or permitted developments within 10km of the proposed turbines, and permitted or proposed wind farms within 20km of the proposed turbines. No negative cumulative effects have been identified.

# 15 Material Assets

## 15.1 Traffic and Transport



An assessment of the traffic effects on the local highway network was undertaken for the Proposed Project. The assessment considers the likely impacts on the transport delivery route to the Site resulting from the additional traffic movements that will be generated by the Proposed Project during the construction, operational and decommissioning phases.

An assessment of the geometry of the delivery route was also undertaken in order to ensure that the abnormally sized vehicles required to deliver the turbine plant to the site are accommodated.

It is estimated that it will take 18 to 24 months to construct the Proposed Project, during which construction traffic will travel to and from the Site.

**Traffic Route & Study Area**

The proposed port of entry for the large wind turbine components is the Port of Galway in Galway City. From the Port of Galway the turbine delivery route is as follows;

- From Galway Harbour through Galway city on the L5048 Lough Atalia Road, the L5034 and the R336 Tuam Road to the N6 (3.3km).
- From the junction with the R336 Tuam Road in Galway City the turbine delivery route heads eastbound on the N6 passing through junctions with the R865 at Ballybrit and the R339 Monivea Road at Briarhill, before heading southeast to the Coonagh Roundabout (3.2km).
- From the Coonagh Roundabout the route heads east on the N6 and M6 (15.1 km), to Junction 17 of the M6 with the R348 located to the south of Athenry.
- The route then travels northeast passing through one roundabout on the R348 before turning right at the R347 / R347 Buanmore Roundabout (1.4 km).
- The turbine delivery route then travels south on the R348 (0.4 km) to the junction with the R347.
- From this point the route travels east on the R348 (8.4km) to the village of Kiltullagh. On this section of the route the R348 traverses the M6 at 2 locations, the western crossing by means of an underpass, and the eastern crossing via an overpass.
- From the village of Kiltullagh the route heads north on the R348 (0.4km) before continuing north on the L3115 (4.9km) to the location of the Proposed Wind Farm access junction situated on the east side of the road

The abnormal loads will be delivered in convoys of 3 vehicles per night over 22 separate nights, with each convoy accompanied by a Garda escort.

All other construction related traffic will gain access to the Site via the same site access junction off the L3115, which will also be retained to provide access for maintenance staff once the Proposed Wind Farm is in operation.

The Proposed Grid Connection will connect the proposed on-site 38kV substation to the existing 220kV Cashla Substation located in the townland of Barrettspark, Co. Galway. The underground cabling route measures approximately 21.8km of which approximately 19.5km is located within the public road corridor with the remaining 2.3km located in private land or existing private track. It is estimated the route will take approximately 218 days to construct during which a road closure will be required at one point on the network on approximately 195 of these days.

**Vehicle types and network geometry**

The types of vehicles that will be required to negotiate the local network will be up to 87 metres long and will carry a blade 81.5 metres in length.

An assessment of the geometric requirements of the delivery vehicles was undertaken on the delivery route. Locations where remedial works may be necessary to accommodate the delivery vehicles were identified. In addition to the assessment presented, it is recommended that a dry run is undertaken by the transport company to check vertical and horizontal clearance on the transport route prior to construction.

**Traffic impact on local network**

For 218 days, when general construction works will take place simultaneously to the construction of the Proposed Grid Connection, an additional 373 PCUs will travel to/from the Proposed Wind Farm site via the identified construction delivery routes. During these days it is forecast that the increase in traffic volumes will range from between +3.4% to 5.3% on the 3 arms of the Baunmore Roundabout. Travelling toward the Site the forecast increase on these days will increase to +13.4% on the R348 north of Kiltullagh and to +16.9% on the L3115 leading to the Site.

For 8 days when concrete is delivered to the Proposed Wind Farm for the construction of the turbine foundations via the identified construction delivery routes, and additional 584 PCUs will travel to/from the Site. During these days it is forecast that the increase in traffic volumes will range from between +5.3% to 8.3% on the 3 arms of the Baunmore Roundabout. Travelling east toward the Site the forecast increase on these days will increase to +20.9% on the R348 north of Kiltullagh and to +26.4% on the L3115 leading to the Site.

On the 22 nights that the abnormal loads carrying the large turbine components travel to the Proposed Wind Farm site via the TDR at the same time as general construction traffic continues during the day, an additional 345 PCUs will travel to/from the Site. During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +3.2% to 4.9% on the 3 arms of the Baunmore Roundabout, +12.4% on the R348 north of Kiltullagh and +15.6% on the L3115 leading to the Site.

For 8 days when general site construction continues at the same time that the delivery of smaller turbine components are made to the Site by standard HGVs it is forecast that an additional 279 PCUs will travel to/from the Proposed Wind Farm via the turbine delivery route and the general construction routes. During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +2.5% to 3.9% on the 3 arms of the Baunmore Roundabout, +10.0% on the R348 north of Kiltullagh, and +12.6% on the L3115 leading to the Site.

For the remaining 127 days when general site construction only takes place on the Site it is forecast that an additional 260 PCUs will travel to/from the Proposed Wind Farm site via the TDR or general construction routes. During this period it is determined that the additional traffic will result in an increase in traffic volumes ranging from +2.4% to 3.7% on the 3 arms of the Baunmore Roundabout, +9.3% on the R348 north of Kiltullagh, and +11.8% on the L3115 leading to the Site.

Once the Proposed Project is operational the traffic impact created by maintenance staff will be imperceptible. There will be no significant traffic related impacts during the construction, operational and decommissioning phases of the Proposed Project.

## 15.2 Telecommunications and Aviation

Wind turbines, like all large structures, have the potential to interfere with broadcast signals, by acting as a physical barrier or causing a degree of scattering to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, affecting, for example,

radio signals. The most significant potential effect occurs where there are proposed turbines directly in line with the transmitter radio path.

During the development of any large project that holds the potential to effect telecoms or aviation, the developer is responsible for engaging with all relevant telecom operators and the relevant aviation authorities to ensure that the proposal will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the developer for each individual project is responsible for ensuring that the necessary mitigatory measures are in place. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise.

A total of 4 no. links and their associated buffers pass through or in the vicinity of the Site. Consultation regarding the potential for electromagnetic interference from the Proposed Wind Farm was carried out with the relevant national and regional broadcasters, fixed line and mobile telephone operators and other operators, which confirmed that no turbines are proposed within the areas requested to be left clear of turbines. Therefore, no impacts were identified to telecommunications from the Proposed Wind Farm.

A Telecommunications Impact Assessment (Appendix 15-5) was carried out by Ai Bridges. This details the field and desktop surveys undertaken to determine if telecommunications network infrastructure, notably those highlighted by Iarnród Eireann, would be impacted by the proposed turbines. The Telecommunications Impact Assessment concludes that at this distance the proposed turbines will have no impacts on the Irish Rail communications network.

There are no airports or aerodromes located within or adjacent to the Site. The nearest operational airport is Galway Airport located approx. 22.5km west of the Proposed Wind Farm site and the nearest operational airfield is Craughwell Airfield which is located approx. 9.6km southwest of the Proposed Wind Farm site. The closest large international airport is Knock Airport which is located over 67km north of the Proposed Wind Farm site. Other airports/airfields in the vicinity of the Proposed Wind Farm include Shannon Airport, located over 72km south of the Proposed Wind Farm site, Connemara Airport, located over 57km to the west of the Proposed Wind Farm site, and the University of Galway helipads which are both located approximately 31km to the west of the Proposed Wind Farm.

Consultation regarding the potential for electromagnetic interference and impact on aviation Proposed Wind Farm was carried out which confirmed that no proposed turbines are proposed within the areas requested to be left clear of turbines. Therefore, no impacts were identified to telecommunications or aviation from the Proposed Wind Farm.

The potential for electromagnetic interference from proposed turbines may only occur during the operational phase of the Proposed Wind Farm and the Proposed Grid Connection. There are no electromagnetic interference impacts for telecommunications and aviation assets or operations associated with the construction phase of the Proposed Wind Farm or Proposed Grid Connection and therefore no mitigation required.

## 15.3 Other Material Assets

This section of the Material Assets chapter considers other utilities or built services in the area such as electricity supply and transmission, water, gas and underground telecommunications. This section also considers waste management during the construction, operational and decommissioning phases of the Proposed Project.

There are no 110kV or 38kV overhead electricity lines within or adjacent to the Proposed Wind Farm or the Proposed Grid Connection. There are no 38kV or higher known existing underground electricity cables present on the Proposed Wind Farm site or along the Proposed Grid Connection.

There are no gas lines located within the Proposed Wind Farm site. The Proposed Grid Connection interacts with a GNI pipeline at 1 no location and a GNI telecoms duct at 1 no. location. Detailed

consultation has been held with the GNI, including a meeting on 24th June 2025, in relation to these interactions. The proposed crossing methodology at the high-pressure pipeline will be Horizontal Directional Drilling (HDD). No settlement is expected as no excavation and replacement are involved in the HDD process. Prior to construction, the Applicant will engage with GNI via the 'Dial Before You Dig' procedure online. GNI will be contacted on **before** excavating near the identified high-pressure pipeline. Furthermore, the '*Safety advice for working in the vicinity of natural gas pipelines'* guidance document and the GNI '*Code of Practice*' standards will be adhered to during all proposed works along the Proposed Grid Connection in vicinity of the high-pressure pipeline and the telecommunication lines.



There is 1 no. known water main within the Proposed Wind Farm site which does not interact with any Proposed Wind Farm infrastructure, it is located within the public road corridor of the L3115 and traverses to the west and north of the Proposed Wind Farm. Water mains are present along the L7108, L3103, L31030, L7122, L7126, L3107, L3111, L7152, and L3115 local roads and the R347 regional road. Uisce Éireann water mains are located within the public road corridor, the Proposed Grid Connection will run alongside these water mains.

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the Site. A Waste Management Plan (WMP) has been prepared and forms part of the Construction and Environmental Management Plan (CEMP) in Appendix 4-5 of the EIAR.

With the implementation of best practice measures and all mitigation and monitoring measures set out in Chapter 15, the effects on utilities and waste management listed above will be imperceptible for the short-term construction phase and decommissioning phases.

There will be no operational phase impacts or associated effects on built services or waste management associated with the Proposed Project. The Proposed Project will have an estimated installed capacity of 48.8MW which has potential to produce 149,620 MWh of electricity. This would be sufficient to supply approximately 35,624 Irish households with electricity per year during its operational phase. The Proposed Project will therefore have a positive, moderate, long-term effect on built services

16

# Major Accidents and Natural Disasters



Chapter 16 of the EIAR describes the likely significant effects on the environment arising from the vulnerability of the Proposed Project as detailed in Chapter 4: Description of the Proposed Project to risks of major accidents and/or natural disasters.

Major accidents or natural disasters are hazards which have the potential to affect the Proposed Project and consequently have potential impacts on the environment. These include accidents during construction and operation caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or disaster considers all factors defined in the EIA Directive that have been considered in this EIAR, i.e., population and human health, biodiversity, ornithology, land, soil, water, air quality, climate and material assets, cultural heritage and the landscape.

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment has been carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 16.3 of this EIAR.

The scenarios with the highest risk score in terms of the occurrence of major accident and/or disaster during construction, were identified as identified as ‘Fire/Explosion’, ‘Peat Stability’ and ‘Contamination’, risk of ‘Fire/ Explosion’ and ‘Contamination’ during operation and decommissioning. In addition the next highest score was for ‘Severe Weather’ during construction, operation, and decommissioning.

The Proposed Project has been designed and will be built in accordance with the best practice measures set out in this EIAR and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design.

The risk of a major accident and/or disaster during the construction of the Proposed Project is considered ‘low’ in accordance with the ‘Guide to Risk Assessment in Major Emergency Management’ (DoEHLG, 2010).

All elements of the Proposed Project were assessed to identify any cumulative effects. A wind farm including all its various components including the grid connection works, substation, roads, turbines etc is not a recognised source of pollution. It is not subject to Industrial Emissions Directive regulation or any other Environmental Protection Agency environmental regulatory consent. Should a major accident or natural disaster occur the potential sources of pollution onsite during the construction, operational and decommissioning phases are limited and of low environmental risk. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable materials etc. are limited and so there is an inherent low level of environmental risk associated with major accident or natural disaster

When the implementation of best practice measures, and all proposed mitigation and monitoring measures detailed in the EIAR are implemented, the residual effect(s) associated with the construction, operation and decommissioning of the Proposed Project are not significant.

17

# Interaction of the Foregoing



Chapter 17 of this EIAR identifies the potential significant environmental effects that may occur in terms of Population & Human Health, Biodiversity, Birds, Land, Soils & Geology, Water, Air Quality, Climate, Noise & Vibration, Landscape & Visual, Archaeology, Architectural & Cultural Heritage, Material Assets and Major Accidents & Natural Disasters, as a result of the Proposed Project. All potential significant effects of the Proposed Project and the measures proposed to mitigate them have been outlined in the main EIAR. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them or have a neutral effect. A matrix is presented in Chapter 17 of the EIAR to identify interactions between the various aspects of the environment already discussed in the EIAR. The matrix highlights the occurrence of potential positive or negative impacts during the construction, operational and decommissioning phases of the Proposed Project. Where any potential interactive impacts have been identified, appropriate mitigation is included in the relevant sections (Chapters 5–16) of the EIAR.