# NON-TECHNICAL SUMMARY

## 1 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of SSE Renewables (Ireland) Ltd. who intends to apply to An Coimisiún Pleanála (ACP) for planning permission to remove 23 no. existing turbines and construct a renewable energy development comprising 17 no. turbines and all associated infrastructure in the townlands of Crowagh and Dunneill Mountain, Co. Sligo.

The proposed project will be known as Crumhach Wind Farm and for the purposes of this EIAR:

- Where the 'Proposed Project' is referred to this encompasses the entirety of the project for the purposes of this EIA in accordance with the EIA Directive. The Proposed Project is described in detail in Chapter 4 of this EIAR.
- Where 'the Site' is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary and encompasses an area of approx. 1,546ha.
- Where the 'Proposed Wind Farm' is referred to, this refers to turbines and associated foundations and hard-standing areas, access tracks, temporary construction compounds, onsite 110kV substation, internal underground cabling, onsite LiDAR compounds, peat and spoil management, site drainage, biodiversity enhancement, turbine delivery route (TDR) accommodation works and all ancillary works and apparatus. The Proposed Wind Farm is described in detail in Chapter 4 of this EIAR.
    - The 'Proposed Turbines' refers to the 17 no. turbines associated with the Proposed Wind Farm as outlined above.
- Where the 'Proposed Grid Connection Route' is referred to this encompasses the 110Kilovolt (kV) underground cabling connecting the proposed onsite 110kV substation to the existing Srananagh 220kV substation, and all ancillary works and apparatus. The Proposed Grid Connection Route is described in detail in Chapter 4 of this EIAR.
- Where the 'Existing Wind Farm' is referred to, this relates to all components of the existing Dunneill and Kingsmountain Wind Farm developments as outlined in Section 1.1.1 below.
    - Where differentiation is required between the Dunneill and Kingsmountain Wind Farms within the EIAR these are called out as necessary.
- Where the 'Existing Grid Connection' is referred to, this relates the existing underground cabling connecting the existing onsite control buildings for the Existing Wind Farm to the existing Cunghill 110kV substation.

In addition:

- Where the construction phase is detailed and assessed within the EIAR, this includes for the removal of the existing 23 no. turbines and the construction of the proposed 17 no. turbines and associated infrastructure on site.
- Where the operational phase is detailed and assessed within the EIAR, this includes for the operation of the proposed 17 no. turbines on site.
- Where the decommissioning phase is detailed and assessed within the EIAR, this includes for the decommissioning of the proposed 17 no. turbines on site.

This EIAR will accompany the planning application for the proposed renewable energy development to be submitted to ACP. The planning application will also be accompanied by a Natura Impact Statement (NIS). Both the EIAR and NIS contain the information necessary for ACP 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 of these individual elements of the Proposed Project.

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

## Brief Description of the Proposed Project

The Proposed Project will comprise the removal of 23 no. existing turbines and the construction of 17 no. new turbines and all associated works. The Proposed Wind Farm will have two grid connections, the Existing Grid Connection and the new Proposed Grid Connection Route. The Proposed Grid Connection Route will involve the construction of a new underground cable connection to the existing Srananagh 220kV substation and will be subject to a separate, future planning application under Section 182A of the Planning and Development Act 2000, as amended, however, it is assessed in this EIAR.

The full description of the Proposed Project is detailed in Chapter 4 of this EIAR. The current planning application, relating to the Proposed Project is being made to ACP under Section 37E of the Planning and Development Act, as amended. The application for the Proposed Project includes a design flexibility opinion issued by ACP under Section 37CD of the Planning and Development Act 2000, as amended (Case Reference ACP-323811-25), allowing for permission for a range of turbine dimensions to be sought. The Proposed Project complies with the definition as listed in the Seventh Schedule of the Planning and Development Act 2000, as amended and is therefore subject to the requirements of the Renewable Energy Directive (RED) III Directive transposed into Irish Law by the European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. No. 274 of 2025). The Proposed Project is being brought forward as a new renewable energy development with repowering elements and is therefore considered a 'new wind farm' within the context of the RED III Directive.

The development description for the current planning application as appears in the public notices is as follows:

- *Removal of 23 no. existing turbines permitted under Sligo County Council Ref. No. 97/469, 02/846, 03/619 (the latter granted on appeal by An Coimisiún Pleanála PL21.204790) and 22/291;*
- *Erection of 17 no. wind turbines within the following parameters:*
  - *a turbine tip height range of 176.6 metres to 180 metres;*
  - *a rotor diameter range of 133.2 metres to 150 metres; and*
  - *a hub height range of 105 metres to 110 metres.*
- *Permanent turbine foundations, hard-standing and assembly areas;*
- *A new permanent 110kV electrical substation compound including control buildings (with a combined floor area of 654sq.m) incorporating welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, lightning protection poles, an underground wastewater holding tank, drainage and all ancillary works;*
- *Upgrade of and permanent continued use of 2 no. existing onsite control buildings comprising: 1 no. control building located in the townland of Tawnadremira (with a floor area of c. 118.4sqm), permitted under Sligo County Council Planning References 03/619 (granted on appeal by An Coimisiún Pleanála PL21.204790), 10/371, and 22/291; and 1 no. control building located in the townland of Kingsmountain (with a floor area of c.71sqm), permitted under Sligo County Council Planning References 97/469 and 03/382.*
- *Underground electrical and communications cabling connecting the proposed wind turbines to the existing onsite control buildings and the proposed 110kV on-site electrical substation;*
- *4 no. temporary construction compounds with site offices and welfare facilities (with a combined floor area of 324 sqm);*

- *Upgrade of 1 no. existing site entrance off the L6309 in the townlands of Ballyglass and Crowagh or Dunneill Mountain;*
- *1 no. new site entrance off the L6309 in the townlands of Ballyglass and Crowagh or Dunneill Mountain;*
- *Upgrade of 1 no. existing site entrance off the L2702 in the townland of Crowagh or Dunneill Mountain;*
- *2 no. new site entrances off the L2702 in the townland of Crowagh or Dunneill Mountain;*
- *Upgrade of existing site tracks and provision of new site access tracks, clear span crossings, junctions and hard-standing areas;*
- *Accommodation works along the N59 in the townlands of Corhawnagh and Abbeytown, along the R297 in the townland of Knockaculleen, along the L2702 in the townland of Lecarrow and Dromore, along the L2702 in the townland of Rathgoonaun and along the L2702 and L6309 in the townland of Crowagh or Dunneill Mountain, to facilitate the delivery of turbine components and other abnormal sized loads to site;*
- *A new temporary access road off the L2702 to the L6309 in the townlands of Crowagh or Dunneill Mountain;*
- *3 no. temporary borrow pits;*
- *2 permanent LiDAR compounds;*
- *Peat and Spoil Management areas;*
- *Tree felling and hedgerow removal;*
- *Biodiversity Management and Enhancement measures (inclusive of peatland restoration and management);*
- *Site Drainage;*
- *Operational stage site signage; and*
- *All ancillary apparatus and site development works above and below ground, including soft and hard landscaping and drainage infrastructure.*

The application is seeking a ten-year planning permission and 35-year operational life from the date of commissioning of the renewable energy development. 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.

The Applicant for the Proposed Project is SSE Renewables (Ireland) Ltd. SSE Renewables (Ireland) Ltd is a leading developer and operator of renewable energy generation, focusing on onshore and offshore wind farms, hydro-electric power and flexible battery storage technologies. It is part of electricity infrastructure company SSE plc, a FTSE100 company with operations across the UK and Ireland, and a presence in carefully selected international markets. SSE Renewables delivers clean power assets to increase SSE's operational renewable generation capacity as part of the company's five-year investment plan to 2030. This includes delivery of the world's largest offshore wind farm in construction, the 3.6GW Dogger Bank Wind Farm. SSE Renewables operates some of the leading onshore wind farms in Ireland including the 174MW Galway Wind Park in Connemara and the 73MW Slieve Kirk Wind Park outside Derry City.

## 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: Background to the Proposed Project, of this EIAR.

The Proposed Project provides the opportunity to capture an additional part of County Sligo's valuable renewable energy resource. If the Proposed Project were not to proceed, this opportunity to harness the wind energy resource of County Sligo'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.

As such, the Proposed Project is critical to helping Ireland address these challenges as well as addressing the country's over-dependence on imported fossil fuels.

## 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.

It is estimated that the Proposed Project has the potential to create up to 100 jobs during the construction phase and 3-4 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: Population and Human Health of this EIAR.

Commercial rate payments will be provided to Sligo County Council each year which will be redirected to the provision of public services within the County. 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.

Should the Proposed Project receive planning permission, there are substantial opportunities available for the local area in the form of Community Benefit Funds. The value of the Community Benefit Fund for the Proposed Project will be linked to the productivity of the Proposed Wind Farm and is calculated based on €2/MWh of the overall total generated by the Proposed Wind Farm.

The Proposed Project will also be capable of providing electrical energy to approx. 74,460 Irish households with electricity per year, based on the average Irish household using 4.2 MWh of electricity[1], as presented in the calculations in Chapter 4 of this EIAR.

## 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:

1. Introduction
2. Background to the Proposed Project
3. Site Selection and Reasonable Alternatives

[1] *March 2017 CER (CRU) Review of Typical Consumption Figures Decision Paper* https://www.cru.ie/document_group/review-of-typical-consumption-figures-decision-paper/

4. Description of the Proposed Project
5. Population and Human Health
6. Biodiversity
7. Birds
8. Land, Soils and Geology
9. Hydrology and Hydrogeology
10. Air Quality
11. Climate
12. Noise and Vibration
13. Landscape and Visual
14. Cultural Heritage
15. Material Assets (including Traffic and Transport, Telecommunications and Aviation)
16. Major Accidents and Natural Disasters
17. Interactions of the Foregoing
18. Schedule of Mitigation Measures

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

# 2 Background to the Proposed Project

Chapter 2: Background to the Proposed Project of this 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 the nature of the cumulative impact assessment process undertaken.

The Proposed Project 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.

The Proposed Project is subject to the requirements of the RED III Directive transposed into Irish Law by the European Union (Planning and Development) (Renewable Energy) Regulations 2025 (S.I. No. 274 of 2025). The Proposed Project is being brought forward as a new renewable energy development with repowering elements and, is therefore, considered a 'new wind farm' within the context of the RED III Directive.

A gradual shift towards increasing Ireland's use of renewable energy is no longer viable. There is an urgency now to ensure real changes occurs without delay. Renewable energy development is recognised as a vital component of Ireland's strategy to tackle the challenges of combatting 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 of decarbonising the electricity sector and energy security in Ireland.

Ireland's 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.

In the context of the current energy and climate crisis, it is deemed environmentally prudent and a sustainable form of development to utilise a site which already hosts a wind energy development, as well as utilising the existing wind farm infrastructure rather than allowing this infrastructure and the Site to become redundant. The Proposed Project represents an opportunity to utilise existing wind farm infrastructure with the provision of 17 no. new turbines that will result in an increased generating

capacity at the Site, providing clean, renewable electricity to the national grid, which will contribute towards achieving further decarbonisation of Ireland's electricity generation sector.

## Local Planning Policy

It is considered that the Proposed Project is consistent with the policies and objectives of the Sligo County Development Plan 2024 – 2030.

**Sligo County Development Plan 2024 - 2030**

The Sligo County Development Plan 2024 – 2030 (SCDP) 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 as assessed. The policies and objectives set out within the SCDP 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 SCC acknowledging that continual action is needed for Sligo to become a low-carbon and climate-resilient county.

**Sligo County Council Local Authority Climate Action Plan**

The Sligo County Council Climate Action Plan, 2024 – 2029 (LACAP) sets out a strong precedent for the Council's responsibility to ensure the County's reduction in carbon emissions in line with the Climate Act.

> *"The Climate Action and Low Carbon Development (Amendment) Act 2021, which also frames Ireland's legally binding climate ambition, requires a reduction in greenhouse gas emissions by Sligo County Council of 51% by 2030, placing the country on a trajectory to achieving climate neutrality by the end of 2050."*

In relation to renewable energy, the Sligo LACAP outlines the following policy action within Theme 3, which supports the research and development of renewable energy that is in line with environmental protection requirements:

> *'**Objective 1:** Support the key areas identified in the National Climate Action Plan in relation to energy efficiency & emissions reductions (retrofitting & renewable energy)'.*

The SCDP recognises the necessity for *'a secure and resilient supply of energy'* in order to meet the demand for energy which is set to increase in the coming years.

SCC will prepare a Renewable Energy Strategy in accordance with the forthcoming Regional Renewable Electricity Strategy and the revised Methodology for Local Authority Renewable Energy Strategies. It is stated that in the '*interim period, the Planning Authority will continue to assess all wind energy development proposal using the criteria set out in the DECLG's Wind Energy Guidelines (2006).'*

In summary, the SCDP and associated LACAP fully recognise the importance of tackling climate change through the increased supply of renewable energy. The LACAP outlines the County's commitment to climate action and the need to meet national objectives regarding a reduction in GHG emissions. SCC seeks to support and facilitate the sustainable provision of a reliable energy supply in the County, with emphasis on increasing energy supplies derived from renewable resources. Furthermore, there are a range of policies in place which support the development of renewable energy.

## Wind Energy Development Guidelines

The relevant considerations under the 'Wind Energy Development Guidelines for Planning Authorities'(Department of the Environment, Heritage and Local Government (DoEHLG), 2006) ('the DoEHLG 2006 Guidelines') have been taken into account during the preparation of the EIAR.

The DoEHLG 2006 Guidelines were the subject of a targeted review. The proposed changes to the assessment of impacts associated with onshore wind energy developments were outlined in the document Draft Revised Wind Energy Development Guidelines (Department of Housing, Planning and Local Government (DoHPLG), 2019) ('the Draft DoHPLG 2019 Guidelines'). At time of writing, the Draft DoHPLG 2019 Guidelines have not yet been adopted, and the relevant guidelines, remain to be the DoEHLG 2006 Guidelines. Notwithstanding this, however, due to the timelines associated with the planning process for renewable energy projects it is possible that the Draft DoHPLG 2019 Guidelines may be adopted during the consideration period for the current planning application. Should the Draft DoHPLG 2019 Guidelines be adopted in advance of a planning decision being made on this application, the Proposed Wind Farm will be capable adhering to the relevant noise and shadow flicker standards.

While the final updated Guidelines have not yet been published it should be noted that noise and shadow flicker are controllable and are discussed further in Chapter 12: Noise and Vibration and Chapter 5: Population and Human Health of the EIAR, respectively. The turbine locations adhere to the DoEHLG 2006 Guidelines and Draft DoEHLG 2019 Guidelines in relation to turbine setback: a minimum 500m set back from sensitive receptors and a minimum setback of four times the tip height of the Proposed Turbines.

## Planning History

A planning search was carried out through the national planning application database and ACP's online planning portal in June 2026 for relevant planning applications submitted that fall within the planning application boundary of this application.

A planning search was carried out to establish permitted, operational and proposed wind energy developments within 25km of the proposed turbines for the purposes of informing the potential cumulative effects (see Section 2.9.2 of this Chapter for further details). The search was carried out using the relevant local authority, ACP's and EIA planning portals in June 2026 for relevant planning applications.

In total, no. 15 applications relating to wind energy were identified within 25km of the proposed turbines, no. 4 of which relate to single wind turbine developments and a further no. 11 of which relate to larger multiple turbine wind farm development

## 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 September 2024 and October 2024. The scoping documents provided details of the Proposed Project and set out the scope of work for the EIAR. Consultees were invited to contribute to the EIAR by suggesting baseline data, survey techniques and potential impacts that should be considered as part of the assessment process and in preparation of the EIAR.

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 the 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, including meetings held with ACP under the provisions of Section 37B of the Planning and Development Act 2000, as amended and engagement with Sligo County Council. Further consultation was carried out with statutory consultees, with members of the Project Team, meeting the National Parks and Wildlife Service (NPWS).

Community consultation and engagement has been undertaken by the Applicant, details of which can be found in Appendix 2-2 of this EIAR. In summary, the report was prepared to record the consultation carried out with the local community in respect of the Proposed Project. The applicant has carried out consultation in relation to the Proposed Project with local residents surrounding the Proposed Wind Farm and interested parties in the wider community. The objective of the consultations was to ensure that the views and concerns of all were considered as part of the Proposed Project design and EIA process.

## 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 2-7 of this EIAR.

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 Site Selection and 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. To ensure that the levelised costs of building each megawatt of electricity-generating capacity on a wind farm is controlled efficiently, it is incumbent on the design team to ensure that the most suitable site for development of a wind farm development is chosen. 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 assessment carried out for the determination of a suitable location for the Proposed Project was a two-stage process. which are described in the following sections.

- Phase 1 – SSE Renewables (Ireland) Operational Site Portfolio Review
- Phase 2 – Site Specific Assessment

## Phase 1 - SSE Renewables (Ireland) Operational Wind Farm Portfolio Review

The Applicant has undertaken a review of their operational wind farm portfolio on sites approaching 20 years of operation with a view to determining if they should be decommissioned, the operational life extended, or if they were suitable for repowering.

Certain sites were considered unsuitable for repowering due to the proximity of nearby sensitive receptors. For these sites whereby they had associated planning restrictions on their operational life, extension of operational life applications were made to the relevant Planning Authority.

Other sites were considered suitable for repowering primarily due to their location and proximity of nearby sensitive receptors. Two such sites were:

- Dunneill Wind Farm, Co. Sligo
- Kingsmountain Wind Farm, Co. Sligo

## Phase 2 – Strategic Site Selection

The Dunneill and Kingsmountain projects were chosen given the opportunity to approach their repowering as one project. Dunneill Wind Farm, which accounts for 13 no. turbines within the Existing Wind Farm received a grant of permission consisting of a fifteen-year continuation of the operational life of the existing wind farm from the date of expiration (March 2024). Kingsmountain Wind Farm, which accounts for 10 no. turbines within the Existing Wind Farm, has no expiration date on its grant of permission, however it is envisaged it will have reached the end of its operational life prior to the decommissioning of Dunneill Wind Farm.

Following the decision to repower the Existing Wind Farm, a site selection process was undertaken to see the viability of the repowering of the Existing Wind Farm. The site selection process for the Proposed Project has been informed by national, regional and local policy at a macro level (see

Chapter 2: Background to the Proposed Project), as well as site specific factors that influence the turbine layout and the project design on the Site at a micro level.

During this site selection process and a review of the availability of land in a sparsely populated area around the Existing Wind Farm, the Applicant then considered the benefits of developing a greenfield site in addition to repowering the Existing Wind Farm compared to repowering the Existing Wind Farm alone. The Site, inclusive of the greenfield land was then brought through the site selection process and was considered as a new renewable energy development with repowering elements.

## Site Selection

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

- **Planning Policy**
- **Environmental Sensitivities**: Located outside areas designated for protection of ecological species and 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.

The Proposed Project is situated within the administrative area of Sligo County Council and is therefore subject to the planning policies and objectives set out in the Sligo County Development Plan 2024-2030 (CDP). It is outlined in Chapter 31 of the CDP that *'Sligo's mountainous landscape and exposed location on the western seaboard combine to create good conditions for the generation of wind power.'*

The Site is located adjacent to 2 no. Nationally Designated or Natura 2000 sites, namely the Ox Mountain Bog Special Areas of Conservation (SAC) and Ox Mountain Bog Natural Heritage Area (NHA). Areas of the Ox Mountain Bog SAC are also situated within the Site. The proximity and connectivity to the Designated and Natura 2000 site was a key constraint in the design of the Proposed Project.

The Existing Wind Farm is connected to the National Grid via 2 no. existing onsite control buildings, which in turn connect to the existing Cunghill 110 kilovolt (kV) Substation via underground cable route. It is intended that the Proposed Project will utilise this underground electrical connection to Cunghill, which will require no upgrade works.

The Proposed Project also intends to connect to the national grid via a 110kV underground electrical cabling route that is predominantly along the public road network. It will originate at the proposed onsite 110kV substation and connect into the existing Srananagh 220kV Substation, in the townland of Ballysumaghan, Co. Sligo.

The Applicant sought to identify an area with a relatively low population density. Having reviewed the settlement patterns in the vicinity of the Existing Wind Farm, it emerged that there was a sufficient viable area to repower the section of the Site withing the Existing Wind Farm, as well increase the area of the Site in the greenfield area.

Given the existence of Dunneill and Kingsmountain Wind Farms and shared access tracks and grid connection infrastructure, the site of the Existing Wind Farm allows for an area of suitable scale for incorporation into the Proposed Project, as well as adjacent greenfield sections. This allowed for the Proposed Project to facilitate a larger scale in terms of capacity to capture the existing wind energy resource within the Site as a single development, rather than multiple smaller sites to generate the same export capacity as the Proposed Project.

The application of the above criteria, to identify if the Site was suitable with the inclusion of greenfield sections in addition to repowering of Existing Wind Farm, resulted in the selection of the Site for the Proposed Project as a candidate site to be brought forward for more detailed analysis.

## Alternative Renewable Energy Technologies

When considering alternative renewable energy developments to the Proposed Project, the Applicant considered offshore wind and commercial solar energy production. The Applicant 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 which include focusing on onshore wind energy developments.

To achieve the same maximum estimated electricity output from solar energy as is expected from the Proposed Project (102MW), a larger development footprint would be required. The EIAR Site Boundary encompasses an area of approximately 1,546ha and the permanent footprint of the Proposed Project measures approximately 27.6ha, which represents 1.8% of the Site. A solar PV array of the scale necessary to provide the same electricity output as the Proposed Project would require a footprint of approx. 163.2 ha or 11.5% of the overall Site.

A large portion of the Proposed Wind Farm is situated within the site of the Existing Wind Farm. It would not be suitable based on the area already being utilised for a wind farm, to consider alternative technologies, such as solar. It was deemed at an early stage in the Proposed Project development that replacing the existing turbines with solar PV array would not be an environmentally sensitive option for the Site.

For the reasons set out above, the proposal for a wind energy development at the Site was considered to be the most efficient method of electricity production with the lesser potential for significant environmental effects.

## Alternative Turbine Numbers and Model

It is proposed to remove the existing 23 no. turbines and install 17 no. 6MW turbines at the Proposed Wind Farm which could achieve approximately 102 MW output (mid-range capacity). Such a development could be achieved on the site of the Proposed Wind Farm by replacing the existing turbines with turbines of approx. the same dimensions (for example 2.5 MW machines). However, this would necessitate the construction of 40 no. turbines to achieve a similar output. Furthermore, the use of smaller turbines would not make efficient use of the opportunity to reduce the footprint of the Proposed Wind Farm.

The use of more efficient turbine models for repowering the Existing Wind Farm as part of the Proposed Project is also allowing the Applicant to significantly reduce the number of turbines to be constructed, while also achieving a larger generation output.

## 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, geotechnical, archaeological, and traffic specialists.

The final Proposed Wind Farm layout takes account of all site and design constraints (e.g. setback distances from houses and distances between turbines on site etc). The original layout for the Proposed Wind Farm comprised 25 no. turbines and was a result of a preliminary desk-based constraint mapping exercise and maximum potential energy output within the identified boundary from wind energy analysis. The final layout is based on the results of all site investigations and baseline assessments that

have been carried out during the EIAR process. As information regarding the Site was compiled and assessed, the proposed layout was revised and amended to take account of the physical constraints of the Site and the requirement for buffer zones and other areas in which no turbines could be located which resulted in the final layout comprising 17 no. turbines. The selection of the turbine number and layout has also had regard to wind-yield and the separation distance to be maintained between turbines, as well as landscape and visual, noise and shadow flicker impacts. The EIAR and Proposed Wind Farm design process was an iterative process, where findings at each stage of the assessment were used to further refine the design, always with the intention of minimising the potential for environmental impacts.

The final chosen turbine layout is considered the optimal layout given it has the least potential for environmental effects.

## Alternative Substations

The decision was made at an early stage to re-use the Existing Wind Farm control buildings onsite as part of the Proposed Project which are connected to the national grid via existing underground cabling to Cunghill 110kV substation. This was deemed the most environmentally sensitive approach as the footprint of the control buildings will remain the same, so no additional groundworks or construction will occur. The upgrade works will be confined to the existing footprint of the control buildings and will be carried out to ensure that they are in compliance with current EirGrid specifications.

The megawatt (MW) output of the Proposed Wind Farm is such that it needs to connect to a substation with voltage capacity of at least 110kV. While the existing onsite control buildings were selected to be included as part of the Proposed Project, it was determined a new location for the proposed onsite 110kV substation was required as the locations of the existing control buildings did not allow for required expansion areas to facilitate the export capacity of the Proposed Project.

The identification of a suitable substation location was informed by a range of environmental, technical, and socio-economic considerations. Site selection was undertaken with the objective of minimising potential environmental effects while ensuring technical and operational feasibility. The principal constraints and features assessed as part of this process included:

- Minimum distance from turbines
- Natural screening
- Grid connection feasibility
- Proximity to residential receptors
- Ecological and Environmental constraints,
- Land availability
- Planning and regulatory constraints

An assessment was carried out to determine three potential locations for the proposed onsite substation. The chosen option was deemed to be suitable due to the low value ecological habitats it is located on, proximity to the local road network in which to facilitate the connection of the greenfield sections of Proposed Wind Farm to the national grid, the presence of screening, and the existing ground conditions.

## Alternate Proposed Grid Connection Route

While the Existing Grid Connection was considered favourable to reutilise to connect the Proposed Project to the national grid, the opportunity to increase the export capacity of the Existing Wind Farm was limited. On this basis, the reutilisation of the Existing Grid Connection as well as the provision of an additional export capacity via a new grid connection was considered as part of the Proposed Project. Underground electrical cables will transmit the power output from the Proposed Turbines to the existing Srananagh 220kV substation located approx. 41.6 kilometres to the east of the Proposed Wind

Farm on new access tracks and within the public road corridor. Three options have been considered for the Proposed Grid Connection Route, and TLI Group were engaged by the Applicant to carry out a preliminary grid route assessment for the Proposed Project for 2 no. of the preferred routes. The Proposed Grid Connection Route has been revised and refined to take account of the findings of the site investigations and baseline assessments. The chosen option was identified as requiring a minimum number of watercourse crossings to construct and therefore has a lower possibility of interaction with watercourses. TLI Group led the design of the preferred Proposed Grid Connection Route which is detailed in Section 4.3.3 in Chapter 4: Description of the Proposed Project.

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 follow the route of existing public roads, thereby minimising the amount of ground disturbance required and will have a reduced permanent visual impact due to the placement of the cabling route underground, with no above ground infrastructure visible in the operational phase.

### Alternative Met Mast/LiDAR Compound

An onsite permanent meteorological (met) mast with a height of 100m in southwest of the Proposed Wind Farm was initially considered at the outset of the Proposed Project. The proposed met mast location was also constraints and facilitators led in its design, where an appropriate setback distance from the Proposed Turbines was incorporated during the design process. Following iterations to the layout of the Proposed Turbines, in order to maintain appropriate setbacks from the Proposed Turbines, the provision of 2 no. onsite LiDAR compounds, for the purpose of windspeed data acquisition were proposed, with one sited in the greenfield sections of the Proposed Wind Farm and the other using an existing hardstand within the Existing Wind Farm. This was chosen as an alternative as there will be no impact to the landscape or visual amenity while still providing the required onsite wind speed and data.

### Alternative Ancillary Structures

The use of multiple temporary construction compounds was deemed preferable to the alternative of a single large compound. Principally, it will result in shorter distances for traffic movements within each section of the construction of the various infrastructure components. 2 no. construction compounds are strategically located on existing areas of hardstanding at two opposite ends of the site to facilitate the construction of the Proposed Wind Farm, while 2 no. additional compounds are proposed at strategic locations in the west of the Proposed Wind Farm and to facilitate the construction of the onsite 110kV substation. As a result, vehicle emissions and the potential for dust arising will be reduced.

The use of onsite borrow pits represents an efficient use of existing onsite resources and reduces the need to transport large volumes of construction materials along the local public road network to the site. The use of an onsite resource reduces the use of existing off-site quarry material assets. The findings of the geological site investigations concluded that 3 no. potential borrow pits within the site were viable to extract material from for the purposes of the construction phase. The majority of material for site roads, turbine hardstands, etc. will be sourced from the proposed onsite borrow pits. The movement of the volume of material required for the construction of a 17 no. turbine wind farm would result in a large temporary increase in construction traffic and heavy loads, in combination with a potential for an increase in noise and dust emissions along the haul routes and was therefore considered a less preferable option.

### Alternative Biodiversity Management and Enhancement Mitigation Proposals

In combination with the evolution of the Proposed Wind Farm layout, alternative biodiversity management and enhancement measures were also considered as part of the Proposed Project. The Proposed Project will result in a loss of cutover/blanket bog and other peatland habitats. The proposed biodiversity management and enhancement areas have been constraints and facilitators led in their

design. For example, restoration of peatland habitat will only be developed in areas which have a suitable factor of safety value and negligible risk rating based on existing ground conditions and topography within the geotechnical and peat stability risk assessment. The proposed biodiversity management and enhancement has also been prepared in combination with iterations to the peat and spoil management plan where possible to include peatland restoration measures within identified peat management areas within the Proposed Wind Farm.

## Alternative Transport Route and Site Access

The ports of entry considered for the Proposed Turbines of the Proposed Project include Galway Harbour in Galway City and Killybegs Harbour in Co. Donegal due to their proximity to the Site. Both harbours offer roll-on roll-off procedures to facilitate import of wind turbines, however Killybegs Harbour was chosen due to the preference of primary use of the National and Regional roads where possible to access the Proposed Wind Farm.

For turbine transport, cognisance was taken of the haul routes used for other wind farm developments in the northwest in addition to the general preference to primarily use National and Regional roads where possible with minimal requirements for junction accommodation works. This approach was deemed preferable to using local roads to minimise significant upgrade works to local roads and associated environmental effects. In the case of the Proposed Project, consideration was given to the delivery route of the Existing Wind Farm. Of the proposed 134km turbine delivery route to the Proposed Wind Farm, only 6.6km will utilise local roads with the remainder being National Roads. In the case of the Proposed Project, consideration was given to the delivery route of the Existing Wind Farm.

## 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 at the Site, this has been offset with the proposal of habitat enhancement and creation of new habitat within the Site.

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 are 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 An Coimisiún Pleanála. 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, this includes the Proposed Wind Farm and Proposed Grid Connection Route. The Proposed Wind Farm is then shown in Figure 4-2. The Site location context is outlined in further detail in Chapter 1: Introduction.

The existing 23 no. turbines onsite will be removed from site in accordance with best practice at time of decommissioning prioritising reuse, refurbishment and recycling of the whole turbine or the components within it, avoiding landfill when feasible and practical to do so. The removal of turbines from the Existing Wind Farm will be completed in agreement with Sligo County Council (SCC) and in line with the conditions of the current planning permission for Dunneill Wind Farm and Kingsmountain Wind Farm. It is also proposed to dismantle the existing meteorological (met) mast within the Dunneill Wind Farm.

On the dismantling of existing turbines and met mast, it is not intended to remove the concrete foundation from the ground. It is considered that its removal will be the least preferred options in terms of having potential effects on the environment. Therefore, the turbine foundations not incorporated into the Proposed Project will be backfilled and covered with soil material.

It is proposed to continue the use of the 2 no. Existing Wind Farm onsite control buildings for the Proposed Project. The operation of the existing control buildings is proposed to be continued up to the decommissioning of the Proposed Wind Farm. Both control buildings will be accessed via Existing Wind Farm access tracks.

The Existing Wind Farm is connected to the national grid via the Existing Grid Connection, which comprises an approx. 19km underground cabling connection to the Cunghill 110kV substation in the townland of Cunghill, Co. Sligo. It is proposed to utilise the maximum export capacity from the Existing Grid Connection for the Proposed Project via connection of the onsite control buildings. No upgrade works are required or proposed along the Existing Grid Connection underground cable connection.

The remaining onsite infrastructure includes a number of areas of existing hardstanding associated with the turbine foundations, met mast hardstand, onsite borrow pits and access tracks.

The Proposed Wind Farm layout has been optimised using wind farm design software (WindPro) to maximise the energy yield while maintaining sufficient distances between the Proposed Turbines to ensure turbulence and wake effects do not compromise turbine performance. The ITM Grid Reference coordinates of the Proposed Turbines are listed in Table 4-1 below. The final Top of Foundation Level of the turbine foundations will be determined by the actual ground conditions at each of the Proposed Turbines and may differ slightly from those levels listed below.

*Table 0-1 Proposed Wind Turbine Locations and Elevations*

| Turbine | ITM Coordinates | | Top of Foundation Elevation (mOD) |
|---|---|---|---|
| | Easting | Northing | |
| T1 | 543507 | 826746 | 164 |
| T2 | 543440 | 827861 | 180.5 |
| T3 | 543602 | 826404 | 175 |
| T4 | 543655 | 827452 | 185 |
| T5 | 543941 | 826036 | 181 |
| T6 | 544012 | 828489 | 185 |
| T7 | 544519 | 828995 | 156 |
| T8 | 545257 | 828620 | 187 |
| T9 | 545425 | 828224 | 211 |
| T10 | 546041 | 828377 | 240 |
| T11 | 546688 | 828662 | 240 |
| T12 | 544272 | 828806 | 252 |
| T13 | 547412 | 829297 | 230 |
| T14 | 547754 | 828353 | 272 |
| T15 | 548292 | 828210 | 339 |
| T16 | 548570 | 827462 | 302 |
| T17 | 548194 | 827756 | 272 |

The Proposed Turbines to be installed on the Proposed Wind Farm will have the following dimension range:

- Turbine Tip Height Maximum height 180 metres, Minimum height 176.6
- Hub Height – Maximum height 110 metres, Minimum height 105 metres
- Rotor Diameter – Maximum diameter 150 metres, Minimum diameter 133.2 metres

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. The wind turbines that will be installed as part of the Proposed Project will be conventional three-blade turbines, that will be geared to ensure the rotors of all turbines rotate in the same direction at all times.

As detailed in Chapter 1, for the purposes of this EIAR and in compliance with the Opinion issued by ACP and further detailed in Chapter 2, various types and sizes of wind turbines, within the proposed ranges outlined above, have been selected for the purpose of assessing the likely environmental effects

of the turbines throughout this EIAR. This allows for a robust assessment of the likely environmental effects of the wind turbines within the proposed dimensional range. Turbine design parameters have a bearing on the assessment of shadow flicker, noise, visual impact, traffics and transport and ecology (specifically birds and bats), as addressed elsewhere in this EIAR.

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.

For the purposes of this EIAR, a rated output of 6MW has been chosen to calculate the potential generating capacity of the proposed 17-turbine renewable energy development, which would result in an estimated installed capacity of 102MW.

The layout of the Proposed Turbines has been designed so as to make as much use of the Existing Wind Farm access track network as possible. A combination of both new and existing access tracks will make up the access track network within the Proposed Wind Farm. Where existing access tracks and public road is to be used, only minor upgrade works are required. It is proposed to upgrade 8.2km of the Existing Wind Farm access tracks, 4.3km of existing public road corridor and to construct 5.1km of new access tracks on the Proposed Wind Farm.

It is proposed to develop 3 no. borrow pits as part of the Proposed Project. The proposed borrow pits will provide the majority of all rock and hardcore material required during construction of the Proposed Project. Usable rock may also be won from other infrastructure construction, including the turbine base excavations. Access to the borrow pits will be via existing access tracks running along the southern edge of each of the 3 no. borrow pits. Post-construction, the borrow pits will be reinstated with excavated spoil. The borrow pit area will then be reseeded. A stock-proof fence will be erected around the borrow pit areas, to prevent unauthorised access, during the construction phase and until the borrow pits have been fully reinstated.

Peat and spoil will be managed locally within the Proposed Wind Farm, in dedicated peat and spoil management areas. All excavated peat and spoil will be transported to one of the 3 no. borrow pits or to one of the designated peat and spoil management areas around Proposed Turbines. As such, there is enough capacity in the borrow pits, and peat and spoil management areas within the Proposed Wind Farm to manage any excess overburden generated through construction activities.

It is proposed to utilise the maximum export capacity from the Existing Grid Connection for the Proposed Project via connection to the Existing Wind Farm 2 no. onsite control buildings. To accommodate the remaining export capacity, the Proposed Turbines will connect via internal cabling to a proposed 110kV electricity substation within the Proposed Wind Farm. The footprint of the onsite 110kV substation compound measures approx. 14,340m$^2$ in area and will include 2 no. control buildings and the electrical substation components necessary to consolidate the electrical energy generated by each wind turbine, and export that electricity from the onsite 110kV substation to the national grid via the Proposed Grid Connection Route to Srananagh 220kV substation.

Each of the Proposed Turbines will be connected to either the existing onsite control buildings or proposed onsite 110kV substation via underground cabling. Fibre-optic cables will also connect each of the Proposed Turbines to the onsite control buildings or proposed onsite 110kV substation. The electricity and fibre-optic cabling connecting to the onsite control buildings and proposed onsite 110kV substation compound will be run in cable ducts approx. 1.2 metres beneath ground level, along the sides of roadways or under the roadways. The route of the cable ducts will follow the access track to each turbine location. The exact configuration of the underground cabling will be set by the requirements of the electrical designers at detailed design stage.

There are 4 no. temporary construction compounds proposed as part of the Proposed Project. 2 no. of these temporary construction compounds are located on areas of existing hardstanding which will be upgraded and extended in order to accommodate the compounds. Upon completion of the construction phase, the temporary construction compounds will be removed as part of the post-construction reinstatement works of the Proposed Wind Farm. The concrete foundations of the compound will be left in situ and will be left to revegetate naturally, enhanced by spreading of an appropriate seed mix as required.

2 no. LiDAR compounds are proposed as part of the Proposed Project. These hardstandings will be 17.5m$^2$ in area each and will accommodate the equipment that will be used to install the LiDAR compounds. The proposed LiDAR compounds will be equipped with wind monitoring equipment, uninterrupted power supply and interface panel with palisade fencing.

A Biodiversity Management and Enhancement Plan (BMEP) has been prepared for the Proposed Project and is included as Appendix 6-4 of this EIAR. This plan has been developed to offset the loss of habitats identified within the Proposed Wind Farm and further enhance the biodiversity of the Proposed Wind Farm and its environs, in line with biodiversity net gain (BNG) requirements identified in the Sligo County Development Plan 2024-2030.

The following BMEP objectives are proposed as part of the Proposed Project:

- **Objective A:** To enhance habitat condition of 36ha of degraded peatland habitats to favourable conservation status for upland blanket bog with affinities to Annex 1 habitat Blanket bog [7130]. For this to be an objective a baseline condition assessment in line with guidance was undertaken showing areas of poor conservation status, the measures, remedial actions and measurements of success proposed which will allow us to demonstrate favourable conservation status of the habitat in future, thereby creating a biodiversity net gain (BNG) by enhancing unfavourable habitats.
- **Objective B:** To safeguard existing peatland habitats within the 36ha management area which links up existing peatland habitats of the Ox Mountains Bogs SAC, thereby improving habitat connectivity.
- **Objective C:** To implement a grazing management regime which will enhance 36ha of overgrazed peatland habitats and safeguard existing peatland habitat with good conservation status, thereby protecting existing habitat and offsetting the loss of 0.5ha of marginal blanket bog habitat for the Proposed Project.
- **Objective D:** To restore the proposed 5.45ha of peat and spoil management areas over cutover bog and restore the peatland condition to an active peat forming system, thereby mitigating the loss of 3.6ha of cutover bog habitat for the Proposed Project.
- **Objective E:** To provide a management and monitoring plan to ensure the success of the proposed biodiversity enhancement and offsetting measures.

Tree felling will be required within and around Proposed Wind Farm infrastructure footprint to allow for the construction of 9 no. Proposed Turbine bases, access tracks, onsite 110kV substation, underground cabling, and the other ancillary infrastructure. 29.3ha of conifer plantation will be felled to accommodate the Proposed Wind Farm construction and operation. The commercial forestry felling activities required as part of the Proposed Wind Farm will be the subject of a Limited Felling Licence 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 licences for wind farm developments.

It is intended to connect the onsite 110kV substation to the existing Srananagh 220kV substation in the townland of Ballysumaghan, Co. Sligo via 110kV underground electrical cabling. The exact connection node is to be confirmed by EirGrid and subject to change at their request. The underground electrical cabling route is approx. 41.6km in length and located primarily within the public road corridor, with approx. 130m located within the Proposed Wind Farm. The Proposed Grid Connection Route will originate at the proposed onsite 110kV substation and run northeast for approx. 130m through a

proposed access track before turning continuing east and then north along the L6309 Local Road network for approx. 6.6km. The Proposed Grid Connection Route then follows the N59 National Road east for 26.2km before continuing southeast for 6.9km on the R290 Regional Road. The Proposed Grid Connection Route then joins the R284 Regional Road heading southeast for 2.8km on the L6234 Local Road before heading east onto the L5204 Local Road for 1.8km. From the L5204 the Proposed Grid Connection Route turns left and travels a final 400m into the existing Srananagh 220kV substation.

The Proposed Wind Farm is currently served by a number of existing tracks and public roads. During the construction and operation phase, the Proposed Wind Farm will be accessed via the existing site entrance from the L6309 Local Road, previously used for the Existing Wind Farm. This entrance will be widened to facilitate the delivery of the construction materials and turbine components. It is also proposed to utilise 1 no. existing access/egress location along the L2702 Local Road, construct 2 no. new access/egress locations along the L2702 Local Road and 1 no. new access/egress location along the L6309 Local Road. These access and egress entrances will be used throughout the construction, operation, and decommissioning phases of the Proposed Wind Farm to enable delivery of materials and turbine components (construction phase), maintenance and monitoring use (operational phase), and removal of Proposed Wind Farm infrastructure (decommissioning phase). Appropriate sightlines will be established for the safe access and egress of traffic during the operational phase, and security gates and compounds will be included at all site entrances.

It is intended that the port of entry for large turbine components will be Killybegs Port. Vehicles delivering large turbine components and other abnormal loads to the site will depart from Killybegs Port and travel east on the N56 towards Donegal, further south along the N15 towards Sligo before continuing south on N4 through Ballysadare and subsequently merging onto the N59 heading west towards Dromore West. Delivery vehicles will then head south on the L2702 Local Road before turning east towards the site entrance in the townland of Crowagh or Dunneill Mountain, along the L6309 Local Road. A turbine with the maximum blade length of 74 metres has been used in assessing the traffic impact of the Proposed Project.

Accommodation works will be required at various locations on the national and regional road network between the port of arrival in Killybegs and the Proposed Wind Farm. These will include temporary local road widening, overruns of roundabout islands, private lands, removal of private walls and vegetation and temporary relocation of some signs and street furniture.

The construction phase can be broken down into three main overlapping phases and will take approximately 18-24 months to complete: 1) civil engineering works – 12 - 24 months, 2) electrical works including grid connection works - 9-12 months, and 3) turbine erection and commissioning - 8 months.

As part of the Proposed Wind Farm 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 Proposed Turbines will operate automatically, responding by means of meteorological equipment and control systems to changes in wind speed and direction.

In addition to employment during the construction and operational phases of the Proposed Project and annual commercial rates that will be paid to the local authority by the Applicant, additional benefits will be provided to the local community through the provision of a Community Benefit Fund. The value of the Community Benefit Fund for the Proposed Project will be linked to the productivity of the Proposed Wind Farm and is calculated based on €2/MWh of the overall total generated by the Proposed Wind Farm.

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 Turbines may be decommissioned fully. All above ground turbine components will be decommissioned prioritising reuse, refurbishment and recycling of the whole turbine or the components within it, avoiding landfill when feasible and practical

to do so. Turbine and mast foundations would remain underground and would be covered with earth and allowed to revegetate. Leaving the foundations in-situ is considered a more environmentally prudent option, as to remove that volume of reinforced concrete from the ground could result in significant temporary environment nuisances such as noise, dust and/or vibration.

The underground electrical cabling connecting the turbines to the onsite substation and Existing Wind Farm control buildings and cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance. The Proposed Grid Connection Route and onsite substation will remain in place as it will be part of the Electricity Grid under the ownership and control of the ESB and EirGrid.

# 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 is located on the northwest slopes of the Ox Mountains, located approx. 4.5km south of the village of Dromore West, and approx. 3km southwest of the village of Templeboy in Co. Sligo at their nearest points.

Land-use within the Proposed Wind Farm is predominantly comprised of an existing renewable energy infrastructure, commercial forestry, peat/turf cutting, pastoral agricultural land, and low density residential areas. Land-use in the wider landscape comprises a mix of agriculture, low density housing, renewable energy and commercial forestry.

The construction of the Proposed Wind Farm will provide employment for technical consultants, contractors and maintenance staff. It is proposed to construct the Proposed Wind Farm and Proposed Grid Connection Route 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 The construction phase of the Proposed Project will last between 18-24 months. Many construction workers and materials will be sourced locally, thereby helping to sustain employment in the construction trade. This will have a short-term moderate positive impact.

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. There are no properties less than 720 metres from the Proposed Turbines (four times tip height). 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 1.5km (10 x rotor diameter = 1.5km). There are 40 no. properties located within 1.5km of the Proposed Turbines.

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 24.44% has been applied. Of the 40 no. properties modelled; it is predicted that:

- 3 no. properties are theoretically predicted to experience zero shadow flicker;
- 37 no. properties are theoretically predicted to experience some shadow flicker;
  - It should be noted that of these 37 no. properties, 21 no. properties are exceeding the 30-minute shadow flicker threshold.
  - Of the 21 no. properties, 4 no. are in derelict condition. As a result, no mitigation measures are required for these 4 no. derelict properties. Therefore, 17 no. properties will require mitigation measures. Please see Table 5-11 in Chapter 5 for mitigation details.
- The annual threshold of over 30 hours for shadow flicker (Guidelines (DoEHLG, 2006) is predicted to be exceeded at 2 no. properties once the regional sunshine average factor of 24.44% has been considered.
  - Of these 2 no. properties, 1 no. is in derelict condition, therefore 1 no. property requires mitigation. Please see Table 5-11 in Chapter 5 for mitigation 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 Route (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: Biodiversity assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Project may have on Biodiversity (excluding birds, assessed in Chapter 7 of the EIAR), and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

To inform the assessment, comprehensive desk studies, National Parks and Wildlife Service (NPWS) consultation, and a suite of field surveys have been carried out. Multi-disciplinary walkover surveys were undertaken between 2023 and 2026 across the Site. Habitat surveys of the Proposed Wind Farm covered the recognised optimum period for vegetation surveys and habitat mapping, i.e. April to September (Smith *et al.*, 2011). Dedicated species and habitat specific surveys including for bats, protected mammals and detailed botanical assessment surveys were carried out. 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 this EIAR.

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 multi-disciplinary 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 also conducted.

The habitats on the Proposed Wind Farm 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)[2]. Blanket bog and associated peatland habitats have also been assessed according to the guidance set out in Irish Wildlife Manual No. 79[3].

The Proposed Wind Farm is dominated by conifer plantation (WD4), upland blanket bog (PB2), cutover bog (PB4), and grassland habitats including wet grassland (GS4) and dry-humid acid grassland (GS3). The Proposed Wind Farm is drained by the Buncrowey River, Easky River, Letterunshin River, Dunneill River, Lugoon Stream and Doonbeakin River.

The Proposed Grid Connection Route crosses 31 EPA mapped watercourses including the Owenmore River, the Unshin River, the Ballysodare River, the Barnabrack River, the Dunmoran River, the Doonflin River, the Kilrusheighter River, the Lugdoon Stream and the Doonbeakin River. The Proposed Grid Connection Route will be emplaced primarily along the road carriageway therefore no instream works will occur, and no bridge/ culvert alterations are proposed. The Proposed Grid Connection Route also crosses through the Unshin River Special Area of Conservation (SAC).

Article 17 mapped habitats are present within the Site. These areas were identified early in the design stage of the Proposed Project and based on subsequent field surveys and detailed botanical assessments; the Proposed Wind Farm layout has been designed to avoid good quality Annex I habitats.

One Proposed Turbine (T5) is located within the Easky *Margaritifera* catchment of other extant populations.

A Biodiversity Management and Enhancement Plan (BMEP) is proposed as part of the Proposed Project. It is proposed to enhance an area of degraded peatland in the centre of the Proposed Wind Farm. This area has been strategically chosen to connect sections of the Ox Mountains Bogs SAC. The restoration efforts will focus on restoring the hydrological regime through drain blocking, control

[2] *A Guide to Habitats in Ireland' (Fossitt, 2000).*
[3] *https://www.npws.ie/sites/default/files/publications/pdf/IWM79_0.pdf*

erosion and encourage revegetation. The Proposed Enhancement Area will be safeguarded through structural protection, vegetation composition safeguarding and the implementation of a grazing regime. It is also proposed to restore the proposed peat and spoil management areas in the west of the Proposed Wind Farm by restoring the hydrological regime and reinstating peatland vegetation. The BMEP also provides details on a monitoring plan for the lifespan of the Proposed Wind Farm.

The construction of the Proposed Wind Farm will result predominantly in the loss of conifer forestry, cut over blanket bog and grassland habitats. There will also be a loss of degraded upland blanket bog habitat. The Proposed Grid Connection Route will not result in the significant permanent loss of any habitat. With the implementation of the Biodiversity Management and Enhancement Plan as described above, there will be a net gain in high quality upland blanket bog habitat.

Bat species composition and abundance was found during detailed bat surveys undertaken at the Proposed Wind Farm to be typical of the geographic location and nature of the Proposed Wind Farm. 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. 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 (2021)[4] 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.

No otter holts or couches were identified within the Proposed Wind Farm or along the Proposed Grid Connection Route. Signs (comprising spraint sites and latrines) were recorded on watercourses downstream of the Site. 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.

No residual significant effects on surface water quality, groundwater quality or the hydrological/ hydrogeological regime were identified during the assessment of the construction, operation, or decommissioning phases of the Proposed Project. A suite of detailed mitigation measures for protection of water quality has been included in Chapter 9: Hydrology and Hydrogeology of the EIAR. No potential for residual significant effects as a result of water quality deterioration to nearby designated sites, including the Unshin River SAC, Ballysadare Bay Sac and Ballysadare SPA and the Ox Mountains Bogs pNHA, Dunneill River pNHA, Easky River pNHA, Ballysadare Bay pNHA and Unshin River pNHA, 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, Ox Mountains Bogs SAC, Unshin River SAC, Ballysadare Bay SAC and Ballysadare SPA have been fully assessed within the Appropriate Assessment Screening and Natura Impact Statement (NIS) that accompanies this EIAR. This report 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.

Mitigation by avoidance has been applied as part of the Proposed Project and as such good quality, intact Annex I habitats have been avoided. It has been concluded that no significant residual effects as a result of the Proposed Project in relation to disturbance, displacement, mortality of faunal species, loss

[4] *NatureScot (2021). Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation.*

of faunal habitat or deterioration in water quality has been identified. 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 any geographical scale.

# 7 Ornithology

This chapter 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 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 Proposed Wind Farm and hinterland. 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 Proposed Wind Farm. The identification of Key Ornithological Receptors and the assessment of effects follow a precautionary approach.

The potential for effects on designated sites is fully described in the Natura Impact Statement that accompanies this application. The screening did not identify any potential pathway for adverse effects on any Special Protection Areas. The Natura Impact Statement concluded that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site. As such, it is concluded that the Proposed Project will not have an adverse impact on any European Sites designated for birds, either alone or in combination with other plans or projects.

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 Low (Percival, 2003) and Slight (EPA, 2022). The implementation of the prescribed mitigation and habitat enhancement measures will render any potential effects on ornithological receptors to no greater than Low (Percival, 2003) or Slight (EPA, 2022) significance. In conclusion, no significant effects as a result of the Proposed Project are foreseen on Key Ornithological Receptors.

# 8 Land, Soils and Geology

The Land, Soils and Geology assessment of the Proposed Project was carried out by Hydro-Environmental Services (HES).

The topography of the Proposed Wind Farm is mountainous with a ground elevation of between 110 and 390m OD. The highest elevations are on the southeast of the Proposed Wind Farm where the ground slopes steeply up towards the summit of the Ox Mountains. The upper reaches of the Dunneill River (referred to as the Owenduff River within the Site) flows through the Proposed Wind Farm. Ground slopes in the central and western part of the Proposed Wind Farm are gentle to moderate.

Land-cover on the Proposed Wind Farm primarily comprises peat bog, with coniferous forest to the north-west, east and south of the site. South of the Proposed Wind Farm comprises largely of transitional wood scrub, while land-use in the northern end of the Site comprises largely of pastoral agriculture and low-density residential.

Blanket peat (BktPt) is the dominant soil type along with areas of poorly draining mineral soil (AminPD) and poorly drained peaty soil (AminPDPT) being mapped along the northern extent of the Proposed Wind Farm. Alluvium is mapped along the Dunneill River (Owenduff River) and Crowagh River that flow through the Proposed Wind Farm on the east and west of the Site respectively.

Geological Survey Ireland (GSI) subsoils mapped along the Proposed Grid Connection Route comprises blanket peat near the Proposed Wind Farm with metamorphic tills and limestones (glacial) tills mapped along local roads and the N59 stretch of the route and followed by sandstone and shale tills along the R290 and R284 at the eastern end of the Proposed Grid Connection Route.

The TDR accommodation works are located in areas where mapped subsoils transition between blanket peat, Metamorphic tills and limestone tills. The BMEP lands are located on blanket peat with alluvium and Metamorphic tills mapped along the eastern fringe where the Dunneill River flows.

Site investigations and geotechnical assessments at the Site were extensive and consisted of 850 no. peat depth probes, historical trial pit logs (11 no.) and shell and auger borehole logs (11 no.) for the Existing Wind Farm and 19 no. trial pits with associated laboratory testing. The geological setting of the Site has been thoroughly assessed, and the geological setting is fully understood.

Bedrock was encountered at 4 no. of the trial pit locations which are all located along the Existing Wind Farm (Kingsmountain) access roads. Depth to bedrock ranged from 0m to 3.2m.

The southern and eastern portion of the Proposed Wind Farm is predominantly underlain by the Attymass Group (undifferentiated), which is comprised of undifferentiated schist & amphibolite. The southeastern corner is mapped to be underlain by the Meelick Member and Carrick O'Hara Formation, with the former described as schist, aluminous schist, pebble beds and the latter described as semi-pelitic, minor psammitic, schist. Due to the nature of the Proposed Grid Connection Route along the corridor of public roads, the underground cabling will likely have no interaction with the underlying bedrock geology.

Excavation of peat, subsoil and bedrock will be required for site levelling and for the installation of Proposed Project infrastructure. This will result in a permanent removal of peat, subsoil and possibly bedrock at most excavation locations. Excavated peat/spoil will be utilized to re-instate the proposed borrow pit locations, placed within dedicated peat/spoil management areas and will also be used for reinstatement and landscaping works around the Site.

The site investigations demonstrate that the bedrock proposed for extraction at the proposed borrow pit is strong, competent and fit for the purpose of rock extraction and follow-on permanent storage of peat.

The handling and management of peat and spoil will be undertaken in accordance with the Peat & Spoil Management Plan as set out in Chapter 4: Description of the Proposed Project of this EIAR. Storage and handling of hydrocarbons/chemicals will be carried out using best practice methods. Measures to prevent peat and subsoil erosion during excavation, reinstatement, and permanent placement in the borrow pit will be undertaken to prevent water quality impacts.

A Geotechnical and Peat Stability assessment undertaken for the Proposed Project shows that the Site has an acceptable margin of safety, is suitable for the Proposed Project and is considered to be of negligible to low risk for peat failure provided appropriate control measures, such as implementing and maintaining an appropriate drainage system, are implemented. The Proposed Grid Connection Route or TDR was not assessed for peat stability risk due to the lack of peat along the public road corridor and at the temporary works area associated with the TDR. The findings include mitigation/control measures for construction work in peat lands, all of which will be implemented in full to ensure that all works adhere to an acceptable standard of safety.

No significant effects on the land, soil, and geology of the Site will occur during construction, operation, or during decommissioning phases. No potential for direct physical affects to designated sites or geological heritage sites have been identified.

The assessment also concludes that there will be no cumulative effects on land soil and geology environment as a result of the Proposed Project as all effects will be direct and contained within the Site.

# 9 Hydrology and Hydrogeology

The Hydrology and Hydrogeology assessment of the Proposed Project was carried out by Hydro-Environmental Services (HES).

Regionally, the Site is located in the WFD Sligo Bay surface water catchment within Hydrometric Area No. 35 of the North Western River Basin District. The Proposed Wind Farm is located in 2 no. sub catchments; namely the Easky_SC_010 and the Dunmoran_SC_010. The Proposed Grid Connection Route passes through the Easky_SC_010 (1.6km), Dunmoran_SC_010, Owenmore[Sligo]_SC_040 and Owenmore[Sligo]_SC_030. The turbine delivery route (TDR) overrun area works located along local road L2702 and L6309 to the west and north of the Proposed Wind Farm, are located in the Easky_SC_010 and Dunmoran_SC_010 sub-catchments respectively. A TDR overrun area on the N59 near Ballysadare is located in the Owenmore(Sligo)_SC_040 sub-catchment.

The bedrock type at the Proposed Wind Farm is predominantly Precambrian Quartzites, Gneisses & Schists along with Dinantian Upper Impure Limestones and Dinantian Shales and Limestones. The Precambrian Quartzites, Gneisses & Schists are classified by the GSI as a Poor Aquifer (Pl). The Dinantian Limestones are both classified as Locally Important Aquifers (Lm & Ll).

The Proposed Wind Farm is located adjacent to the Ox Mountain Bogs SAC and pNHA. An area of the Ox Mountain Bog SAC is located within the Site, adjacent to the Existing Wind Farm, however, no new infrastructure is proposed in this area. Additionally, only the western portion of the Proposed Wind Farm (i.e. Proposed Turbines T1 to T6) is potentially located upgradient of the SAC with regard surface water runoff and groundwater flow. However, the Proposed Wind Farm infrastructure such as Proposed Turbines, hardstands and access tracks are setback more than 200m from the SAC boundary. On the eastern portion of the Proposed Wind Farm the upper reaches of the Dunneil River (Owenduff River) form a hydrological boundary between the Proposed Wind Farm and the SAC to the south. Even though the Proposed Wind Farm infrastructure is located upslope of the SAC topographically, there is no potential for surface water or groundwater flows towards the SAC due to the presence of the hydrological boundary offered by the Owenduff River.

Public water supply surface water abstractions in this area include Easky Lough which is located 1.9km to the south of the Site. Neither the Proposed Wind Farm nor Proposed Grid Connection Route are located within the Easky Lough surface water catchment. The Easky Lough water treatment plant is located immediately to the north of the Proposed Wind Farm 110kV substation location. The underground water mains from Easky Lough runs along the L6309 and L2702 local roads which is also the route of the Proposed Grid Connection Route. There are no mapped groundwater source protection zones that overlap with the Site.

Two methods will be employed to control drainage water within the Site during construction, thereby protecting downstream surface water quality and aquatic habitats. The first method involves ‘keeping clean water clean’ by avoiding disturbance to natural drainage features, minimising any works in or around artificial drainage features, and diverting clean surface water flow around excavations and construction areas. The second method involves collecting any drainage waters from works areas within the Site that might carry silt, to allow settlement and cleaning prior to its release. During the construction phase all runoff will be treated to a high quality prior to being released. A self-imposed 50m stream buffer was used during the design of the Proposed Wind Farm layout, thereby avoiding sensitive hydrological features.

There will be no risk of increased flooding down-stream as a result of the Site due to the proposed drainage measures. No recurring flood incidents within the Proposed Wind Farm were identified from OPW’s Past Flood Event Mapping. There are several recurring flood events mapped along the N59 which overlaps with the Proposed Grid Connection Route, but due to the temporary nature of the constructions works and the fact that the electrical cable will be placed underground, flood events will

not pose a risk to the Proposed Grid Connection Route. A site-specific Flood Risk Assessment was carried out for the Proposed Project.

During the operational phase drainage control measures will ensure that surface runoff from the developed areas of the Proposed Wind Farm will continue to be of good quality and will therefore not impact on the quality of down-stream rivers and streams. The present drainage regime of the Proposed Wind Farm will not be altered in any way. Impacts on water quality during the operational phase of the wind farm will be negligible to none.

In terms of potential cumulative hydrological impacts with other wind farm developments, the biggest risk is during the construction phase of the development as this is the phase when earthworks and excavations will be undertaken at the sites. The cumulative Water Study Area for the Proposed Wind Farm is the Easky River, Dunneill River and Lugdoon Stream catchments. The cumulative Water Study Area for the Proposed Grid Connection Route is Easky River, Dunneill River, Buncrowney River, Doonbeakin River, Lugdoon Stream, Kilrusheighter Stream, Doonflin Stream, Dunmoran River, Barnabrack Stream, Ballysodare River, Owenmore River and Unshin River. The fact that the Proposed Project is spread across these several catchments is very positive from a hydrological cumulative impact scenario as works are not concentrated in one catchment. Therefore, it can be concluded with high confidence that the Proposed Project is not likely to contribute to cumulative effects with regard other wind farm developments in the Water Study Area.

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. 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.

# 10 Air Quality

Chapter 10: Air Quality, 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 2024'* was published by the EPA in September 2025. 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: Air Quality.

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 Proposed Wind Farm 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 55,760 tonnes of Carbon Dioxide ($CO_2$) per annum, or 1,951,600 tonnes of carbon dioxide over the proposed 35 year lifecycle of the Proposed Wind Farm.

# 11 Climate

Chapter 11 identifies, describes, and assesses the potential significant direct and indirect effects on climate arising from the construction, 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.

A methodology for calculating carbon losses 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. The tool provides a transparent and easy to follow method for estimating the impacts of wind farms on the carbon dynamics of peatlands.

Given the nature of the Proposed Project as a new renewable energy development with repowering elements, the existing 23 no. turbines on the Dunneill (13 no. turbines) and Kingsmountain (10 no. turbines) Wind Farm sites will be removed and 17 no. Proposed Turbines will be constructed across both Existing Wind Farms and additional greenfield sites. To enhance sustainability, principles of Circular Economy theory will be implemented to minimise material waste, including the retention and reuse of turbine blades and associated materials where feasible. The removal of the 23 no. turbines from the Existing Wind Farm presents an opportunity to integrate principles of the circular economy, which emphasizes the reuse, recycling, and regeneration of materials to create sustainable system and transitions sites, such as the Proposed Wind Farm, into valuable assets both for the environment and surrounding communities. Prior to removal, all available options for blade management will be assessed in terms of circularity. Assessed options will include blade reuse, blade repurposing, blade recycling and energy from waste (EfW).

In addition to the Macauley Institute methodology, where possible, $CO_2$ emissions or losses associated with embodied carbon of materials used in the construction, operational and decommissioning phase of the Proposed Project have been identified using the Transport Infrastructure Ireland (TII) Carbon Tool (TII 2022)[5]. 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. Embodied carbon refers to the emissions associated with procuring, mining and harvesting raw materials, the transformation of those materials into construction products, transporting them to site, installation of these materials during a construction phase, and the subsequent replacement, removal, and disposal of these materials upon decommissioning.[6]

[5] *Transport Infrastructure Ireland Carbon Tool for Road and Light Rail Projects: User Guidance Document* https://www.tiipublications.ie/library/GE-ENV-01106-01.pdf
[6] *Irish green Building Council – What is embodied carbon?* <https://www.igbc.ie/what-is-embodied-carbon/>

The full life cycle and embodied carbon of the Proposed Turbines (17 no. turbines which constitute the Proposed Wind Farm) have been taken account of in the Macauley Institute model as a new wind energy development.

The emissions associated with the embodied carbon, along with the removal of 23 no. turbines which constitute the Existing Wind Farm and Proposed Project construction phase transport movements, of the remaining features of the site are considered using the Transport Infrastructure Ireland (TII) Carbon Tool (TII 2022)[7]. 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 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 248,931 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 102MW 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 55,760 $tCO_2e$ per annum, or 1,951,600 $tCO_2e$ 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 in approximately 53.6 months (4.5 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.

[7] *Transport Infrastructure Ireland Carbon Tool for Road and Light Rail Projects: User Guidance Document* https://www.tiipublications.ie/library/GE-ENV-01106-01.pdf

# 12 Noise and Vibration

A noise and vibration assessment was undertaken by TNEI Ireland to determine the likely significant effects from the construction, operational and decommissioning phases of the Proposed Wind Farm, at nearby noise sensitive receptors (residential properties).

A comprehensive background noise survey was undertaken at eight noise monitoring locations. The data was analysed in conjunction with onsite measured wind speed data.

Predicted construction noise levels at the nearest noise sensitive receptors during all phases of construction are below the threshold values within BS 5228 and predicted levels would be short term. Construction vibration would also likely be at low levels and would be short term. Therefore, the effect from construction noise and vibration is deemed to be not significant. Activities related to decommissioning would use similar plant to that used for construction activities and would occur at the same locations, as such noise level output during the decommissioning phase is expected to be no higher than the construction phase.

The operational noise assessment was undertaken in three stages, which involved setting the Total DoEHLG 2006 Guidelines Noise Limits (which are limits for noise from all wind farms in the area) at the nearest noise sensitive receptors (NSRs), predicting the likely effects (undertaking cumulative noise predictions) and finally setting Site-Specific Noise Limits for the operation of the Proposed Wind Farm on its own. The Total DoEHLG 2006 Guidelines Noise Limits have been derived in relation to background noise levels and other applicable criteria in accordance with the DoEHLG 2006 Guidelines.

Predicted cumulative operational noise levels indicate that for noise sensitive receptors neighbouring the Proposed Wind Farm, cumulative wind turbine noise (which considers noise predictions from all nearby operational and permitted wind farms and the Proposed Wind Farm) would meet the Total DoEHLG 2006 Guidelines Noise Limits at all Noise Assessment Locations.

The Total DoEHLG 2006 Guidelines Noise Limit is applicable to all operational and permitted wind farms in the area. Therefore, Site-Specific Noise Limits have also been derived to control the specific noise from the Proposed Wind Farm. In accordance with the guidance in IOA GPG, the Site-Specific Noise Limits have been derived with due regard to cumulative noise by accounting for the proportion of the Total DoEHLG 2006 Guidelines Noise Limit which is potentially being used by other nearby developments. The Site-Specific Noise Limits have been derived in accordance with the IOA GPG.

Predictions of Proposed Wind Farm turbine noise have been made in accordance with good practice using three candidate wind turbines, a tip height range of 176.9 m - 180 m, a 133 - 150 m rotor diameter range and a hub height range of 105 - 110 m. Predicted operational noise levels from the Proposed Wind Farm indicate that for noise sensitive receptors neighbouring the Proposed Wind Farm, wind turbine noise from the Proposed Wind Farm would meet the Site-Specific Noise Limits at all Noise Assessment Locations (NAL) and are therefore deemed to be not significant.

The use of Site-Specific Noise Limits would ensure that the Proposed Wind Farm could operate concurrently with other operational wind farm developments in the area and would also ensure that the Proposed Wind Farm's individual contribution could be measured and enforced if required.

The three candidate wind turbine models were chosen in order to allow a representative assessment of the noise impacts. Should the Proposed Wind Farm receive planning permission, the final choice of wind turbine would be subject to a competitive tendering process. The final choice of wind turbine will be required to meet the noise limits determined and contained within any condition imposed.

# 13 Landscape and Visual

The Proposed Project is an appropriately designed development, sited in a modified working landscape of low population density within upland terrain of cutover peatbog, commercial forestry and agricultural fields, deemed capable of accommodating wind energy development. The Proposed Turbines are viewed within a landscape where wind energy is well established and has been acceptably accommodated in the landscape of the site and turbines will exist in both an "Existing" and "Do-Nothing" Scenario until the Existing Wind Farm turbines are decommissioned, and the greenfield sections of the Proposed Wind Farm (located outside the footprint of the Existing Wind Farm) would be left as is with no changes made to the current land use practices. Where possible, the Proposed Project makes use of the Existing Wind Farm infrastructure, thereby reducing the requirement for new internal site access tracks or hardstand areas and reducing the extent of direct landscape effects on the site.

The Proposed Turbines are sited strategically within a landscape capable of accommodating a wind energy development of this scale. The Proposed Wind Farm is an area surrounded by substantial topographical features which both eliminate visibility of the Proposed Turbines from a large portion of the Landscape and Visual Impact Assessment (LVIA) Study Area and provide a sense of scale that causes the Proposed Turbines to be perceived as congruous and appropriately scaled in the landscape type within which they are viewed.

In terms of local visual amenity, the Proposed Project exceeds the recommended 500m setback from residences set out in the DoELHG 2006 Guidelines and adheres to the prescribed 4-times-tip-height (720m) setback distance for residential visual amenity in the Draft 2019 Guidelines. Local residential receptors in close proximity to the site (within 3km) are concentrated to the north and northwest of the Proposed Turbines and were assessed using photomontage viewpoint impact assessment. The visual effects were deemed "Slight" owing to the setback distance and good visual aesthetics of turbines within a landscape already established with wind energy.

The Proposed Turbines are sited at lower elevations of the steep mountainside within an appropriate spatial extent for the broad landscape and with regular staggered spacing in a mix of random and clustered layout of slightly uneven height profile that follows the rugged topography, thereby aligning with best practice siting and design for wind energy developments in Mountain Moorland landscapes in the DoEHLG 2006 Guidelines and Draft 2019 Guidelines.

This LVIA assessed the likely significant effects of the Proposed Project on key sensitive landscape and visual receptors. Effects on the landscape of the Proposed Wind Farm will be "Moderate" owing to the direct material alteration within a site itself that is degraded and already used in part for established wind energy. Landscape and visual effects on the ridgeline designated in the Sligo County Development Plan 2024-2030 as a "Visually Vulnerable Area" will be "Not Significant" given the context of wind turbines becoming a more familiar and accepted component of the Irish landscape over time, and the good aesthetics of siting turbines on ridges in Mountain Moorland landscapes according to best practice siting and design of wind energy developments. No landscape effects will be significant in the context of EIA.

15 no. viewpoints covering a good geographical spread of the LVIA Study Area, showing that residual visual effects range from "Not Significant" to "Moderate" with most visual effects being "Slight" or "Not Significant." No visual effects as shown in the photomontages will be significant in the context of EIA.

Visual effects on designated scenic route SR-58 and the Sligo Way waymarked walking trail which passes through the site will be "Slight" and "Moderate" respectively. The majority of wind farms in Ireland have open access during the operational period and are extensively used for amenity purposes in particular walking and cycling. Users of the scenic routes are by definition moving through the landscape, either walking, driving or cycling. There is sufficient evidence that the amenity of recreational routes is not materially affected by the presence of wind turbines for the small portion of

what is, overall, an extensive network of scenic routes and walking trails which pass briefly through wind farms throughout the country.

There will be no significant cumulative effects between the Proposed Project and other wind energy developments within 25km of the Proposed Wind Farm, owing to the lack of visual connection and sparse nature of developments. There will be no significant visual effects on the Sligo Passage Tomb Landscape which falls within the northeast edge of the LVIA Study Area.

Overall, there will be no significant landscape or visual effects as a result of the Proposed Project. 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, and location of turbines as well as potential disruption to key scenic sensitivities, rather than simply on whether turbines are visible or not from a particular vantage point. The outcome of the LVIA, with regards to the EPA (2022) definition of significance, is calibrated in the overall context of LVIA of wind energy developments in Ireland as well as what is acceptable in the context of emerging baseline trends and the acceptability of wind turbines within views as a result of national policy. The Proposed Project is therefore considered acceptable in this context and is in alignment with emerging baseline trends.

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# Cultural Heritage

An assessment of the potential effects of the Proposed Project on the Cultural Heritage resource was carried out by Tobar Archaeological Services. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on desktop research, field survey, GIS based mapping, zone of theoretical visibility (ZTV), and was also assisted by representative photomontages.

Where potential effects have been identified, such as to potential sub-surface archaeology appropriate mitigation measures have been recommended in order to minimise any such effects. Proposed mitigation includes pre-development testing, archaeological monitoring of construction stage ground works and along the Proposed Grid Connection Route through Zones of Notification for Recorded Monuments, and during any further geotechnical site investigations. No potential direct effects to National Monuments, recorded monuments, Protected Structures or NIAH structures are identified.

Potential indirect effects on the setting of any UNESCO World Heritage Sites and those on a Tentative List within 25km, National Monuments within 15km, recorded monuments within 5km and RPS/NIAH structures within 5km were included in order to assess potential effects on setting in the wider landscape. The ZTV demonstrates theoretical visibility of the Proposed Turbines from some cultural heritage assets within 5km. Both the distance to the nearest turbine and the number of turbines visible from each cultural heritage asset were used to arrive a level of potential effect on setting. Potential effects on setting are based on the precautionary scenario in that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model and in reality, the potential effect is likely to be less. Furthermore, many of these monuments may not be readily discernible in the landscape which further ameliorates effects on setting.

An assessment of potential cumulative effects was also undertaken taking into consideration other extant planning applications and existing and proposed wind farms within 25km. While some potential cumulative visual effects to the wider setting of cultural heritage assets is possible when considered with the existing, permitted and proposed wind farms, no significant cumulative impacts have been identified and no cumulative effects to the immediate setting of cultural heritage assets will occur.

# 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 by Alan Lipscombe Traffic and Transport Consultants. 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

It is proposed that the Turbine Delivery Route (TDR) will be via the Port of Killybegs in County Donegal.

The route exits Killybegs Port and travel east on the N56 towards Donegal, further south along the N15 towards Sligo before continuing south on N4 through Ballysadare and subsequently merging onto the N59 heading west towards Dromore West. Delivery vehicles will then head south on the L2702 before turning east towards the site entrance in the townland of Crowagh or Dunneill Mountain, along the L6309. The total length of the turbine delivery route from Killybegs Port is approximately 134km.

All construction traffic, including the removal of Existing Wind Farm turbines, delivery of the abnormally sized loads, the delivery of all general construction traffic, all staff construction traffic, and for the purpose of all maintenance traffic during the operational phase, will be provided via the following site access junctions;

**Site Access Junction A** – This proposed new junction off the L6309, will provide access for all traffic generated during the construction and operational phases to Proposed Turbines T06 and T07.

**Site Access Junction B** – The proposed new junction off the L2702, will provide access for all traffic generated during the construction and operational phases to Proposed Turbines T02 and T04.

**Site Access Junctions C-** The proposed improved existing junction off the L2702, will provide access for all traffic generated during the construction and operational phases to Proposed Turbines T01, T03 and T05.

**Site Access Junction D -** The proposed improved existing junction will provide access for all traffic generated during the construction and operational phases within the site of the Existing Wind Farm, including Proposed Turbines T08 to T17.

**Site Access Junction E -** The proposed new junction off the L2702, will provide access for all traffic generated during the construction and operational phases to the proposed onsite substation.

### Vehicle types and network geometry

The types of vehicles that will be required to negotiate the local network will be up to 83.9 metres long and will carry a blade 74m metres in length.

An assessment of the geometric requirements of the delivery vehicles was undertaken on the delivery route (Appendix 15-3). 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 17 days when concrete is delivered to the Proposed Wind Farm for the construction of the turbine foundations via the identified construction delivery routes, an additional 430 Passenger Car Units (PCUs) will travel to and from the Proposed Wind Farm. For deliveries made on the TDR, it is forecast that the increase in traffic volumes on these days will range from between +3.3% to 4.2% on the N56 west of Donegal to the N15 south of Bundoran, down to a +1.5% increase on the dual section of the N4 south of Sligo. Approaching the Proposed Wind Farm from the east on the N59 (Link 5) it is forecast that traffic volumes will increase by +9.2%, increasing to +46.0% as the route heads south onto the L2702 and background traffic volumes on the local road network reduce. On the L6309 leading to the Site Access A and D, and on the L2702 leading to the proposed Site Accesses C, B and E, where background traffic volumes are very low (< 100 PCUs per day) traffic flows on these days are forecast to increase by a factor of between 5 to 6. For trips approaching from the west on the N59 is forecast that traffic volumes will increase by +8.2% on these 17 days. It is forecast that this will have a temporary, slight, negative effect, which is Not Significant, on existing traffic on the delivery route and at the existing N59 / L2702 junction.

For 410 days when first phase general construction takes place on the Proposed Wind Farm at the same time Proposed Grid Connection Route construction commences, an additional 446 PCUs will travel to/from the Proposed Wind Farm. For deliveries made on the TDR, it is forecast that the increase in traffic volumes on these days will range from between +3.4% to 4.4% on the N56 west of Donegal to the N15 south of Bundoran, down to a +1.6% increase on the dual section of the N4 south of Sligo. Approaching the Proposed Wind Farm from the east on the N59 it is forecast that traffic volumes will increase by +9.5%, increasing to +47.7% as the route heads south onto the L2702. On the L6309 leading to Site Accesses A and D, and on the L2702 leading to Site Accesses B, C and E, traffic flows on these days are forecast to increase by a factor of between 5 to 6. For trips approaching from the west on the N59 (Link 9) is forecast that traffic volumes will increase by +8.5% on these 205 days). It is forecast that this will have a temporary, slight, negative effect, which is Not Significant, on existing traffic on the delivery route, the existing N59 / L2702 junction and on the local road network leading to the Proposed Wind Farm.

On these 45 days when the abnormally sized loads will be delivered to the site at the same time as the construction of the Proposed Grid Connection Route continues, an additional 193 PCUs will travel to/from the Proposed Wind Farm. For deliveries made on the TDR, it is forecast that the increase in traffic volumes on these days will range from between +1.5% to 1.9% on the N56 west of Donegal to the N15 south of Bundoran, down to a +0.7% increase on the dual section of the N4 south of Sligo. Approaching the site from the east on the N59 it is forecast that traffic volumes will increase by +4.1%, increasing to +20.6% as the route heads south onto the L2702 (Link 6). On the L6309 leading to Site Accesses A and D, and on the L2702 leading to Site Accesses B, C and E, traffic flows on these 45 days are forecast to increase by a factor of between 2 to 3. It is forecast that this will have a temporary, slight, negative effect, which is Not Significant, on existing traffic on the delivery route, the existing N59 / L2702 junction and on the local road network leading to the Proposed Wind Farm.

For 20 days when the decommissioned turbines will be removed from the Proposed Wind Farm at the same time as the construction of the Proposed Grid Connection Route continues, an additional 188 PCUs will travel to/from the Proposed Wind Farm. For deliveries made on the TDR, it is forecast that the increase in traffic volumes on these days will range from between +1.4% to 1.8% on the N56 west of Donegal to the N15 south of Bundoran (Links 1 to 3), down to a +0.7% increase on the dual section of the N4 south of Sligo. Approaching the Proposed Wind Farm from the east on the N59 (Link 5) it is

forecast that traffic volumes will increase by +4.0%, increasing to +20.1% as the route heads south onto the L2702. On the L6309 (Link 7) leading to Site Accesses A and D, and on the L2702 leading to Site Accesses B, C and E, traffic flows on these days are forecast to increase by a factor of between 2 to 3. For trips approaching from the west on the N59 is forecast that traffic volumes will increase by +8.6% on these 20 days. It is forecast that this will have a temporary, slight, negative effect, which is Not Significant, on existing traffic on the delivery route, the existing N59 / L2702 junction and on the local road network leading to the Proposed Wind Farm.

For 17 days when the smaller turbine components will be delivered to the Proposed Wind Farm using standard sized HGVs at the same time as the construction of the Proposed Grid Connection Route continues, an additional 152 PCUs will travel to/from the Proposed Wind Farm. For deliveries made on the TDR, it is forecast that the increase in traffic volumes on these days will range from between +1.2% to 1.5% on the N56 west of Donegal to the N15 south of Bundoran, down to a +0.5% increase on the dual section of the N4 south of Sligo. Approaching the Proposed Wind Farm from the east on the N59 it is forecast that traffic volumes will increase by +3.2%, increasing to +16.3% as the route heads south onto the L2702. On the L6309 leading to Site Accesses A and D, and on the L2702 leading to Site Accesses B, C and E, traffic flows on these days are forecast to increase by a factor of approximately 2. It is forecast that this will have a temporary, slight, negative effect, which is Not Significant, on existing traffic on the delivery route, the existing N59 / L2702 junction and on the local road network leading to the Proposed Wind Farm.

With respect to the traffic volumes that will be generated during the construction of the Proposed Grid Connection Route, it is estimated that there will be approximately 15 daily return trips made by trucks transporting materials, and 8 return trips made by a car to transport construction staff, to and from the site. In addition, temporary short-term diversions are required for local traffic, as discussed in Section 15.1.7 of this EIAR. The traffic diverted off sections of the road network during the construction of the Proposed Grid Connection Route will, where possible, be diverted onto roads of a similar or higher standard, and in general the volumes of traffic on the roads impact are relatively low. Therefore, by its nature the effects of these additional trips and diversions on the network will be transient, will be temporary and will be slight.

During the operational phase, the impacts on the surrounding local highway network will be negligible given that there will only be an average of approximately 1 to 2 trips made by site staff by car or light goods vehicle per day with no regular visits required for the Proposed Grid Connection Route.

## 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 Telecommunications Impact Assessment (Appendix 15-6) was carried out by Ai Bridges. These appendices detail the field and desktop surveys undertaken to determine if telecommunications network infrastructure, including those highlighted by Iarnród Eireann, would be impacted by the proposed turbines. The Telecommunications Impact Assessment concludes that the Proposed Turbines will have no impacts on telecommunications.

There are no airports or aerodromes located within or adjacent to the Site. The nearest operational airport is Sligo Airport located approx. 15.4km northeast of the Proposed Wind Farm at its closest point (T13) and the nearest operational airfield is Sligo Model Flying Club in Annaghmore which is located approx. 15.6km east of the Proposed Wind Farm at its closest point (T16). The closest international airport is Knock Airport which is located approx. 30km south of the Proposed Wind Farm and its closest point (T5). All airports listed are outside the range at which such issues would be expected, furthermore, the Irish Aviation Authority noted no issues with the Proposed Project. An Aviation Review (Appendix 15-7) was carried out by Ai Bridges, which concludes that the Proposed Project will have no impact on aviation operations.

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 Route and therefore no mitigation is required. The potential for electromagnetic interference from proposed turbines may only occur during the operational phase of the Proposed Project. As per the Telecommunications Impact Assessment carried out by Ai Bridges, detailed above, no impacts were identified to telecommunications from the Proposed Project. While no mitigation measures are required, a standard Protocol Document has been prepared by 2RN for the Proposed Project which will be signed by the Developer prior to construction.

## 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.

The Proposed Project has been designed to avoid identified services and utilities where insofar as possible. Prior to commencement of construction detailed site investigations will be carried out to confirm design assumptions and undertake additional surveys to identify any new services and utilities and ensure they will not be impacted by the Proposed Project. The construction of the Proposed Grid Connection Route would also be subject to a Road Opening Licence (ROL). The timing of these works would therefore be controlled by the ROL process with the relevant Local Authority.

There are no 110kV or 38kV overhead lines (OHL) within or adjacent to the Proposed Wind Farm. The Proposed Grid Connection Route passes under 4 no. 110kV OHLs in the townlands of Ballysadare, Collooney and Ballysumaghan, Co. Sligo and 1 no. 220kV OHL in the townland of Ballysumaghan, Co. Sligo. The Proposed Project will have no interactions with any OHL.

There is an existing 20kV underground cable within the Proposed Wind Farm and Proposed Grid Connection Route, however this is a component of the Existing Wind Farm. The Existing Grid Connection to Cunghill 110kV substation will remain in place and no upgrade works are required or proposed along the Existing Grid Connection underground cable connection. The Proposed Grid Connection Route will cross underneath an existing 38kV underground electricity cable on the R290 regional road in the townlands of Collooney and Rathrippon, Co. Sligo. The Proposed Grid Connection Route has been designed to avoid exisiting underground electricity cables.

Gas Networks Ireland supply MKO with their latest infrastructure data on a quarterly basis. The latest data share illustrating all GNI infrastructure was provided to MKO in March 2026. The data indicates that there is no GNI infrastructure is located within or adjacent to the Site

The Proposed Grid Connection Route will cross under the Irish Rail Sligo-Dublin rail line at 1 no. location approx. 900 metres north of Collooney Train Station, Co. Sligo. The Proposed Grid Connection Route will be entirely in the public road corridor so therefore there will be no interaction with the Irish Rail network.

Public water supply surface water abstractions in this area include Easky Lough which is located 1.9km to the south of the Site. Neither the Proposed Wind Farm nor Proposed Grid Connection Route are located within the Easky Lough surface water catchment. The Easky Lough water treatment plant is located immediately to the north of the Proposed Wind Farm 110kV substation location. There is also existing Uisce Éireann infrastructure elements within the public road corridor within the Proposed Grid Connection Route. The Proposed Project infrastructure has been designed to avoid any underground water mains and impacts on water or sewage networks.

There are no EPA-licensed or local authority-authorised waste facilities or activities located within the Site. The closest, authorised municipal waste facility, Panda Sligo, is located approx. 21.3km northeast of the Proposed Wind Farm at its closest point (i.e., T17) in the townland of Finisklin, Co. Sligo. A Resource and Waste Management Plan (RWMP) has been prepared and forms part of the CEMP in Appendix 4-5 of the EIAR. The RWMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Project. Disposal of waste will be a last resort.

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 short-term, negative and slight, which is not significant, for the 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 102MW which has potential to produce 312,732 MWh of electricity. This would be sufficient to supply approximately 74,460 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: Major Accidents and Natural Disasters of the EIAR describes the likely significant effects on the environment arising from the vulnerability 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 impact the Proposed Project and consequently have potential impacts on the environment. This assessment also identifies the potential of the Proposed Project to impact major accidents or natural disasters. 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 and soil, water, air quality, climate, material assets (including traffic and transport), cultural heritage and the landscape.

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being 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 Chapter.

The scenarios with the highest risk scores for the occurrence of a major accident and/or disaster during the construction phase were identified as 'Fire/Explosion', 'Peat Stability', and 'Contamination'. During the operational phase, 'Fire/Explosion' was identified as having the highest risk score, while 'Peat Stability' and 'Contamination' were identified as the highest-risk scenarios during the decommissioning phase. In addition, the next highest scores were for 'Severe Weather' and 'Traffic Incident' 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 'Very Unlikely' in accordance with 'A Framework for Major Emergency Management – A Guide to Regional Risk Assessment' (DoHLGH, 2024).[8]

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

[8] *DoHLGH (2024) A Framework for Major Emergency Management – A Guide to Regional Risk Assessment. Available at https://assets.gov.ie/static/documents/Guide_to_Regional_Risk_Assessment_September_2024.pdf*

# 17 Interaction of the Foregoing

Chapter 17: Interaction of the Foregoing of this EIAR identifies the potential significant environmental effects that may occur in terms of Population & Human Health, Biodiversity, Ornithology, Land, Soils & Geology, Hydrology and Hydrogeology, 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.

# 18 Schedule of Mitigation and Monitoring Proposals

Chapter 18: Schedule of Mitigation and Monitoring Proposals provides an easy-to-audit list of all mitigation and monitoring measures relating to the pre-commencement, construction, operational and decommissioning phases of the Proposed Project as set out in the relevant chapters of the EIAR.

All mitigation which will be implemented during the various phases of the Proposed Project are presented in Table 18-1. All monitoring measures which will be implemented during the pre-commencement, construction, operational and decommissioning phases of the Proposed Project are outlined in Table 18-2.

The tabular format in which the information is presented can be further expanded upon during each Proposed Project phase to provide a reporting template for site compliance audits.

The proposals for site inspections and environmental audits are set out in the Construction and Environmental Management Plan (CEMP) which is included as Appendix 4-5 of the EIAR. It is intended that the CEMP will be updated where required prior to the commencement of construction to include all mitigation and monitoring measures, planning conditions and/or alternative monitoring and mitigation measures should they emerge during the course of the planning process and would be submitted to the Planning Authority for written approval prior to the commencement of development.