

Non-Technical Summary

Slieveacurry Renewable
Energy Development, Co.
Clare

Environmental Impact Assessment
Report (EIAR)





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NON-TECHNICAL SUMMARY

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Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Slieveacurry Ltd (the Applicant), who intends to apply to An Coimisiún Pleanála (ACP) for planning permission to construct a renewable energy development comprising 9 no. turbines and all associated infrastructure in the townland of Glendine North and adjacent townlands, Co. Clare, a permanent extension to the existing 110kV Slieveacallan substation at and associated works, including underground 33kV internal cabling to connect to the national grid in the townland of Knockalassa, Co. Clare. For the purposes of this EIAR:

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- 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: Description of the Proposed Project.
- Where the 'Site' is referred to, this relates to the primary study area for the EIAR, as delineated by the EIAR Site Boundary in green as shown on Figure 1-1 of the EIAR and encompasses an area of approximately 1,260 hectares.
- Where the 'Proposed Grid Connection Site' is referred to, this refers to the part of the Site containing the proposed extension to the existing 110kV Slieveacallan substation at and the 33kV underground cabling connection from the wind farm road to the proposed substation extension.
- Where the 'Proposed Wind Farm Site' is referred to, this refers to the portion of the Site containing the proposed turbines and ancillary infrastructure, excluding the Proposed Grid Connection Site.
 - The 'Proposed Turbines' refers to the 9 no. turbines associated with the Proposed Wind Farm Site as outlined above.
- Where the 'Proposed Enhancement Site' is referred to, this refers to the portion of the Site containing the proposed biodiversity and ornithology enhancement and management areas, excluding the Proposed Wind Farm Site and Proposed Grid Connection 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.

Measures to Address Reasons for Refusal

Slieveacurry Ltd. submitted an application in November 2021 for planning permission for an 8 no. turbine renewable energy development and associated works in the townland of Slieveacurry and adjacent townlands, in Co. Clare (Planning Ref. 21/1226). Following refusal by Clare County Council,

the decision was appealed to ACP in February 2022 (ABP-312728-22). This resulted in a refusal on three grounds, which have been carefully considered and addressed in the current application.

Brief Description of the Proposed Project

The Proposed Project will comprise the construction of 9 No. wind turbines with an overall turbine total tip height of 175m and all associated works, underground cabling (33kV), and all associated works and apparatus. The full description of the Proposed Project is detailed in Chapter 4 of this EIAR.

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

- i. 9 No. wind turbines with an overall ground-to-blade tip height of 175 metres; rotor diameter of 150 metres; and hub height of 100 metres, and a meteorological mast with a height of 30 metres, and subsequent decommissioning of the wind turbines and meteorological mast, following a thirty five-year operational period from the date of full commissioning of the wind turbines;*
- ii. Associated wind turbine and meteorological mast foundations and hardstanding areas;*
- iii. An extension to the existing 110kV substation compound in the townland of Knockalassa (Including the provision of a new control building (floor area of 112.5 sq.m) with welfare facilities, all associated electrical plant and apparatus for an additional 110kV bay, security fencing, underground cabling, underground wastewater holding tank, site drainage and all ancillary works);*
- iv. Underground electrical (33kV) and communications cabling connecting the proposed wind turbines and meteorological mast to the 110kV substation extension via proposed and existing private access road/tracks and the R460 regional road;*
- v. Temporary accommodation works to facilitate the delivery of turbine components and other abnormal sized loads on the L6230, L1076, L2118 and L1074 local roads;*
- vi. Upgrade and widening works to the L6230 local road and access junction off the L6230 local road;*
- vii. Upgrade of existing tracks/roads and provision of new site access roads and hardstanding areas;*
- viii. A borrow pit;*
- ix. 2 no. temporary construction compounds (including site offices and welfare facilities, with a combined floor area of 202.5 sq.m);*
- x. Peat and Spoil Management;*
- xi. Site Drainage;*
- xii. Tree felling and vegetation removal;*
- xiii. Biodiversity Management and Enhancement Plan measures (including hedgerow planting, peatland, marsh fritillary and hen harrier habitat enhancement areas);*
- xiv. Operational stage site signage; and*
- xv. All associated site development works and apparatus.*

The applicant is seeking a ten-year permission and an operational period of thirty-five-years for the wind turbines, meteorological mast and site signage from the date of full commissioning of the wind turbines. Permanent planning permission is being sought for all other works.

The Applicant

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

By the end of 2025, Enerco associated companies had over 975 Megawatts (MW) of wind generating capacity in commercial operation or in construction, with a further c.400MW of projects at various stages in its portfolio to assist in meeting Ireland's renewable energy targets

Need for the Proposed Project

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

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

Economic Benefits

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

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

It is estimated that the Proposed Project has the potential to create up to 70 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 of this EIAR, Population and Human Health.

Should the Proposed Project receive planning permission, there are substantial opportunities available for the local area in the form of Community Benefit Funds. Based on the current proposal, a Community Benefit Fund in the region of €5.75 million will be made available over the lifetime of the project. The value of this fund will be directly proportional to the level of installed MWs at the site and will support and facilitate projects and initiatives including youth, sport and community facilities, schools, educational and training initiatives, and wider amenity, heritage, and environmental projects.

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. Considerations of Reasonable Alternatives
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 Natura Impact Statement 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 presents the relevant policies and objectives which have been put in place at the international, national, regional and local level in relation to planning, renewable energy and climate change. It also summarises the scoping, pre-application and community consultations undertaken and sets out the cumulative impact assessment process. This chapter should be read in conjunction with the Planning Report which accompanies the planning application.

The Proposed Project is being brought forward in response to international, national, regional and local policy regarding Ireland's transition to a carbon-neutral and climate-resilient society, a key objective of the Revised National Planning Framework (NPF). The Southern Region is allocated a target of installing an additional 978MW of onshore wind energy by 2030. The Regional Spatial & Economic Strategy seeks to achieve balanced regional development and the implementation the NPF. Wind Energy development is supported at appropriate locations along with its associated grid infrastructure through policy objectives RPO 95, 96, 99 and 100.

The need to decarbonise the economy and reduce emissions has always been imperative, however in recent years the urgency involved has become clearer to all stakeholders. The latest Climate Action Plan 2025 sets out the detail for taking action to deliver the decarbonisation required under the carbon budgets and sectorial emissions ceilings. Central to this are the measures set out to increase the proportion of renewable electricity to up to 80% by 2030 and a target of 9GW from onshore wind.

The Climate Action and Low Carbon Development Act 2015 (as amended) ('the Climate Act') commits Ireland to a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). To ensure that climate targets are met, Section 15 of the Climate Act requires all public bodies to exercise their functions in a manner consistent with, in so far as practicable, the national climate objective and the latest climate policy. Renewable energy projects such as the Proposed Project are key to helping Ireland achieve these legally binding climate targets.

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 requires the rapid expansion of renewable energy, making this a matter of strategic economic and social importance. National interest is identified as a matter of regard during planning determination in Section 143(1b) of the Planning and Development Act 2000 (as amended) (‘the Planning Act’). 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.

The application for the Proposed Project is covered by the provisions of the Renewable Energy Directive III (Directive 2023/2413), and the planning application is subject to a completeness check under section 37JA of the Planning Act by the European Union (Planning and Development) (Renewable Energy) Regulations 2025.

Local Planning Policy

The Clare County Development Plan 2023-2029 (CCDP) came into effect on April 20th 2023 and provides overall guidance for the proper planning and development of County Clare through the use of supporting policies and objectives. The CCDP supports the delivery of renewable energy in line with national targets, in particular through policy objective CDP 8.12 and 11.47.

The Clare Climate Action Plan 2024-2029 is also supportive of renewable energy in line with national targets through policy action BE2.1.

Local Authority Renewable Energy Strategy

The Local Authority Renewable Energy Strategy 2023-2029 (LARES) was adopted as part of the CCDP 2023 – 2029, includes the following vision of the LARES:

“A County Clare that is the national leader in renewable energy generation which supports energy efficiency and conservation, and which achieves balanced social and economic development throughout the County and assists in achieving national climate change mitigation targets.”

With regard to wind energy, a target of 550MW has been identified. It should be noted, however, that this target is not a ‘cap’ and will not limit the potential for greater generation of renewable energy if exceeded.

Objective RES 3.1 (Renewable Energy Targets): *To facilitate the achievement of (or to exceed where possible) the renewable energy targets set out in Table 3.2 by 2030, ensuring that County Clare is the national leader in sustainable renewable energy generation, supporting energy efficiency, security and conservation, achieving balanced social, environmental and economic development throughout the County and assisting in the achievement of Ireland’s Green Energy target.*

Wind Energy Strategy

The Wind Energy Strategy (WES) for County Clare is incorporated into the CCDP as Volume 6. The WES has been developed as a planning framework to support the implementation of wind developments in the county.

The WES highlights 11 Strategic objectives that outline the overall rationale behind the strategy, with the aim of contributing to national legally binding targets while also capitalising on those opportunities associated with the generation and harnessing of wind energy in a sustainable matter.

The WES also includes wind energy planning policy and development management standards to manage wind energy development. The Proposed Project has been designed in accordance with these policies and development management standards.

The WES designates areas as being ‘Strategic Areas’, ‘Acceptable in Principle’, ‘Open for consideration’ and ‘Not Normally Permissible’. The Proposed Turbines are located within the ‘Strategic Areas’. The Proposed Turbines are located in an area that has been designated as the most suitable in the hierarchy for the provision of wind energy development in the County.

Strategic Areas are considered suitable for wind farm development with good/excellent wind resources, access to grid, distance from properties and location outside designated sites. A target of minimum 400MW from these areas is identified in the WES.

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 Project will be capable adhering to the relevant noise and shadow flicker standards.

While the final updated wind energy guidelines have not yet been published it should be noted that noise and shadow flicker are controllable and are discussed further in Chapter 12 and Chapter 5 of the EIAR, respectively. The Proposed Project achieves the recommended distance of 4 times turbine tip height from proposed turbines to third party sensitive receptors, which has become a recognised standard for the purposes of protecting residential visual amenity, as currently outlined in the Draft DoHPLG 2019 Guidelines.

Planning History

A planning search was carried out through the National Planning Application Database and ACP online planning portals in April 2026 for relevant planning applications lodged within the that fall within the red line boundary of the planning application for the Proposed Project. In total, 6 no. applications were identified within the planning application red line boundary of the Proposed Project. 3 no. planning applications relate to a previous 8-turbine wind energy proposal at the Site which are discussed in the following section in further detail, 2 no. planning applications relate to the existing Slievecallan 110kV substation and 1 no. planning application relates to the existing Slievecallan wind farm.

The Site was the subject of a previous wind farm proposal which was submitted in November 2021 for planning permission for an 8 no. turbine renewable energy development and associated works in the

townland of Slieveacurry and adjacent townlands, in Co. Clare (Planning Ref. 21/1226). In January 2022 the application was refused by Clare County Council for 4 no. reasons and a First Party Appeal was lodged with ACP in February 2022 (ABP 312728-22). The Board decided to refuse permission for the appeal on 3 no. grounds. This application was preceded by two earlier application attempts for the same development (Planning Ref: 20/806 & 21/370) that were withdrawn due to legal challenges. For further detail on the previous planning applications on the Site, please see Section 3.3.1 of the Planning Report and Section 1.2 of Chapter 1 of the EIAR.

A planning search was also carried out to establish proposed, permitted and operational wind energy developments within 25km of the Proposed Turbines. In total, 19 no. applications relating to wind energy were identified within 25km of the proposed turbines.

Scoping and Consultation

An EIA scoping report, providing details of the Proposed Project, was prepared by MKO and circulated in January 2025. MKO requested the comments of the relevant personnel/bodies in their respective capacities as consultees with regards to the EIAR process. As part of the constraints mapping process telecommunications operators were contacted in November 2024 in order to determine the presence of telecommunications links either transversing the site or in close proximity to the Proposed Wind Farm Site. Chapter 2 includes a list of scoping consultees and responses received, with full copies of all scoping responses received set out in Appendix 2-1 of the EIAR.

Pre-planning meetings were undertaken with Clare County Council under the provisions of Section 247 of the Planning Act, and ACP under the provisions of Section 37B of the Planning Act. A letter received from ACP dated the 19th March 2026 stated that under Section 37B (4)(A), it is the opinion of ACP that the Proposed Project falls within the scope of the paragraphs 37A(2)(a) and (b) of the Planning Act. This confirmed that the Proposed Project constitutes Strategic Infrastructure Development.

Community engagement has been undertaken by the Applicant, details of which can be found in Appendix 2-2 of this EIAR. The Applicant has carried out consultation in relation to the Proposed Project with local residents surrounding the Proposed Project 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. The development of the Proposed Project will provide an enduring economic benefit to the communities surrounding the Proposed Project, through the potential community benefit package for residents and community groups, employment during the construction and operation of the Proposed Project and through the annual rates payable to the Local Authority.

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 project, 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 the EIAR includes a cumulative impact assessment where appropriate. The potential for cumulative impacts arising from other projects and land uses within the cumulative study area has therefore been fully considered within the 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. A detailed cumulative impact assessment for each discipline within the EIAR is provided in each impact assessment chapter detailing the potential

significant cumulative effects arising and, where appropriate, the specific suite of relevant mitigation measures proposed. The mitigation measures set out in the EIAR will ensure that significant cumulative effects do not arise during the construction, operational or decommissioning phases of the Proposed Project. A long list of all plans and/or projects considered by each of the different disciplines in their cumulative impact assessment are included in Appendix 2-3 of the EIAR..

3 Consideration of Reasonable Alternatives

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

Alternative Site Locations

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

The Site was subject to two previous planning applications in 2020 and 2021 for an 8 no. turbine renewable energy development and had previously been identified as having potential for a wind energy development as a result of a nationwide search of suitable lands. The Proposed Project has also undergone a constraints and facilitators led approach to design, all while being cognisant of any previous application data. A constraints analysis was undertaken and included avoidance of environmental designations (Natura 2000 sites), review of national, regional and local policies and objectives, suitable wind speeds, adequate setbacks from sensitive receptors, proximity to national grid nodes, avoidance of direct impacts on known cultural heritage assets, access, and constructability.

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

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

Clare County Council’s ‘Wind Energy Strategy 2023-2029’ is set out in Volume 6¹ of the CDP and identifies areas within the county according to a hierarchy, from the most optimal down to areas that are not generally considered suitable in relation to wind energy. There are four categories within the Wind Energy Strategy:

¹ Clare County Development Plan 2023-2029, Volume 6 Clare Wind Energy Strategy. <https://clarecdp2023-2029.clarecoco.ie/stage3-amendments/adoption/volume-6-clare-wind-energy-strategy-clare-county-development-plan-2023-2029-51390.pdf>

- > Strategic Areas
- > Acceptable in Principle
- > Open to Consideration
- > Not Normally Permissible

The Proposed Wind Farm Site is located in an area designated as ‘Strategic’ under the CDP’s Wind Energy Strategy. Areas that are Strategic are *‘considered to be eminently suitable for wind farm development and are of strategic importance because of:*

- > *Good/excellent wind resources;*
- > *Access to grid;*
- > *Distance from properties and outside any Natura 2000 sites.’*

The Proposed Wind Farm Site was therefore deemed to have favourable potential to support a wind energy development from a planning policy perspective.

Throughout the design process, the layout of the Proposed Project has been revised and refined to take account of the findings of all desk-based assessments, site surveys/investigations and baseline assessments, including all relevant previous planning application data, which have brought the design from its first initial layout to the current proposed layout.

Alternative Renewable Energy Technologies

To achieve the same maximum estimated electricity output from solar energy as is expected from the Proposed Project (54MW), a larger development footprint would be required. The EIAR Site Boundary encompasses an area of approximately 1260ha and the permanent built infrastructure footprint of the Proposed Project measures approximately 8.7ha, which represents approximately 0.7% 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. 233 ha² or 18.5% of the overall Site. Although the screening exercise was based on identifying lands for onshore wind development; another alternative source of renewable electricity generation would be offshore wind energy.

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

Alternative Turbine Numbers and Model

It is proposed to install 9 no. 6.MW turbines at the Proposed Wind Farm Site which will have an estimated installed capacity of 54MW. Such a wind farm could also be achieved on the Proposed Wind Farm Site by using smaller turbines (for example 2.5 MW machines). However, this would necessitate the installation of over 21 turbines to achieve a similar output. A larger number of smaller turbines would result in the wind farm occupying a greater footprint, with a larger amount of supporting infrastructure being required (i.e., roads etc) and increasing the potential for environmental impacts to occur.

² *Approximately 1.6 - 2 ha are required for each MW of solar panels installed based on approximately 4000 panels per MW (taken from the Sustainable Energy Authority Solar Energy FAQ publication which can be accessed here: https://www.seai.ie/publications/FAQs_on_Solar_PV.pdf). For the purposes of comparison, a minimum value of 1.6 ha has been assumed.*

Alternative Turbine Layout and Development Design

The design of the Proposed Project has been an informed and collaborative process from the outset, involving the designers, developers, engineers, landowners, environmental, hydrological and geotechnical, archaeological specialists and traffic consultants.

The final design of the Proposed Project, including the layout of the Proposed Turbines, takes account of all previous application layouts, site constraints and the distances to be maintained between turbines and from houses, roads, etc. The layout is based on the results of all site investigations since 2016 that have been carried out during the EIAR process, as well as updated constraints and design scoping process with statutory and non-statutory consultees. As information regarding the Site was compiled and assessed, the proposed layout has been revised and amended to take account of the physical constraints of the Proposed Wind Farm Site and the requirement for buffer zones and other areas in which no turbines could be located. 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 Site 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.

Following consideration of the reasons for refusal as outlined in Chapter 1 of the EIAR, the previously proposed turbine layout was reviewed against all site constraints and items raised in the refusal. While the initial turbine layout was similarly 9 no. turbines, the final 'proposed layout' was refined, and turbines were relocated following the scoping exercise and hydrological constraints identified at various locations on the Site. All aspects of the Proposed Project, including both those utilising the design elements proposed in the previous application as well as revised design elements as detailed below were subject to detailed site investigations and a geotechnical and peat stability risk assessment in order to ensure the entirety of the permanent built infrastructure the Proposed Project has a suitable factor of safety value and overall low risk of peat instability.

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

Alternative Borrow Pit Options

The use of onsite borrow pits represents an efficient use of existing onsite resources and reduces the need to transport large volumes of construction stone materials along the local public road network to the Site. The use of onsite resources, that would only be developed for the Proposed Wind Farm Site, reduces the use of off-site existing quarry material assets.

Following geophysical and environmental assessments it was concluded that the Site possessed the necessary stone required for the Proposed Project and therefore only 1 no. borrow pit location was identified to supply the stone requirements while keeping the borrow pits at a reasonable size. The proposed second borrow pit location was not deemed required for the Proposed Project and the design of the Proposed Wind Farm Site removed this element as well as the access road and relocated the proposed second temporary construction compound and meteorological mast. This reduced the overall permanent built infrastructure footprint of the Proposed Project

Alternative Biodiversity Management and Enhancement Mitigation Proposals

To choose what habitats to enhance/mitigate, consideration was given to species and habitats of relevant to the Site. As outlined in Chapter 1 of the EIAR, potential effects on Annex II species including marsh fritillary were a key consideration of the design of the Proposed Project. Cumulative effects on species of ornithological value were also a key consideration in the design and assessment of the Proposed Project, with findings from the ornithological assessments also being incorporated.

The final iteration of the Proposed Enhancement Site shown outlines refinements to the areas within the Proposed Enhancement Site following extensive environmental and ecological assessment, including hydrological connectivity and geotechnical peat stability. The BMEP included in Appendix 6-4 covers areas within the Proposed Wind Enhancement Site that will be managed for hen harrier habitat enhancement and monitored to support marsh fritillary habitat. It also outlines detailed grassland management measures for bird species of high ornithological importance, ensuring adequate setbacks from the Proposed Turbines. In addition, it includes off-site permanent conifer felling in relation to existing or planned turbines in the wider area, restoration of peatland habitats, and the linear replanting of hedgerows

Alternative Grid Connection Options

It is proposed to connect the Proposed Project to the national electricity grid via an underground cable which will connect the Proposed Turbines to the existing Slievecallan 110 kV substation, located approximately 3.9km kilometres to the south of the Proposed Wind Farm Site. Of the 7.1km route, approx. 4.0km is within existing access tracks for Slievecallan Wind Farm. As the turbine layout was finalised, the most suitable routes between each component of the Proposed Project were identified, taking into account the shortest routes and existing forestry tracks and filtering out the physical and environmental constraints of the Site and the associated buffers, and utilising the most direct route between turbines in order to minimise the footprint.

As mentioned above, it is proposed to extend the existing Slievecallan 110kV substation to accommodate the connection of the Proposed Project. An alternative to extending the existing substation would be to construct a new standalone substation adjacent to the Proposed Turbines. Whilst this would reduce the extent of underground cabling between the Proposed Turbines and the substation, any new on-site substation would also require grid connection cabling, either via underground cabling or overhead line. This would also result in a larger permanent built infrastructure footprint for 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 primarily follow the route of existing access tracks, thereby minimising the amount of ground disturbance required. The chosen Proposed Grid Connection design was considered to be the most environmentally prudent and practical option for a grid connection.

Alternative Ports of Entry and Site Access

The alternatives considered for the port of entry of wind turbines into Ireland for the Proposed Project included Port of Galway, Shannon Foynes Port and Dublin Port. The primary chosen port of entry is Shannon Foynes due to its proximity and accessibility from the port to the national and regional roads towards the Proposed Project. Shannon Foynes represents the closest port to the Proposed Project and would therefore result in less vehicular emissions due to turbine component delivery, less alterations to the existing road network or private lands to facilitate the delivery of turbine components, as well as less potential for traffic and transport impacts due to the shorter distance to the Proposed Project.

For turbine components and other abnormal loads (e.g., prefabricated buildings for construction compound areas etc.) transport, cognisance was taken of the haul routes used for other wind farm developments in the local area in addition to the general preference to minimise the requirement for significant accommodation or widening works along the public road network and associated environmental effects. Multiple turbine delivery routes, as well as methods of transport were considered when deciding a preferred route. These routes have been proven suitable for the transport of turbine components, and the transport analysis shows that only minor accommodation works will be required to accommodate the turbine delivery. The turbine transport route will utilise the national and primary roads available to ensure the road network holds the capacity to manage large loads. When considering turbines transport routes, alternative routes comprising of a more direct route with greater stretches of

secondary and local roads were considered less optimal due to the increased possibility of road and roadside disruption and a greater need to carry out works.

General Construction and Operational Entrances

It is proposed to access the Proposed Wind Farm Site via an existing access track off the L6230 local road to the northwest of the Proposed Turbines. This entrance will be widened to facilitate the delivery of the construction materials and turbine components.

In assessing the most suitable route for turbine transport, two routes were considered:

- Option 1: Access to the Proposed Wind Farm Site from the north via the M18, N85 National Secondary Road, the R460 Regional Road and the L1074 Local Road.
- Option 2: Access to the Proposed Wind Farm Site from the south via the M18, N85 National Secondary Road and the R460 Regional Road.

Option 1 would see turbine deliveries travel via Inagh along the R460 Regional Road and the L1074 Local Road to the site entrance, accessing the Proposed Wind Farm Site from the northwest. A review has been completed for this route in Chapter 15, Section 15.1.9 showing that it would be feasible for turbine delivery vehicles to travel along this route.

Option 2 follows the same route as Option 1, but the delivery vehicles will continue along the R460 Regional Road accessing the Proposed Wind Farm Site from the south via additional sections of new site access roads and a new site entrance located on the R460.

These routes have been proven suitable for the transport of turbine components, and the transport analysis (as presented in Section 15.1 of this EIAR), shows that only minor accommodation works will be required to accommodate the turbine delivery.

While Option 1 requires for more use of the local road network north of the Proposed Wind Farm Site and accommodation works to overcome the vehicle turning constraints, Option 2 also requires accommodation works and construction of additional new roads to access the Proposed Wind Farm Site within areas of steep terrain which this would result in a larger development footprint for the Proposed Project. As a result, Option 1 was considered the preferred turbine delivery route to the Proposed Wind Farm Site.

The abnormal load accommodation works will be temporary in nature, over a short period of the construction phase only. The abnormal load accommodation works will be reinstated after all abnormal loads have been delivered to the Site. However, should replacement components be required, these can be temporarily reopened to facilitate such works.

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 Proposed Enhancement 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.

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 Site is located approx. 7km south of Ennistimon, Co. Clare and 8km west of Inagh, Co. Clare. The town of Miltown Malbay is located approx. 5.8km east of the nearest proposed turbine (T07). The Proposed Wind Farm Site is located in an upland setting comprising predominantly cutover bog with areas of commercial forestry, agricultural land and low density residential properties. The nearest Natura 2000 site to the Site, i.e., Special Area of Conservation (SAC) or Special Protection Area (SPA) is the Inagh River Estuary SAC located approximately 6.7km north of the Proposed Wind Farm Site at its closest point (T03). Elevations within the Proposed Wind Farm Site range from ~120mOD (metres above Ordnance Datum) in the south to ~250m in the centre of the Proposed Wind Farm Site.

Current land-use on the Site comprises coniferous forestry, agriculture, turf cutting and public road corridor. Land-use in the wider landscape comprises a mix of agriculture, low density housing, renewable energy and commercial forestry.

The overall layout of the Proposed Project is shown on Figure 4-1. This figure shows the proposed locations of the wind turbines, underground 33kV cabling, permanent extension of the Slievacallan 110kV substation, peat and spoil management areas, met mast, temporary construction compounds, biodiversity management and enhancement areas, internal roads layout and entrance to the Site.

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

Table 0-1 Proposed Wind Turbine Locations and Elevations

Turbine	ITM Coordinates		Top of Foundation Elevation (m OD)
	Easting	Northing	
T01	511800	680767	162
T02	512456	680814	172.5
T03	511518	680283	211.5
T04	512025	680280	212
T05	512851	680510	201
T06	512391	679844	233
T07	511487	679203	231

T08	511996	679451	243.5
T09	511797	679833	213

The Proposed Turbines will have the following dimensions:

- Turbine Tip Height – 175 metres
- Hub Height – 100 metres
- Rotor Diameter - 150 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 Proposed Turbines 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.

For the purposes of this EIAR, a rated output 6MW has been chosen to calculate the potential generating capacity of the proposed 9-turbine renewable energy development, which would result in an estimated installed capacity of 54MW.

The Proposed Wind Farm Site makes use of the existing road network insofar as possible. It is proposed to upgrade approx. 2.5km of existing roads and tracks, and to construct approx. 5.2km of new access road on the Proposed Wind Farm Site. Areas such as wide junctions and proposed hardstands will be used as passing bays throughout the construction phase of the Proposed Wind Farm Site.

It is proposed to permanently extend the existing Slievecallan 110kV substation to accommodate the connection of the Proposed Project. The works will consist of the construction of a new control building with welfare facilities, associated electrical plant and equipment and security fencing. The proposed substation extension is located in an established expansion area within the Slievecallan Wind Farm and accessed by existing wind farm access roads. A control building will be located within the proposed substation extension compound. The substation control building will include staff welfare facilities for the staff that will work on the substation during the operational phase of the Proposed Project.

One meteorological (met) mast is proposed as part of the Proposed Wind Farm Site. The met mast will be equipped with wind monitoring equipment at various heights. The met mast will be a free-standing slender lattice structure 30m in height. It will be constructed on a hard-standing area sufficiently large to accommodate the equipment that will be used to erect the mast.

Each turbine and the met mast will be connected to the proposed substation extension compound via underground 33kV electricity cabling. Fibre-optic cables will also connect each wind turbine and the meteorological mast to the proposed substation extension compound. The electricity and fibre-optic cabling connecting to the proposed substation extension compound will be run in cable ducts approx. 1.2m beneath ground level following the access tracks to each turbine location. The proposed 33kV underground electrical cabling will continue from the wind farm road to the proposed substation extension compound located in the townland of Knockalassa. The total length of cabling along the Proposed Grid Connection Site measures approximately 7.1km.

There are 2 no. temporary construction compounds proposed as part of the Proposed Project. Both temporary construction compounds will be removed as part of the post-construction reinstatement works of the Proposed Wind Farm Site. The foundation of these compounds will be left in situ and will be left to revegetate naturally.

A Biodiversity Management and Enhancement Plan (BMEP) has been prepared for the Proposed Project and is included as Appendix 6-4 of the EIAR. A total of 13 areas totalling approx. 172.7 ha

within the Site have been selected for biodiversity enhancement measures as part of the Proposed Project and to enhance the Site for species and habitats known to occur within the Site

- **Hen Harrier Habitat Enhancement**
 This includes for the permanent removal of c. 123 hectares of forestry and the establishment of more biodiverse upland habitats, making these areas available for foraging, and the management of c. 20 hectares of agricultural grassland into species rich wet grassland, which will lead to greater numbers of passerine prey being available for the hen harrier.
- **Marsh Fritillary Habitat Enhancement**
 The measures provide for the management of approx. 20 ha of existing farmland to promote supporting habitat for marsh fritillary as well as implement an adaptive grazing regime which will be informed by annual monitoring, increasing or decreasing grazing as required.
- **Peatland Habitats**
 Additional proposed measures amounting to 36.4 ha aim to restore blanket bog habitat using appropriate and proven ‘forest to bog’ methodologies.
- **Linear Habitats**
 It is proposed to plant c. 1,960m of hedgerow and riparian woodland habitat within the Site. Riparian planting is proposed to be carried out in the east of the Site as well as the management of existing hedgerow.

It is intended to obtain the majority of materials for the construction of the Proposed Project from a proposed onsite borrow pit. Access to the borrow pit will be via a proposed new access road from the north. Post-construction, the borrow pit will be backfilled with excavated spoil, then reseeded or left to vegetate naturally.

It is proposed to manage overburden generated through construction activities for the Proposed Project locally within the Site, through backfilling of the proposed borrow pit void in the first instance and following that within identified peat and spoil management areas. Peat will be stored within 4 no. peat management areas within clearfelling areas around Proposed Turbines and spoil within 1 no. spoil management area adjacent to the proposed borrow pit. As such, there is enough capacity in the peat and spoil management areas within the Proposed Wind Farm Site.

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

It is proposed to access the Proposed Wind Farm Site via an existing access track off the L6230 local road to the northwest of the Proposed Turbines. This entrance will be widened to facilitate the delivery of the construction materials and turbine components. The site entrance was subject to Autotrack assessment to identify the turning area required, as described in Section 15.1 of the Traffic and Transport Assessment. Appropriate sightlines will be established to the north and south of the proposed site entrance for the safe egress of traffic. The proposed works will result in a permanent upgrade of this current site access from the L6230 local road, which will also act as the operational phase entrance to the Proposed Wind Farm Site.

Temporary accommodation works will be required at the Proposed Wind Farm Site entrance to facilitate abnormal load delivery. The abnormal load entrance will be temporary in nature, over a short period of the construction phase only. The abnormal load entrance will be reinstated after all abnormal loads have been delivered to the Site. However, should replacement components be required, this entrance will be temporarily reopened to facilitate such works.

For the purpose of this EIAR, the Port of Foynes has been selected and assessed to facilitate turbine delivery to the Site. The turbine delivery route is approximately 94km from the Port of Foynes to the proposed site access off the L6230.

The Proposed Project has the potential to have significant benefits for the local economy, by means of job creation, landowner payments and commercial rate payments. An important part of a renewable energy development, which Slieveacurry Ltd. (the Applicant) has been at the forefront of developing, is its Community Benefit Package. The concept of directing benefits from wind farms to the local community is promoted by the National Economic and Social Council (NESC) and Wind Energy Ireland (WEI) among others. While it may be simpler and easier to put a total fund aside for a wider community area, the Applicant is endeavouring to develop new ways to direct increased gain towards the local community with particular focus on those living closest to the Proposed Project.

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

The Applicant has given careful consideration to the issue of community gain arising from the Proposed Project, if permitted and constructed. Community gain from significant development proposals, including wind farms, whilst a relatively recent approach, is now a common consideration for developers and, indeed, planning authorities. This approach recognises that, with any significant wind farm proposal, the locality in which the Proposed Project is situated is making a significant contribution towards helping achieve national renewable energy and climate change targets, and the local community should derive some benefit from accommodating such a development in their locality.

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

Following the end of their useful life, the equipment may be replaced with a new technology, subject to planning permission being obtained, or the Proposed Turbines may be decommissioned fully. All above ground turbine and mast components would be separated and removed off-site for recycling. 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 proposed extension of the 110kV substation will be removed from the cable ducts. The cable ducting will be left in-situ as it is considered the most environmentally prudent option, avoiding unnecessary excavation and soil disturbance. The proposed extension to the 110kV electricity substation will remain in place as it will be part of the Electricity Grid under the ownership and control of the ESB Networks 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 Site is located approximately 7km south of Ennistimon, Co. Clare and 8km west of Inagh, Co. Clare. The town of Miltown Malbay is located approx. 5.8km east of the nearest proposed turbine (T07).

Land-use within the Proposed Wind Farm Site comprises coniferous forestry, agriculture, turf cutting and public road corridor. Land-use in the wider landscape comprises a mix of agriculture, low density housing, renewable energy and commercial forestry.

The construction of the Proposed Project will provide employment for technical consultants, contractors and maintenance staff. As discussed, it is estimated that the construction of the Proposed Project will require approximately 70 employees in total, with the majority of these roles focused on the Proposed Wind Farm Site. Up-skilling and training of local staff in the particular requirements of the wind energy industry is likely to lead to additional opportunities for those staff as additional wind farms are constructed in Ireland. This will have a long-term slight positive indirect residual effect.

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

Shadow flicker is an effect that occurs when rotating wind turbine blades cast shadows over a window in a nearby property. Shadow flicker is an indoor phenomenon, which may be experienced by an occupant sitting in an enclosed room when sunlight reaching the window is momentarily interrupted by a shadow of a wind turbine's blade. Shadow flicker lasts only for a short period of time and occurs only during certain specific combined circumstances. The Guidelines (DoEHLG, 2006) recommend that shadow flicker at neighbouring dwellings within 500 metres of a proposed turbine location should not exceed a total of 30 hours per year or 30 minutes per day. As detailed in Section 5.2.3.5 there are no third-party inhabitable dwellings (hereafter referred to as sensitive receptors) less than 500 metres from the Proposed Turbines. 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 74 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 26.46% has been applied. Of the 74 no. properties modelled; it is predicted that:

- 21 properties are theoretically predicted to experience zero shadow flicker;
- 53 properties are theoretically predicted to experience some shadow flicker;
 - Of the 53 properties, 28 properties are theoretically predicted to experience shadow flicker that exceeds the Guideline thresholds for daily and/or annual shadow flicker. It should be noted that of these 28 properties, 6 no. are in derelict condition and 11 no. are involved landowners (including 4 no. of the derelict properties). As a result, no mitigation measures are required for these 13 no. properties.
 - In total, 15 no. sensitive receptors are theoretically predicted to experience shadow flicker that exceeds the Guideline thresholds for daily and/or annual shadow flicker.
- The annual threshold of over 30 hours for shadow flicker (Guidelines) is predicted to be exceeded at 6 properties once the regional sunshine average factor of 30.56% has been considered. It should be noted that 3 of these 6 properties are involved landowners.

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

A comprehensive desk study and suite of field surveys were carried out to inform the assessment. Multidisciplinary walkover surveys were carried out on various dates in 2017, 2018, 2019, 2020 and 2021 to support the 2021 EIAR. Additional surveys undertaken in 2023, 2024, 2025, and 2026 to ground truth previous findings and identify changes to the environmental baseline. The majority of habitat surveys covered the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011). Dedicated species/habitat surveys including bats and other protected mammals, and detailed habitat/botanical assessment surveys were carried out, during which any incidental records of other species were also recorded. In addition, baseline aquatic habitat, fisheries and macroinvertebrate surveys have been undertaken as part of the detailed baseline assessment. The multi-disciplinary walkover surveys comprehensively covered the lands within the Site. These surveys were carried out in accordance with TII Guidelines on Ecological Surveying Techniques for Protected Flora and Fauna on National Road Schemes (TII, 2008).

The habitats within the Site were the subject of a detailed survey and assessment and habitat mapping. This habitat mapping and assessment was undertaken following the 'A Guide to Habitats in Ireland' (Fossitt, 2000). Grassland habitats have also been categorised to plant communities from the National Survey of Upland Habitats (Perrin et al. 2014) and the Irish Vegetation Classification.

During the multidisciplinary surveys, a search for Invasive Alien Species (IAS) listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015) and the 'First Schedule' of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 374 of 2024) was conducted. Please see Appendix 6-5 for further details.

The majority of permanent the built infrastructure footprint of the Proposed Project is dominated by active forestry of varying age classes, classified as Conifer plantation (WD4) and where felling had recently occurred, Recently felled woodland (WS5). The majority of the Proposed Wind Farm Site is

dominated by peatland habitat mosaics which comprised a combination of Upland blanket bog (PB2), Wet heath (HH3), and Cutover bog (PB4), with Eroding blanket bog (PB5) occurring to a lesser extent. Small sections of exposed rock, classified as Exposed siliceous rock (ER1), were also occasionally recorded within these mosaic habitats. Large areas of the Site are dominated by Wet grassland (GS4), particularly in the eastern and southern sections. One proposed turbine is located within this habitat. Other habitats recorded included small sections of Scrub (WS1), Hedgerows (WL1), Wet willow-alder ash (WN6), Spoil and bare ground (ED2), and Buildings and artificial surfaces (BL3).

Within the Proposed Wind Farm Site, the following Annex I habitats of the EU Habitats Directive have been recorded:

- Northern Atlantic wet heaths with *Erica tetralix* [4010]
- Blanket bogs [7130]
- Transition mires and quaking bog [7140]

The majority of these peatland habitats have been avoided in the design of the Proposed Project, with only turbines T3 and T6 located within this degraded habitat mosaic. Additional elements of the Proposed Project within peatland mosaic habitats include a small portion of Turbine 7, the proposed borrow pit, and the southern temporary construction compound, and sections of new access roads.

A number of watercourses drain the Proposed Wind Farm Site. The Ballynew stream (28B27), an Upland eroding stream (FW1), drains the Site to the west, and discharges into the Glendine River downstream. To the north, the Proposed Wind Farm Site is drained via the Fahanlunaghtamore stream (28F09), an Upland eroding stream (FW1), which discharges into the Derrymore River downstream. The Proposed Wind Farm Site is drained to the south via the Letterkelly stream (28L07), an Upland eroding stream (FW1), which discharges into the Kildeema River downstream. To the east, the Proposed Wind Farm Site is drained via the Knockacarn stream (28L07), an Upland eroding stream (FW1), discharging into the Derrymore River further downstream.

The majority of the Proposed Grid Connection Site will predominantly follow a combination of existing farm tracks classified as Spoil and bare ground (ED2) and Recolonising bare ground (ED3), conifer plantation (WD4), gorse-dominated scrub (WS1), in addition to existing road infrastructure classified as Buildings and Artificial Surfaces (BL3). This road was delineated by Hedgerows (WL1), Dry meadows and grassy verges (GS2), and private walls classified as Buildings and artificial surfaces (BL3) and one area of Tall-herb swamps (FS2). No Annex I habitats were recorded along the Proposed Grid Connection Site.

As part of this application, a Biodiversity Management and Enhancement Plan (BMEP) has been prepared and is included as Appendix 6-4. The target of this plan is to enhance suitable supporting habitat for hen harrier and marsh fritillary, as well as peatland restoration (using recognised forest to bog methodologies) and planting and bolstering of linear features such as hedgerows and riparian woodlands.

The current land use of the Proposed Enhancement Site is commercial forestry and agriculture, dominated by Conifer plantation (WD4) and Wet grassland (GS4). Areas of Lowland blanket bog (PB3), Reed and large sedge swamps (FS1), and Wet pedunculate oak-ash woodland (WN4).

Marsh fritillary butterflies were confirmed to be breeding within the Site, primarily within peatland habitat mosaics. It was noted that a large proportion (approx. 186 ha) of the Proposed Wind Farm Site comprised potential supporting habitat for this species. Devils bit scabious was recorded throughout these areas, which comprised a mosaic of Wet heath (HH3), Upland blanket bog (PB2), Cutover bog (PB4), and Wet grassland (GS4). Whilst peatland habitats across the Proposed Wind Farm Site have been identified as providing potential supporting habitat for marsh fritillary, records of larval webs were infrequent and localised. Given the general consistency of habitat suitability across the Proposed Wind

Farm Site, inconsistent marsh fritillary distribution across the Site can be attributed to the recognised ephemeral and stochastic nature of this species' population dynamics.

No other resting or breeding sites for any protected mammals were identified in close proximity to the Proposed Project, and no significant effects on any protected fauna are anticipated. Impacts on protected fauna, with exception of bats and marsh fritillary, is limited indirect effects on supporting habitat, as a result of deterioration of water quality and disturbance, which have been robustly mitigated.

Bat species composition and abundance recorded during detailed bat surveys undertaken at the Proposed Project were found to be typical of the geographic location and nature of the area and is utilised by a regularly occurring bat population of Local Importance. The Site is within the known range of lesser horseshoe bat, although this species was recorded only during the autumn season with two bat passes in total. 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, an adaptive monitoring and mitigation strategy has been devised for the Proposed Project in line with NatureScot Guidance (2021), which will ensure that there is no potential for significant residual effects on local bat populations during the operational phase of the Proposed Project.

In relation to designated sites, the following nationally designated sites have been identified as being within the Zone of Influence (ZoI), on a precautionary basis:

- Inagh River Estuary pNHA (000036)
- Carrowmore Point to Spanish Point and Islands pNHA (001021)

No potential for residual adverse impacts on these pNHAs has been identified following implementation of mitigation measures in relation to potential effects on rivers/streams and sensitive aquatic faunal species and therefore no significant effects on the pNHA's are anticipated.

An Appropriate Assessment Screening Report and Natura Impact Statement (NIS) accompany this application. 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 Appropriate Assessment Screening Report identified the potential for significant effect on the following European Sites:

- Inagh River Estuary SAC (000036)
- Carrowmore Point to Spanish Point and Islands SAC (001021)
- Mid-Clare Coast SPA (004182)

The NIS concludes that the Proposed Project, individually or in-combination with other plans or projects, will not adversely affect the integrity of any European Site.

It is therefore judged that, provided that the Proposed Project is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant residual impacts on biodiversity, flora and fauna will not occur. The biodiversity enhancement measures outlined for the Proposed Project will result in an improvement of the existing ecological conditions of the Site.

Chapter 7 of this EIAR assesses the likely significant effects that the Proposed Project may have on bird species. Firstly, a brief description of the Proposed Project is provided. This is followed by a comprehensive description of the methodologies that were followed in order to obtain the information necessary to complete a thorough assessment of the potential effects of the Proposed Project on bird species. The survey data is presented in full in the Environmental Impact Assessment Report (EIAR) appendices with a summary of the information presented within Chapter 7. An analysis of the results is then provided, which discusses the ecological significance of the birds recorded within the Proposed Wind Farm Site 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 Study Area. 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 NIS 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), with the exception of foraging hen harrier, for which a Medium (Percival, 2003) and Significant (EPA, 2022) effect was predicted in relation to disturbance during construction and displacement effects during operation. However, as detailed in the BMEP associated with this EIAR, a dedicated hen harrier enhancement plan is proposed to reduce the magnitude of the impact to a Low (Percival, 2003) and Slight (EPA, 2022) effect during by providing alternative foraging habitat for the species within the Site.

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

The implementation of the prescribed mitigation and habitat restoration 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

Chapter 8 of this EIAR assesses the likely significant effects that the Proposed Project may have on Land, Soils and Geology. The bedrock across the Site is mapped as siltstone, shale and sandstone variations. Subsoils are predominantly mapped as peat and glacial tills. Bedrock outcrop or subcrop is also widely mapped across the Site (i.e. subsoils are absent or very shallow).

Site investigations and geotechnical assessments at the Site were extensive and consisted of 914 no. peat depth probes, 7 no. trial pits and geophysical surveys. The geological setting of the Site has been thoroughly assessed, and the geological setting is fully understood.

Peat depths recorded across the Site ranged from 0 to 5m with an average depth of 0.7m. This would be considered shallow for upland blanket bog. Approximately 81% of recorded peat depths were less than 1m and with 94% of less than 2.0m.

Refusal on bedrock was recorded in all 7 no. trial pits carried out at the Site. Depth to bedrock is shallow at the Site and ranged between 0.3m and 2m with an average of 1.5m at the trial pit locations. This is consistent with the GSI subsoil mapping which shows bedrock outcrop or subcrop widely mapped across the Site.

Depth to bedrock at Proposed Turbines where trial pits were carried out (T1, T2, T3, T5 and T6) ranged between 0.8m and 1.8m with an average of 1.2m. The depth to good quality competent bedrock at Proposed Turbines T4, T7, T8 and T9 ranged between 1 and 6.5m below ground level (mbgl) based on the geophysical surveys carried out at each location.

Excavation of peat, subsoil and bedrock will be required for site levelling and for the installation of Proposed Turbines and associated 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 location, 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 management 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 there is a low risk of peat instability/failure at the Site largely due to the shallow thickness and drained nature of the peat.

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

The Proposed Project also includes Biodiversity Management and Enhancement measures; however, no significant excavations will occur in these areas and therefore no effects on land, soils and geology will occur. The enhancement measures will result in a net gain in biodiversity for Marsh Fritillary and Hen Harrier habitats at the Site.

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

Chapter 9 of this EIAR assesses the likely significant effects that the Proposed Project may have on Hydrology and Hydrogeology . In terms of regional hydrology, the western half of the Proposed Wind Farm Site, including 3 no. Proposed Turbines (T7, T8 and T9), the proposed extension to the existing Slievecallan 110kV substation and approximately 5.6km of the Proposed Grid Connection Site underground electrical cabling route are located in the Annagh River catchment.

The eastern half of the Proposed Wind Farm Site, including 6 no. Proposed Turbines (T1 to T6), along with 1.3km of the Proposed Grid Connection Site are located in the Inagh River surface water catchment.

A small section of the Proposed Enhancement Site extends into the Annageeragh River catchment on the far south of the Site, which is upstream of Doo Lough.

The bedrock underlying the Site is classified as poorly productive in terms of well water yields. The bedrock has little or no open cracks which means groundwater movement within the aquifer is localised. Groundwater at the Site can be classed as sensitive in terms of potential impacts from the Proposed Project. However, the majority of the bedrock is covered in peat which acts as a protective cover to groundwater quality. The low potential for pollutant travel within the bedrock groundwater makes surface water bodies such as streams more vulnerable to pollution than groundwater at this site. There will be no impact on private wells as a result of the Proposed Project.

The designated sites that are hydraulically connected (surface water flow paths only) to the Site include the Mid-Clare Coast SPA, Carrowmore Point to Spanish Point and Islands cSAC, White Strand/Carrowmore Marsh and Inagh River Estuary SAC. These are all coastal/estuarine protected sites and are not freshwater dependant. From a hydrological perspective there will be low risk of impact on these marine/estuarine designated sites as they are significantly less sensitive (even without mitigation) compared to a freshwater habitat with regard to construction effects.

Due to the nature of wind farm and grid connection developments, being near surface construction activities, effects on groundwater are generally negligible and surface water is generally the main sensitive receptor assessed during impact assessments. The primary risk to groundwater at the Site would be from hydrocarbon spillage and leakages. These are common potential impacts to all construction sites (such as road works and industrial sites). These potential contamination sources are to be carefully managed at the Site during the construction and operational phases of the development and measures are proposed within the EIAR to deal with these potential minor impacts.

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 layout of the proposed wind farm development site, thereby avoiding sensitive hydrological features.

Other preventative measures also include fuel and concrete management and a waste management plan which will be incorporated into the overall Construction and Environmental Management Plan.

Doo Lough, which exists downstream of a small part of the Proposed Enhancement Site is used as public water supply for the west Clare area. However, due to the largely non-invasive nature of the proposed enhancement works there is no potential for significant effects on the water environment.

All proposed Biodiversity Management and Enhancement works will be in accordance with the best practice Forest Service regulation, policies and strategic guidance documents as well as Coillte, DAFM and NatureScot guidance documents to ensure minimal potential negative effects on soil and water environment.

There will be no risk of increased flooding down-stream as a result of the Site due to the proposed drainage measures and also since the Proposed Project infrastructure does not encroach fluvial flood zones. 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 site 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 Site 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. However, with regard the catchments relevant to the Proposed Wind Farm Site and Proposed Grid Connection Site (i.e. Annagh and Inagh), wind farm developments are largely existing and operational. Therefore, there is no risk of a construction overlap with the operational wind farms and the Proposed Project. 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 of this EIAR 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 (SO₂), Particulate Matter (PM₁₀), Nitrogen Dioxide (NO₂), Carbon Monoxide (CO) and Ozone (O₃) for the selected air quality zone to determine the representative levels of such emissions for the Proposed Project.

The EPA has designated four Air Quality Zones for Ireland:

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

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

The air quality in the vicinity of the Site is typical of that of rural areas in the west of Ireland, i.e., Zone D. Prevailing south-westerly winds carry clean, unpolluted air from the Atlantic Ocean onto the Irish mainland. The EPA publishes Air Monitoring Station Reports for monitoring locations in all four Air Quality Zones. The most recent report on air quality in Ireland, 'Air Quality in Ireland 2023' was published by the EPA in 2024. The EPA reports provide SO₂, PM₁₀, NO₂ and O₃ concentrations for areas in Zone D. These can be seen in Section 10.2 of Chapter 10.

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

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

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

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

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

There will be no net carbon dioxide (CO₂) 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 (CO₂), oxides of nitrogen (NO_x), and sulphur dioxide (SO₂). 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 34,791 tonnes of Carbon Dioxide (CO₂) per annum, or 1,217,690 tonnes of carbon dioxide over the proposed 35 year lifecycle of the Proposed Project.

Climate

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

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

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

In May 2025, the Environment Protection Agency (EPA) released ‘Ireland’s Greenhouse Gas Emissions Projections 2024-2055’. The EPA has produced two scenarios in preparing these greenhouse gas emissions projections: a “With Existing Measures” (WEM) scenario and a “With Additional Measures”

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

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

A methodology was published in June 2008 by scientists at the University of Aberdeen and the Macaulay Institute with support from the Rural and Environment Research and Analysis Directorate of the Scottish Government, Science Policy and Co-ordination Division. The document, '*Calculating Carbon Savings from Wind Farms on Scottish Peat Lands*', was developed to calculate the impact of wind farm developments on the soil carbon stocks held in peat. This methodology was refined and updated in 2011 based on feedback from users of the initial methodology and further research in the area. The web-based version of the carbon calculator, which supersedes the excel based versions of the tool, was released in 2016. Please note, the web-based version of the carbon calculator is currently not available, the Macaulay Institute has supplied a worksheet of the calculator (Version 2.14.0) which has been used to complete the following carbon loss assessment. The tool provides a transparent and easy to follow method for estimating the impacts of wind farms on the carbon dynamics of peatlands. Previously guidance produced by Scottish Natural Heritage in 2003 had been widely employed to determine carbon payback in the absence of any more detailed methods.

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

The carbon balance of wind farm developments in peatland habitats has attracted significant attention in recent years. When developments such as wind farms are proposed for peatland areas, there will be direct impacts and loss of peat in the area of the development footprint. There may also be indirect impacts where it is necessary to install drainage in certain areas to facilitate construction, or from the reinstatement of extracted peat. The works can either directly or indirectly allow the peat to dry out, locally, which permits the full decomposition of the stored organic material with the associated release of the stored carbon as CO₂. It is essential therefore that any wind farm development in a peatland area saves more CO₂ than is released. The Proposed Wind Farm Site is situated on pastoral agricultural land and peatland with small sections being covered by coniferous forestry. For this reason, the carbon balance between the use of renewable energy and the loss of carbon stored in the peat is assessed in this EIAR.

The Proposed Project will result in the loss of 101,215 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 54MW 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 34,791tCO₂e per annum, or 1,217,690tCO₂e 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 Turbines in approximately 35 months (2.91 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.

Noise and Vibration

Chapter 12 of this EIAR assesses the potential noise and vibration effects associated with Proposed Project during the construction, operational, and decommissioning phases. The assessment considers nearby homes and other sensitive locations and evaluates whether the project could give rise to effects that would be noticeable, disturbing, or harmful.

The surrounding area is rural and generally quiet. Existing background noise is typically associated with wind, distant traffic, agricultural activity, and existing wind farms in the wider area. To establish baseline conditions, background noise monitoring was carried out at representative locations near nearby dwellings. These measurements were used to inform the assessment and to set appropriate noise limits for the Proposed Project.

During construction, temporary noise will arise from activities such as site preparation, road construction, turbine foundation works, installation activities, excavation, tree felling, grid connection works, and construction traffic. The assessment shows that construction noise will be short-term and temporary in nature. While some activities may generate noticeable noise for brief periods, predicted levels at nearby dwellings remain within accepted guidance limits. Certain activities, such as underground cabling or tree felling close to individual properties, may result in higher noise levels for short durations, typically less than a day at any one location, due to the progressive nature of the works. Vibration associated with construction activities is predicted to be very low and well below levels that could cause building damage or result in disturbance. Overall, construction-related noise and vibration effects are assessed as not significant.

Once operational, noise will primarily arise from the wind turbines and the electrical infrastructure associated with the proposed extension to the existing 110kV Slievacallan substation. Detailed noise modelling has been undertaken using conservative assumptions to assess potential effects at surrounding dwellings. The results show that operational noise levels from the Proposed Project will comply with national and international guidance and accepted best practice limits at all noise-sensitive locations. The assessment also considered cumulative effects with other existing wind farms in the area, as well as factors such as wind direction and sound characteristics. No significant effects related to low-frequency noise, tonality, or amplitude modulation are predicted. Vibration from turbine operation diminishes rapidly with distance and is not perceptible at nearby homes. Operational noise and vibration effects are therefore assessed as not significant.

At the end of the operational life of the Proposed Project, decommissioning activities will involve the removal of above-ground infrastructure. Noise and vibration during this phase will be similar to, but generally less than, construction activities and will be temporary. Decommissioning effects are assessed as not significant.

The assessment demonstrates that the Proposed Project will comply with accepted noise and vibration guidance without the need for additional mitigation measures. Nevertheless, best practice construction methods will be applied, and a noise compliance monitoring plan will be implemented during the operational phase. A formal complaints procedure will also be in place to address any concerns should they arise.

In summary, noise and vibration associated with the Proposed Project will remain within accepted limits throughout all phases of the project. Construction and decommissioning effects will be temporary and controlled, while operational effects will be low in level and long-term. No significant noise or vibration impacts are expected at nearby homes or other sensitive locations.

13

Landscape and Visual

Chapter 13 of this EIAR includes a Landscape and Visual Impact Assessment (LVIA). It addresses the likely significant effects of the Proposed Project on the landscape and visual amenity. A key focus of the LVIA was comprehensive assessment of the Proposed Turbines as the essential aspect of the Proposed Project likely to give rise to significant landscape and visual effects within a 25km study area – the ‘LVIA Study Area’. The LVIA is supported by site visits and various best practice tools for LVIA, such as the production of verified photomontages, ZTV mapping, a Route Screening Analysis and an impact assessment methodology which follows best practice guidance for LVIA.

The Proposed Project is primarily located in the Sliabh Callan Uplands LCA of Co. Clare. The Proposed Turbines are sited in marginal upland characterised by commercial forestry, agricultural and bog lands. The landscape in this LCA has the lowest landscape sensitivity rating to wind energy in the CCDP 2023-29. The landscape within the Proposed Wind Farm Site is strongly influenced by current and historic land use, it has been modified for commercial forestry and historic peat harvesting. All Proposed Turbines are located within an area designated as ‘Strategic Area’ for wind energy by the Clare Wind Energy Strategy. Overall, this LVIA determined the Site to be of ‘Low’ landscape sensitivity, an acceptable receiving environment for the Proposed Project. The siting of the Proposed Turbines within the ‘Mountain Moorland’ are found to comply with the Guidelines (DoEHLG, 2006) in terms of its siting and design and 4-times-tip-height set-back distance from all third-party dwellings and most involved dwellings as set out in the Draft Guidelines (DoHPLG, 2019), within a sparsely populated upland of the Sliabh Callan Uplands.

Imagery was captured from a total of 17 No. viewpoints in the LVIA Study Area for the production of photomontages. These visualisations were used to assess the landscape and visual effects of the Proposed Turbines on all of the receptors scoped in for assessment during preliminary analysis using ZTV mapping. The visual receptors include: 4 No. CCDP Scenic Routes, 8 No. settlements, 4 No. recreational routes, 4 No. Recreational, Cultural Heritage and Tourist Destinations and 6 No. regional- and national-level transport routes. Many receptors are represented within the 17 No. selected photomontage viewpoints (Photomontage Booklet).

Visibility of the Proposed Turbines is predominantly limited to areas upon the flat coastal plain to the south-west of the Proposed Turbines, upon the southern slopes of the Burren to the north and the coastal farmland to the north-west. Due to screening from the high elevation of Slieveacallan, no visibility is evident from a vast area to the south-east of the LVIA study area and visibility from Ennis and drumlin farmland to the north-east of the site is also screened by intervening topography. Visual and landscape effects in close proximity are mitigated by topographical and vegetation screening factors present in the hilly and flat farmland landscape surrounding the site and within the wider LVIA Study Area.

In terms of landscape character, only LCA 17 - The Sliabh Callan Upland, in which the Proposed Turbines are located will experience direct effects on landscape character as a result of the Proposed Project. 2 No. LCAs were found to be of 'High' sensitivity: LCA 3 – Cliffs of Moher and Lahinch and LCA 20 – Malbay Coastal Farmlands due to their proximity to the Atlantic Coast, the 'Heritage Landscapes' and the significance of The Burren and The Cliffs of Moher as landscape receptors of National and International renown. As such, the likely significant effects of the Proposed Project upon these landscapes were assessed in detail in this LVIA (See Appendix 13-2). The Proposed Turbines are visible from within these landscapes but located outside them, therefore effects on landscape character are indirect and the Proposed Project will not materially alter these landscape receptors and landscape effects were not deemed to be significant.

The visual assessment concluded that residual visual effects of "Moderate" significance was deemed to arise at eight of the 17 viewpoint locations. All other viewpoints were assessed as resulting in Slight significance (7) and Not Significant (2) residual visual effects. Importantly, the LVIA found no significant visual impact on views from designated scenic routes or any impact on the key scenic sensitivities and views of the County Clare high sensitivity 'Heritage Landscape'.

The likely significant visual effects arising from local residential amenity was assessed from four viewpoints in very close proximity to the Proposed Turbines (VP03, VP10, VP16 and VP17). Residual visual effects were found to be 'Moderate', which is appropriate and acceptable for a wind energy development of this scale and type, with the Proposed Turbines adhering to the Guidelines (DoEHLG, 2006) and Draft Guidelines (DoHPLG, 2019) with respect to best practice set back distances from residential visual amenity.

Cumulative effects on landscape character are included in the impact assessment outlined in Appendix 13-2. Overall, the LCA-17 – Sliabh Callan Uplands are found to be capable of accommodating the Proposed Turbines and cumulative turbines where its undulating characteristics provide physical and visual separation. Although the Proposed Turbines will slightly increase the extent of turbines visible within the landscape, from most perspectives surrounding the Proposed Wind Farm Site it will be viewed in conjunction with the existing Slievecallan Wind Farm. The Proposed Turbines when viewed cumulatively with existing and proposed wind energy developments in the vicinity and wider area consolidates the provision of wind energy infrastructure at this location which has been designated as a Strategic Area in the Wind Energy Strategy for the County. Landscape and visual effects were among the primary considerations of the Planning Authority in designating this location as a Strategic Area. This location has been identified by the Planning Authority as one of the most suitable and environmentally robust locations for the provision of wind energy in County Clare, consequently cumulative landscape and visual effects will occur and the Proposed Project will contribute to these cumulative effects. All of the various potential scenarios of cumulative landscape and visual effects likely to arise from different receptors and geographic perspectives have been comprehensively discussed in this LVIA with the aid of cumulative ZTV mapping and photomontage visualisations.

Overall, the LVIA in Chapter 13 determined that the Proposed Project is an appropriately designed development and suitably aligned with the Guidelines (DoEHLG, 2006) and Draft Guidelines (DoHPLG, 2019), sited in a landscape envisioned for wind energy development. The Proposed Turbines are located within a zoning designated as a 'Strategic Area' for wind energy development in Volume 6: Clare Wind Energy Strategy (CWES) of the CCDP with no potential significant effects on protected landscape and visual sensitivities in the LVIA Study Area.

Cultural Heritage

Chapter 14 of this EIR provides an assessment of the potential effects of the Proposed Project on the Cultural Heritage resource. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on desktop research, field survey, GIS based mapping, 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 any further geotechnical site investigations, and the implementation of an exclusion zone around stone circle CL031-052—. 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 10km, 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 was utilised to assess the level of theoretical visibility of the proposed turbines from cultural heritage assets within the 5km and 10km study areas. No significant visual effects as a result of the Proposed Project have been identified.

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

Chapter 15 of this EIAR provides an assessment of the traffic effects of the Proposed Project on the local highway network. 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 Foynes in County Limerick as follows;

- From the access road serving Foynes Port the route turns left (south) onto the N69 National Secondary Road at the existing priority junction.
- From this point the route heads east on the N69 for approximately 32kms, passing through various bends on the route.
- The route for turbine blade delivery then turns left off the N69 at the Dock Road West Roundabout to head north onto the N18/M18 for approximately 30km to Junction 12 of the M18.
 - For turbine tower sections, the route will continue east at the N69 Dock Road West roundabout along the R510 for approximately 3.4km, passing through the Greenpark Road roundabout before turning left at the Shannon Bridge Roundabout onto the R527.
 - The route continues along the R527 heading northwest through the Clonmacken Roundabout for approximately 4.1km before turning left at the Coonagh Roundabout onto the R445 for approximately 3.0km, passing

- through the Clondrinagh Roundabout, Phares Road Roundabout and L3112 Roundabout before joining the N18/M18 at Junction 4.
- At this point the route turns off the M18 onto the N85 National Road and heads west and then north bypassing the town of Ennis for approximately 7.3km passing through the Skehanagh Roundabout, the R458 Clareabbey Roundabout, the Rocky Road Roundabout, Beechpark Roundabout to the N85 Claureen Roundabout located northwest of Ennis.
 - From this roundabout the TDR heads west for approximately 13.7km on the N85 to Inagh.
 - The route then turns left in the village of Inagh heading west on the R460 for 4.3 kms before veering right onto the local L1074.
 - The routes continues westbound on the L1074 for 4.2 km before taking a left-hand bend on the L1076 and continuing in a southwest direction for a further 2.0 kms. At this point the route turns left onto the L6230 heading south for 0.3km. Access to the site is then gained by turning left onto an existing forest track heading in an eastern direction towards the site.

The abnormal loads will be delivered in convoys of 3 to 4 vehicles per night over 24 separate nights, with each convoy accompanied by a Garda escort.

All other construction related traffic will gain access to the Site via the Proposed Wind Farm Site access junction off the L6230, which will also be retained to provide access for maintenance staff once the Proposed Project is in operation..

The proposed 33kV underground cabling exits the Proposed Wind Farm Site, through forestry for approximately 0.83km, onto a farm track for 0.55km before entering the public road corridor on the R460. It stays within the public road corridor of the R460 for approximately 1.55km. For the section of underground cable connection that will be within the R460, the cable will be set within the curtilage of the R460 with a “Stop-and Go” traffic management system in place to retain alternate one-way traffic flow on the R460. On this section the grid connection will be installed by 2 teams, one operating at either end, with each team laying approximately 100 metres of cable per day, equating to a total of 200 metres per day. Traffic on the R460 will therefore experience minor delays on this section of the R460 for approximately 8 days.

The route then travels south for approximately 4.17 kms traveling through existing wind farm roads, forestry and agricultural land before reaching the proposed extension to the existing 100kV Slievecallan substation. On this section the route will require to cross one forestry access road.

Vehicle types and network geometry

The types of vehicles that will be required to negotiate the local network will be up to 81 metres long and will carry a blade 75m metres in length.

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

Traffic impact on local network

General construction + Proposed Grid Connection Site construction (71 days)

For these 71 days an additional 204 PCUs will travel on the study network. On these days, the percentage increase in traffic volumes experienced on the study network will be between +1.6% on the

N85 south of the Claureen Roundabout (Link 1) to +0.9% on the N85 to the west of the Roundabout (Link 2), to +2.7% on the N85 passing through Inagh (Link 3), to +5.5% on the R460 to the west of Inagh (Link 4). On these days traffic flows are forecast to increase by +49.9% on the L1074 approaching the Proposed Wind Farm Site (Link 5).

Concrete foundation pouring days (9 days)

On average an additional 598 PCUs will travel on the local highway network during these 9 days. This will result in a percentage increase in traffic volumes on the study network of between +4.6% on the N85 south of the Claureen Roundabout (Link 1) to +2.6% on the N85 to the west of the Claureen Roundabout (Link 2), to +7.8% on the N85 passing through Inagh (Link 3), to +16.2% on the R460 to the west of Inagh (Link 4). On these days traffic flows are forecast to increase by +146.3% on the L1074 approaching the Proposed Wind Farm Site (Link 5).

Turbine delivery (abnormally sized loads) (24 days)

The additional 130 PCUs (made up of cars and large extended artics) will travel on the study network for 24 nights. On the nights this impact occurs, volumes will increase by between +1.0% on the N85 south of the Claureen Roundabout (Link 1) to +0.6% on the N85 to the west of the Claureen Roundabout (link 2), to +1.7% on the N85 passing through Inagh (Link 3), to +3.5% on the R460 to the west of Inagh (Link 4). On these days traffic flows are forecast to increase by +31.8% on the L1074 approaching the Proposed Wind Farm Site (Link 5).

The most significant traffic impact may be experienced during these days primarily due to the slow speeds, size and geometric requirements of these vehicles. The provision of traffic management measures, including ensuring that these deliveries are made at night (as set out in Sections 15.1.8 and 15.1.13.5.2 and included in the CEMP), will be required to minimise the impact of development traffic on the study network on these days.

Turbine delivery (standard sized HGV) (9 days)

An additional 64 PCUs will travel on the study network for 9 days. On these days traffic volumes will increase by between +0.5% on the N85 south of the Claureen Roundabout (Link 1), +0.3% on the N85 to the west of the Claureen Roundabout (Link 2), to +0.8 on the N85 passing through Inagh (Link 3), to +1.7% on the R460 to the west of Inagh (Link 4). On these days traffic flows are forecast to increase by +15.7% on the L1074 approaching the Proposed Wind Farm Site (Link 5).

General construction only (270 days)

For a total of 270 days when general construction only takes place on the site an additional 91 PCUs will travel on the study network. On these days, the percentage increase on the study network will be between +0.7% on the N85 south of the Claureen Roundabout (Link 1), +0.4% on the N85 to the west of the Claureen Roundabout (Link 2), to +1.2 on the N85 passing through Inagh (Link 3), to +2.5% on the R460 to the west of Inagh (Link 4). On these days traffic flows are forecast to increase by +22.3% on the L1074 approaching the Proposed Wind Farm Site (Link 5).

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

15.2 **Telecommunications and Aviation**

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

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

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

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

There are no airports or aerodromes located within or adjacent to the Site. The nearest operational airport is Shannon Airport located approx. 31km southeast of the Proposed Wind Farm Site. This airport is outside the range at which such issues would be expected, furthermore, the Irish Aviation Authority noted no issues with the Proposed Project.

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

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

15.3 Other Material Assets

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

There is existing 110kV and 33kV underground cabling within the Proposed Grid Connection Site, which relate to the existing Slievacallan wind farm and 110kV. The proposed underground cabling connection has been routed to avoid impact on the existing underground cabling within the Proposed Grid Connection Site.

There is no gas lines located within the Proposed Wind Farm Site.

There are no known water mains within the site. Prior to construction, the Applicant will engage with ESB via the 'Dial Before You Dig' procedure online. ESB will be contacted via dig@esb.ie.

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

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

There will be no operational phase impacts or associated effects on built services or waste management associated with the Proposed Project. The Proposed Project will have an estimated installed capacity of 54MW which has potential to produce 170,294 MWh of electricity. This would be sufficient to supply approximately 49,056 Irish households with electricity per year during its operational phase. The Proposed Project will therefore have a positive, moderate, long-term effect on built services.

16

Major Accidents and Natural Disasters

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

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

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

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

The scenarios with the highest risk score in terms of the occurrence of major accident and/or disaster during construction, were identified as identified as 'Fire/Explosion', 'Peat Stability' and 'Contamination', during construction and decommissioning. The next highest score was 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).³

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

³ 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

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

17

Interaction of the Foregoing

Chapter 17 of this EIAR identifies the potential significant environmental effects that may occur in terms of Population & Human Health, Biodiversity, 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.