

# **Environmental Impact Assessment Report – Non-Technical Summary**

Proposed Sheskin Wind  
Farm Development, Co.  
Mayo.





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# NON-TECHNICAL SUMMARY

## Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by McCarthy Keville O’Sullivan Ltd. (MKO) on behalf of Sheskin South Renewables Power Designated Activity Company (DAC) , who intend to apply to An Bord Pleanála for planning permission for the construction of a wind energy development in Sheskin and adjacent townlands, near the village of Bangor Erris, Co. Mayo. The proposed development is being brought forward in response to local, national, regional and European policy regarding Ireland’s transition to a low carbon economy, associated climate change policy objectives and to reduce Ireland’s dependence on imported fossil fuels for the production of electricity.

The proposed wind energy development will encompass 21 No. wind turbines with blade tip height of 200 metres (m) above the top of the foundation. The application meets the threshold for wind energy set out in the Seventh Schedule of the Planning and Development Acts 2000 to 2022, on foot of a notice issued by An Bord Pleanála (the Board) on 9th August 2022 (see Section 1.2 of the EIAR below) is therefore being submitted directly to the Board, and is therefore being submitted directly to An Bord Pleanála as a Strategic Infrastructure Development (SID) in accordance with Section 37E of the Planning and Development Acts 2000, as amended.

This EIAR accompanies the planning application for the proposed development submitted to the Board. The planning application is also accompanied by a Natura Impact Statement (‘NIS’).

The proposed development is located within existing commercial forestry properties in the townlands of Sheskin, approximately 6 kilometres (km) east of the village of Bangor Erris, Co. Mayo. The site location context is shown in Figure 1-1a and Figure 1-1b.

The townlands within which the project (i.e. the main proposed wind farm site, the on-site substation the grid connection cabling route and turbine delivery route accommodation works) is located are listed in Table 1-1. All townlands are located in Co. Mayo.

Table 0-1 Townlands within which the project is located

Townlands within which the project is located:	
<b>Proposed Wind Farm Development</b>	
Sheskin	-
<b>Intended Wind Farm Substation Location and Grid Connection Cabling Route (not included in this application)</b>	
Sheskin	Tawnaghmore
Kilsallagh	Bellacorrick
<b>Turbine Delivery Route Accommodation Works (not included in this application)</b>	
Tawghnamore	Ballyglass East

## Applicant

The applicant, Sheskin South Renewable Energy DAC, is a joint venture between SSE Renewables and FuturEnergy Ireland.

## Need for the Proposed Development

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

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

## Economic Benefits

The Proposed Development will have several significant long-term and short-term benefits for the local economy including job creation, local authority commercial rate payments and a Community Benefit Scheme.

The annual commercial rate payments from the proposed development to Mayo County Council, will be redirected to the provision of public services within this county. These services include items 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 Development will create approximately 100-120 jobs during the construction phase and 2-3 jobs during the operational and maintenance phases of the proposed development. During construction, additional employment will be created in the region through the supply of services and materials to the development. In addition to this, there will also be income generated by local employment from the purchase of local services i.e., travel and lodgings.

Should the proposed development 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 €7 million will be made available over the lifetime of the project. The value of this fund will be directly proportional to the installed capacity and/or energy produced 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.

Further details on the proposed Community Gain proposals are presented in Section 4.5 of this EIAR.

## Purpose and Structure of this EIAR

The purpose of this EIAR is to document the current state of the environment in the vicinity of the proposed development site and to quantify the likely significant effects of the proposed development on the environment. The EIAR submitted by the applicant provides the relevant environmental information to enable the Environmental Impact Assessment (EIA) to be carried out by the competent authority, in this case An Bord Pleanála.

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 Development*
3. *Consideration of Reasonable Alternatives*
4. *Description of the Proposed Development*
5. *Population and Human Health*
6. *Biodiversity*
7. *Ornithology*
8. *Land, Soils and Geology*
9. *Hydrology and Hydrogeology*
10. *Air and Climate*
11. *Noise and Vibration*
12. *Landscape and Visual*
13. *Archaeological, Architectural and Cultural Heritage*
14. *Material Assets (including Traffic and Transport, Telecommunications and Aviation)*
15. *Vulnerability of the Project to Major Accidents Natural Disasters*
16. *Interactions of the Foregoing*
17. *Schedule of Mitigation and Monitoring Measures*

A Natura Impact Statement has also been prepared in line with the requirements of the Habitats Directive and will be submitted to the Planning Authority as part of the planning application documentation.

## Background to the Proposed Development

This section of the EIAR sets out the relevant Energy and Climate Change policy and targets, the strategic, regional, and local planning context for the Proposed Development, information relating to scoping and consultation, and the cumulative impact assessment process. A description of reasonable alternatives studied by the developer, relevant to the project including renewable energy technologies, turbine numbers, layout and design is included at Chapter 3 of this EIAR.

The policies and targets which have been put in place at the various levels of Government in relation to renewable energy and climate change illustrate the need for the Proposed Development to assist Ireland in meeting its national targets and European commitments in relation to climate change and decarbonisation.

The Proposed Development comprises the provision of a wind farm of 21 no. wind turbines (each with an expected generating capacity of c. 6-9MW of renewable energy) and provide renewable energy for use on the national grid. 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 Climate Action Plan (CAP) published by the Government in 2023 sets out the detail for taking action to achieve a 51% reduction in overall greenhouse gas emissions by 2030, and to reach net-zero emissions by no later than 2050. The 2023 Plan builds on the measures and technologies set out in the 2019 Climate Action Plan to deliver greater ambition. The greater ambition requires a greater range of measures under the 2023 Plan, reflected in two categories of ‘core measures’ and ‘further measures’. ‘Core measures’, set out to meet the 2030 targets, cover the fundamentals of decarbonisation and include the development of a renewable energy electricity supply. These ‘core measures’ are not, by themselves, sufficient to deliver the ambitions set out in the CAP and so a series of ‘further measures’ will also be necessary which are more technically challenging or not yet available in Ireland at the scale required, e.g. Biogas/biomethane, green hydrogen, carbon capture and storage. While deploying all the core measures would reduce emissions by 10-11 MtCO<sub>2</sub>eq. by 2030, undertaking further measures could close the gap. All sectors will have to further their efforts from those outlined in the CAP if the core and further measures are to be achieved.

More recently, the National Energy Security Framework (DECC, April 2022) highlights clearly the impacts the Russian invasion of Ukraine and the resulting war has had on Europe’s energy system. The resulting decision by the European Union to phase out the import of Russian gas, oil and coal has brought to the fore the importance of security of supply and how energy policy is designed for long-term resilience. It takes account of the need to decarbonise society and economy, to reduce Ireland’s emissions by 51% over the decade to 2030 and reach net zero emissions by 2050. According to the SEAI’s Energy in Ireland (2020) report, oil accounts for 54% of Ireland’s primary energy requirement making it one of the highest rate of oil dependency in the EU. The International Energy Agency, of which Ireland is a member country, includes a 10-point plan to cut oil use which calls for an acceleration in the deployment of wind and solar projects. Ireland’s response per the Framework is set out over three themes:

- Theme 1 – managing the impact on consumers and businesses
- Theme 2 – ensuring security of energy supply in the near-term
- Theme 3 – reducing our dependency on imported fossil fuels in the context of the phasing out of Russian energy imports across the EU

In relation to theme 3 the Framework highlights that replacing fossil fuels with renewables, including wind energy, will be a focus area of work. The Framework calls for “Supportive policies across Government and State agencies” which “can reduce barriers and fast track permitting for renewable energy generation projects. Similarly, renewable energy developers need to match this through taking a leadership role in delivering high quality applications to relevant consenting authorities, meeting project milestones on time and minimising delays.” Response 25 set out is in relation to the alignment of all elements of the planning system to support accelerated renewable energy development.

The primary driver behind the Proposed Development is the need to provide additional renewable energy to offset the use of fossil fuels within the electricity generating sector. Increasing electricity generation from wind power represents the most economical renewable option to reduce emissions within the power generation sector and is the most mature technology available to achieve national targets that have been established for decarbonisation.

### Energy and Climate Change Targets

Relevant to the Proposed Development, the Climate Action Plan 2023 (‘the CAP’) launched in December 2022, sets out a roadmap to delivery on Ireland’s climate ambition. The Climate Action and Low Carbon Development (Amendment) Act 2022 commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030. At the time of publication (December 2022), the key sources of Ireland’s greenhouse gas (GHG) emissions include agriculture (33.3%), transport (15.7%) and energy (14.4%). Current and future actions require “*the full implementation of measures from Climate Action Plans 2023, and further future Climate Action Plans.*”

In relation to the generation of electricity, the CAP emphasis the continued role of onshore wind in addressing the decarbonisation of the electricity sector. Under the CAP onshore wind targets of 6GW by 2025 and 9GW by 2030 is set out. An increase in the deployment of renewable energy generation, transformational policies, measures and actions are all called for in the CAP. Achieving further emissions reductions between now and 2030 requires a “*major step up*” across three key measures as follows:

- *Accelerate and increase the deployment of renewable energy to replace fossil fuels;*
- *Deliver a flexible system to support renewables and demand;*
- *Manage electricity demand.*

The CAP acknowledges that “*Ireland accommodates one of the highest global percentages of variable renewable generation on the grid. However, to maximise the output of renewables, the electricity system must increase its flexibility further.*”

## Local policy

The site of the Proposed Development is entirely within the administrative area of Mayo County Council. As such the recently adopted Mayo County Development Plan (the Development Plan) 2022-2028 is the relevant local planning policy framework.

The Development Plan recognises the importance of addressing climate change. The policies and objectives set out within the Development Plan have maintained strong linkages with the key aims and themes set out within the previous development plan. Climate change is again emphasised as one of the greatest global challenges with Mayo County Council acknowledging that continual action is needed for Mayo to become a low carbon and climate resilient county. In the context of wind energy, the Development Plan states that the county has “*enormous wind resource with the potential to underpin an entire new economy in the county*” as evident by its current wind energy generation capacity of 266MW (Q1 2020), which is c. 6% of Ireland’s overall wind energy production.

A portion of the Proposed Development site (i.e., 16 turbines) is located within Tier 2 lands, which have been classed as being ‘Open for Consideration’ for the provision of wind turbines within the Mayo Renewable Energy Strategy 2011-2020 (the RES). The areas of the proposed site that are located outside of the Tier-2 area are ‘unclassified’. These lands however, share the same characteristics as the portion within the classified lands and also conform to the suitability factors set out in the Development Plan. A detailed constraints analysis was carried out as part of the design process and a justification for locating turbines in these areas is provided in Chapter 2 of the EIAR.

## 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) have been taken into account during the preparation of this EIAR.

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

Each wind project has its own characteristics and defining features, and it is therefore impossible to write specifications for universal use. Guidelines should be applied practically and do not replace existing national energy, environmental and planning policy. While the 2006 Guidelines remain the relevant guidelines in place at the time of lodgement, and decision makers (Planning Authorities and ABP) are required to have regard to them, they are not bound to apply their provisions and they can (and do), where there is sufficient justification, consider updated standards/requirements/specifications in assessing impacts and the proper planning and sustainable development of the area.

## Planning History

The relevant planning history of the Proposed Development site, the planning applications in the vicinity of the site along with other wind energy applications within the wider area are set out in Chapter 2 of the EIAR.

## Scoping and Consultation

Scoping is the process of determining the content, depth and extent of topics to be covered in the environmental information to be submitted to a competent authority for projects that are subject to an Environmental Impact Assessment. This process is conducted by contacting the relevant authorities and



Non-Governmental Organisations (NGOs) with interest in the specific aspects of the environment with the potential to be affected by the proposal. These organisations are invited to submit comments on the scope of the EIAR and the specific standards of information they require. Comprehensive and timely scoping helps ensure that the EIAR refers to all relevant aspects of the subject development and its potential effects on the environment and provides initial feedback in the early stages of the project, when alterations are still easily incorporated into the design. In this way scoping not only informs the content and scope of the EIAR, it also provides a feedback mechanism for the proposal design itself.

A scoping report, providing details of the application site and the subject grid connection, was prepared by MKO and circulated in March 2021 to relevant parties. The scoping report issued provided information on the topics below and is included in this EIAR.

- Description of the Proposed Development Site, including Site Location and Access, Land-Use, Designated Areas and Landscape Policy;
- Planning Context;
- Site Selection;
- Description of the Proposed Development; and
- Scope of the EIAR and Natura Impact Assessment

MKO requested the comments of the relevant personnel/bodies in their respective capacities as consultees with regards to the EIA process. Details of that scoping progress can be found at Section 2.6 of this EIAR.

Scoping responses received are set out in Appendix 2-1 of this EIAR. The recommendations of the consultees have informed the EIAR preparation process and contents of same.

### Cumulative Impact Assessment

To gather a comprehensive view of cumulative impacts on these above environmental considerations and to inform the EIA process being undertaken by the consenting authority, each relevant chapter within the EIAR addresses the potential for cumulative effects where appropriate. Chapter 2 sets out the approach taken in relation to the methodology for the cumulative impact assessment of the Proposed Development and other relevant developments other projects.

The cumulative impact assessment of projects has three principle aims:

- To establish the range and nature of existing and/or approved projects within the cumulative impact study area of the Proposed Development.
- To summarise the relevant projects which have a potential to create cumulative impacts.
- To identify the projects that hold the potential for cumulative interaction within the context of the Proposed Development, and discard projects that will neither directly or indirectly contribute to cumulative impacts.

Assessment material for the cumulative impact assessments carried out within this EIAR was compiled in relation to the relevant developments within the various zones of sensitivity of, and to, the Proposed Development from which there may be potential for cumulative impacts to arise. The material was gathered through a search of relevant online planning registers, reviews of relevant EIS/EIAR documents, planning application details and planning drawings, and served to identify past and future projects, their activities and their environmental impacts.

## Consideration of Reasonable Alternatives

This chapter of the EIAR includes a description of the reasonable alternatives studied by the developer which are relevant to the 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 Scenario' i.e. an outline of what is likely to happen to the environment should the Project not be implemented, should also be included.

The applicant undertook a detailed screening process, through Geographical Information Spatial software (GIS), using a number of criteria and stages to assess the potential of a large number of possible sites, on lands within its stewardship (c. 441,000 hectares), suitable to accommodate a wind energy development. The GIS database drew upon a wide array of key spatial datasets such as forestry data, ordnance survey land data, house location data, transport, existing wind energy and grid infrastructure data and environmental data such as ecological designations, landscape designations and wind energy strategy designations available at the time. The application of the above criteria to identify a site relevant to the project and its specific characteristics, resulted in the selection of a site known as Sheskin South, located near Bangor Erris in Co. Mayo as a candidate site to be brought forward for more detailed analysis.

Although the screening exercise was based on identifying lands for wind development; a reasonable alternative source of renewable electricity generation, namely solar, was considered based on the scale and current land-use of the Sheskin South site that emerged. A wind energy development was considered to be the most efficient method of electricity production at this site. A solar array development would have a higher potential environmental effect on Hydrology and Hydrogeology, Traffic and Transport (construction phase) and Biodiversity and Birds (habitat loss, glint and glare) at the site.

The design of the proposed development has been an informed and collaborative process from the outset, involving the designers, developers, engineers, environmental, hydrological and geotechnical, archaeological specialists and traffic consultants. The design process has also taken account of the recommendations and comments of the relevant statutory and non-statutory organisations, near neighbours / the local community and local authorities as detailed in Sections 2.6 and 2.7 of this EIAR. The aim of the process being to reduce the potential for environmental effects while designing a project capable of being constructed and viable.

The final proposed turbine layout takes account of all site constraints and the distances to be maintained between turbines and from houses, roads, etc. The layout is based on a combination of the results of all site investigations and surveys that have been carried out during the EIAR process, the community engagement process that began in September 2020 (e.g., landscape and visual sensitivities of nearby residents was taken into consideration) and the scoping with statutory and non-statutory consultees. As information regarding the site of the proposed development was compiled and assessed, the proposed layout has been revised and amended to take account of the physical constraints of the site and the requirement for buffer zones and availability of land as well as cumulative impacts.

It was decided at an early stage during the design of the proposed development that maximum possible use would be made of existing roadways and tracks, where available and where possible, to minimise the potential for impacts by using new roads as an alternative. An alternative option of constructing an entirely new road network, having no regard to existing roads or tracks was not favourable, as it would create the potential for additional significant environmental effects to occur in relation to land, soils and geology (increased excavation and aggregate requirements), hydrology (increased number of new watercourse crossings) and biodiversity (increased habitat loss).

The use of multiple temporary construction compounds was deemed preferable to the alternative of a single large compound at the site for a number of reasons. Principally, it will facilitate more efficient

construction practices and will result in shorter distances for traffic movements within the site during construction. As a result, vehicle emissions and the potential for dust arising will be reduced.

One alternative substation location was considered at a very early stage of the design of the proposed development, as shown in Figure 3-5 of the EIAR. This alternative location was more located in the northern part of the site and it would have led to an increase in the length of grid connection cabling to the nearest existing substations.

While overhead lines are less expensive and allow for easier repairs when required, underground lines will have no visual impact. For this reason, it was considered that underground lines would be a preferable alternative to overhead lines. The proposed underground grid connection route was one of two grid connection routes considered at the outset of the design process of the proposed development. The chosen underground grid connection route to the existing Bellacorick substation was chosen due to the significantly shorter distance compared to the alternative route to Tawnaghmore substation near Killala and that it runs along existing roads for its entire length.

The proposed borrow pit locations were selected due to the presence of competent or usable rock at an acceptable level below existing surface level. Developing borrow pits at the alternative locations that were subject to site investigations, would result in a significant increase in the volumes of peat and spoil to be excavated in order to access the usable rock underneath and therefore much higher volumes of excavated material that would need to be managed onsite. The excavation of such increased volumes of peat and spoil has the potential to lead to adverse environmental effects in relation to peat instability and dust emissions.

The chosen Port of Entry considered for the Proposed Development is Galway Port. The alternative considered for the port of entry of wind turbines for the Proposed Development was Killybegs Harbour in Donegal due to its similar proximity to the site. Both ports have been considered for this project given that they are the closest commercial ports to the site of the Proposed Development, however, others in the State (including Dublin, Cork and Shannon-Foynes), offer potential for the importing of turbine components and therefore are also viable alternatives.

An assessment of two site access route options was carried out, taking account of criteria such as third-party land requirements, existing road upgrade and new road construction requirements and associated environmental effects. The proposed site access route between Galway Port and the site was the chosen option as it required less accommodation /widening works than the alternative route from Killybegs Harbour. Therefore, there is reduced potential effects in relation to impacts for other road users.

## Description of the Proposed Development

The overall layout of the proposed development is shown on Figure 4-1a and Figure 4-1b in Chapter 4 of the EIAR. This drawing shows the proposed locations of the wind turbines, electricity substation, construction compounds, internal roads layout and the site entrances. Detailed site layout drawings of the proposed development are included in Appendix 4-1 to this EIAR.

The proposed wind turbine layout has been optimised using industry standard wind farm design software to maximise the energy yield from the site, while maintaining sufficient distances between the proposed turbines to ensure turbulence and wake effects do not compromise turbine performance.

The proposed wind farm development comprises the construction of 21 No. wind turbines and all associated works. The proposed turbines will have a blade tip height of 200 metres above the top of the foundation. The applicant is seeking a ten-year planning permission. The full description of the proposed wind farm development, as per the public planning notices, is as follows:

1. *Construction of 21 no. wind turbines and associated hardstand areas with the following parameters:*
  - a. *A total tip height of 200 metres,*
  - b. *Hub height of 115 metres, and*
  - c. *Rotor diameter of 170 metres*
2. *All associated underground electrical and communications cabling;*
3. *1 no. Meteorological Mast of 115 metres in height, and associated hardstanding area;*
4. *Upgrade of existing tracks and roads, provision of new permanent site access roads, upgrade of 2 no. existing site entrances, construction of 1 no. new site entrance;*
5. *2 no. borrow pits;*
6. *12 no. permanent peat placement areas;*
7. *4 no. temporary construction compounds with temporary site offices and staff facilities;*
8. *Permanent recreation and amenity works, including marked trails, seating areas, viewing point, amenity car park, and associated amenity signage;*
9. *Site Drainage;*
10. *Site Signage;*
11. *Ancillary Forestry Felling to facilitate construction and operation of the proposed development;*
12. *All works associated with the habitat enhancement and biodiversity management within the wind farm site; and*
13. *All associated site development works and ancillary infrastructure.*

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

Current and future wind turbine generator technology will ensure that the wind turbine model, chosen for the proposed development, will have an operational lifespan greater than the 35 year operational life that is being sought as part of this application.

For assessment purposes, it has been assumed that each of the proposed turbines will have a minimum output of 6MW and a maximum output of 9MW. It is likely that future wind turbine generator technology will facilitate greater outputs from turbines of the dimensions proposed as part of this application.

The layout of the proposed development has been led by consideration of constraints and facilitators, thereby avoiding the environmentally sensitive parts of the site. The roads layout for the proposed development maximises the use of the existing onsite access roads and tracks where possible, with approximately 7.8 kilometres of existing roadway/ tracks requiring upgrading and approximately 14.2 kilometres of new access road to be constructed.

The EIAR Site Boundary for the proposed development encompasses an area of approximately 1,189 hectares, the majority of which comprises commercial forestry plantation. The permanent footprint of the proposed development measures approximately 24.2 hectares, which represents approximately 1.9% of the primary study area.

It is intended to construct a 110 kV substation within the site and to connect this to the existing Bellacorick 110kV substation, located 5km southeast of the intended on-site substation location, in the townland of Bellacorick. The intended grid connection route will be via underground cabling located within existing forestry tracks, local county roads and national secondary roads. The cabling route measures approximately 6.9km in total. The construction of the grid connection cabling route will, in

the event that planning consent is granted, be undertaken by a statutory undertaker having a right or interest to provide services in connection with the proposed wind farm development.

The majority of the area encompassed by the EIAR Site Boundary is currently used for commercial forestry, a small proportion of which will be felled to accommodate the wind farm development. A total area of approximately 117 hectares of commercial forestry will require replacement elsewhere in the State, subject to licence. Details regarding the area to be felled are outlined in Chapter 4 of this EIAR.

The overall project, including wind farm, grid connection, abnormal load delivery route works and forestry felling have been assessed as part of this EIAR and is collectively referred to as the “Proposed Development” throughout.

A minimum separation distance of 1.34km between residential dwellings and the proposed wind turbines has been achieved with the project design. The proposed development is described in detail in Chapter 4 of this EIAR.

In addition to the economic benefits of the proposed development, there will be potential social and recreational benefits associated with the recreational and amenity proposals that will form part of the project. The proposed development and all its associated infrastructure creates a unique opportunity to develop an amenity area for use by members of the local and wider community alike. The upland nature of the site is attractive to both locals and visitors to the area. It is proposed to develop some recreational walks as part of the Sheskin Wind Farm project. These proposed walks will utilise existing forest tracks and new wind farm roads. The proposed amenity facilities will allow for a safer and improved visitor experience and allow the site to be more openly available to walkers, trail runners, cyclists and other recreational users, as outlined in Section 4.6 of Chapter 4 of this EIAR.

The protection of the watercourses within and surrounding the site, and downstream catchments that they feed is of utmost importance in considering the most appropriate drainage proposals for the site of the proposed development. The proposed development drainage design has therefore been proposed specifically with the intention of having no negative impact on the water quality of the site and its associated rivers and lakes, and consequently no impact on downstream catchments and ecological ecosystems. No routes of any natural drainage features will be altered as part of the proposed development and turbine locations and associated new roadways have been selected to avoid natural watercourses, and existing roads are to be used wherever possible. There will be no direct discharges to any natural watercourses, with all drainage waters being dispersed as overland flows. All discharges from the proposed works areas will be made over vegetation filters at an appropriate distance from natural watercourses. Buffer zones around the existing natural drainage features have been used to inform the layout of the proposed development.

It is estimated that the construction phase will take approximately 18 to 24 months from starting onsite to the full commissioning of the wind farm. The construction phase can be broken down into three main phases, 1) civil engineering works: 9 months, 2) electrical works: 6 months, and 3) turbine erection and commissioning: 3 months.

During the operational phase, each turbine will be subject to a routine maintenance programme involving a number of checks and changing of consumables, including oil changes. In addition, there will be a requirement for unscheduled maintenance, which could vary between resetting alarms to major component changes requiring a crane. Typically, maintenance traffic will consist of four-wheel drive vehicles or vans. The electricity substation and site tracks will also require periodic maintenance.

The wind turbines proposed as part of the proposed development are expected to have a lifespan of approximately 35 years. Following the end of their useful life, the wind turbines may be replaced with a new set of turbines, subject to planning permission being obtained, or the proposed development may be decommissioned. The onsite substation will remain in place as it will be under the ownership of the ESB/Eirgrid.

## Population and Human Health

One of the principal concerns in the development process is that individuals or communities, should experience no significant diminution in their quality of life from the direct, indirect or cumulative effects arising from the construction, operation and decommissioning of a development. Ultimately, the impacts of a development have the potential to impinge on human health, directly and indirectly, positively and negatively. The key issues examined in this chapter of the EIAR include population, human health, encompassing employment and economic activity, land-use, residential amenity (noise, visuals, setbacks), community facilities and services, tourism, property values, shadow flicker and health and safety.

As stated above, approximately 100 – 120 jobs could be created during the construction, operation and maintenance phases of the proposed development with most construction workers and materials sourced locally, thereby helping to sustain employment in the construction trade. This will have a Short-Term Significant Positive Impact.

There is currently no published credible scientific evidence to positively link wind turbines with adverse health effects. The main publications supporting the view that there is no evidence of any direct link between wind turbines and health are summarised in Chapter 5 of this EIAR. Although there have been no empirical studies carried out in Ireland on the effects of wind farms on property prices, it is a reasonable assumption based on the available international literature that the provision of a wind farm at the proposed location would not impact on the property values in the area.

Shadow flicker is an effect that occurs when rotating wind turbine blades cast shadows over a window in a nearby property. Shadow flicker 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 effect lasts only for a short period of time and happens only in certain specific combined circumstances. Current guidelines 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.

The potential flicker that will occur at houses located within the area surrounding the proposed development was calculated using the WindFarm software package and a regional sun factor was applied. Of the 13 No. residential properties modelled, it is predicted that 1 No. property may experience daily shadow flicker in excess of the 2006 DoEHLG guideline threshold of 30 minutes per day. However, this prediction does not consider wind direction or screening provided by intervening vegetation and topography.

Where shadow flicker exceedances are experienced, suitable mitigation measures as outlined in Chapter 5 will be employed at the potentially affected properties to ensure that the current adopted 2006 DoEHLG guidelines are complied with at any dwelling within the 1km study area. The same mitigation strategies also demonstrate that the Proposed Development can be brought in line with the shadow flicker requirements of the Draft Revised Wind Energy Development Guidelines (2019) should they be adopted while this application is in the planning system.

Impacts on human beings during the construction and operational phases of the proposed development 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 was identified, the appropriate mitigation measures will be put in place to ensure that there will be No Adverse Impacts on human health in the surrounding area.

Following consideration of the residual effects (post-mitigation), the proposed development will not result in any significant effects on population and human health. Provided that the proposed wind farm development is constructed and operated in accordance with the design, best practice and mitigation

that is described within this application, significant effects on population and human health are not anticipated at international, national or county or local scale.

## Biodiversity

This chapter assesses the likely significant effects (both alone and cumulatively with other projects) that the proposed development 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.

Multidisciplinary walkover surveys and detailed botanical surveys were undertaken on the 4th August 2021, 10th August 2021, 18th August 2021, 2nd September 2021, 24th September 2021, 18th January 2022, 21st January 2022, 24th November 2022 and the 6th December 2022. The survey timings were targeted to generally fall within the recognised optimum period for vegetation surveys/habitat mapping, i.e. April to September (Smith et al., 2011), as well as to carry out targeted protected species surveys. A comprehensive walkover of the entire site was completed.

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

The majority of habitats within the EIAR Site Boundary (964 hectares/81%) is dominated by plantation forestry (including clear fells), comprising mainly of Lodgepole pine (*Pinus contorta*) with some Sitka spruce (*Picea sitchensis*) planted on Lowland Blanket Bog (PB3). Remnants of this habitat are still found on the site in degraded form. The site is accessible via the Western Way and a network of existing forestry access tracks and forestry rides. The Proposed Development site is surrounded by Lowland Blanket Bog (PB3) to the north, west and south. Within the EIAR Site Boundary, this habitat is confined to the north-western corner of the site, and another small area is found on sloping ground between a watercourse and one of the existing roads. The construction of the proposed windfarm and associated infrastructure will not result in the loss of any bog habitat. It is proposed to enhance the existing peatland habitat in the northwest of the site (approximately 24.1ha) through drain blocking and the removal of encroaching conifers (establishing as a result of natural seed dispersal). This is fully described in the site-specific Biodiversity Management Plan (BMP) accompanying this application. The BMP also includes for the removal of Rhododendron from a number of areas within in the site boundary.

In general, given the highly modified nature of the site, dominated by commercial coniferous forestry (WD4), limited suitable habitat occurs on site for protected faunal species. Signs of badgers activity was recorded during the surveys undertaken; however no active badger setts were recorded within the EIAR study area boundary. Evidence of fox and otter was also recorded within the site. In addition, detailed bat and aquatic invertebrate assessments have been undertaken as part of the detailed baseline assessment. The detailed results of which are provided in technical appendices to this EIAR. No evidence of populations of these species being significant at more than a local level was recorded. No signs of any additional protected fauna were recorded within the study area during the field surveys.

No significant effects on surface water quality, groundwater quality or the hydrological/hydrogeological regime were identified during either construction nor operation.

Provided that the proposed development is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant residual impacts on ecology are not anticipated.

## Ornithology

Malachy Walsh and Partners were commissioned by SSE Renewables Ireland Limited to prepare a **Bird Impact Assessment Report** (BIAR) for the Sheskin South Wind Farm project (the “Proposed Development”) which has been included as **Appendix 7-1** of this EIAR.

This summary provides an overview of the potential effects associated with the Proposed Development on ornithological features present at the proposed Sheskin South Wind Farm development. Field surveys were completed in order to determine the current breeding and non-breeding assemblage within the study area, and were undertaken between 2019 and 2022.

The site itself is a commercial conifer plantation and as such does not contain particularly sensitive habitats or key populations of vulnerable bird species, taking account of publicly available bird sensitivity mapping and records, data supplied by NPWS and the results of the bird surveys undertaken.

The most notable species recorded on site included kestrel, sparrowhawk, merlin, hen harrier and snipe. Further notable species, such as golden plover, dunlin, red grouse and woodcock, were recorded in the wider environ of the site, within 2km. Though out with the site, any potential impacts on ornithological interests in proximity to the site must also be considered.

The habitats present on site are potentially suitable for breeding raptor species such as kestrel and merlin. The wider environs offer further raptor breeding opportunities. Moreover, out-with the site there are potential breeding opportunities for wader species such as golden plover, dunlin and snipe and gamebirds such as red grouse.

The site itself is not subject to any nature conservation designations. The Owenduff/Nephin Complex Special Protection Area (SPA) however is located 1.6 km from the site boundary. Merlin and golden plover are selected as special conservation interests within the SPA. Breeding golden plover and dunlin are also known to be present within the Slieve Fyagh Bog Special Area of Conservation (SAC), which is located immediately west of the proposed development site. Golden plover, dunlin and snipe were recorded breeding on the bog to the west of the site in 2022. Golden plover and dunlin were not recorded flying over the proposed development site. A low level of snipe flight activity was recorded.

Potential effects on species were assessed within both an EIA context and an AA context, due to the potential connectivity with birds which are qualifying features of SPAs. There will however be no direct impacts on protected areas such as SPAs and SACs. The NIS concluded that the integrity of the SPAs and SACs will not be adversely affected in view of the sites’ conservation objectives.

The ornithological assessment identified habitat loss and disturbance during the construction and decommissioning phases, and displacement and collision risk effects during the operational phase, as potential impacts.

Unmitigated effects from construction activities on ornithological features were assessed as potentially significant during the breeding season for some birds of prey (sparrowhawk, merlin and kestrel) and some upland breeding species (red grouse, golden plover, dunlin and snipe) owing to disturbance. Unmitigated effects from operational activities on ornithological features were assessed as not significant for the bird of prey species, hen harrier, sparrowhawk, merlin and kestrel, and the upland species golden plover, red grouse and snipe with regard to potential displacement effects. Unmitigated displacement effects during operation were assessed as slight for dunlin.

The collision risks are low due to several factors related to bird species, numbers, and avoidance behaviour. Impacts due to potential collision risk range from slight (sparrowhawk, kestrel, and snipe) to imperceptible (merlin).



The cumulative effect of the Proposed Development and the projects listed in Section 2.8 of the EIAR was assessed. No significant effects on birds are predicted with regard to cumulative impacts of the site. It is anticipated that any potentially adverse effects may be mitigated by design and mitigation measures included in the BIAR. To that end, a Project Ornithologist with appropriate expertise and long-term ornithological experience will oversee pre-construction and construction phase bird surveys at the site, including the monitoring of breeding merlin (as a priority), other raptors and upland breeding species. All construction activities will be conducted in accordance with a Construction Environmental Management Plan (CEMP). Bird surveys will continue during the operational phase at locations used pre-construction.

With the avoidance measures (design phase), and full implementation of mitigation measures throughout the construction phase, operational phase, and decommissioning phase of the project, significant residual effects on birds are not expected.

## Land, Soils and Geology

The Quaternary Geology (Figure 8-1) underlying the site predominantly comprises blanket peat with areas of localised areas of till derived from Devonian and Carboniferous sandstones in the centre of the site.

Peat depths recorded across the site by Fehily Timoney and MKO varied from 0.3m to 5.7m, with an average of 2.2m.

The Geological Survey of Ireland (GSI) 1:100,000 scale bedrock geology map (Figure 8-2) shows that the proposed Sheskin South Wind Farm development site is underlain by the Downpatrick Formation and the Minnaun Sandstone Formation.

Intrusive investigations were undertaken at the proposed borrow pit locations, at selected proposed turbine locations, and along the proposed access tracks. The purpose of the intrusive works was to confirm the geological succession underlying the site. The site investigations comprised the excavation of 12 no. trial pits to a maximum depth of 4.1m bgl.

The findings of the peat stability assessment showed that the proposed development has an acceptable margin of safety and is suitable for the proposed wind farm development. The findings include specific control measures (Section 13 of Appendix 8-1 of this EIAR) for construction work in peatlands to ensure that all works adhere to an acceptable standard of safety.

An analysis of peat stability was carried out at the turbine locations, roads, substation compound, construction compounds, borrow pits and met mast for both the undrained and drained conditions. The purpose of the analysis was to determine the Factor of Safety (FoS) of the proposed peat slopes during construction and operation.

An undrained analysis was carried out, which applies in the short-term during construction. For the undrained condition, the calculated FoS for load conditions (1) & (2) for the locations analysed, show that all locations have an acceptable FoS of greater than 1.3, indicating a low risk of peat failure. The undrained analysis would be considered the most critical condition for the peat slopes.

The peat stability risk assessment at each infrastructure location (as listed above) identified a number of specific mitigation/control measures to reduce the potential risk of peat failure. Sections of access roads to the nearest infrastructure element will be subject to the same mitigation/control measures that apply to the nearest infrastructure element.

In summary, the findings of the peat stability assessment showed that the site has an acceptable margin of safety, is suitable for the proposed wind farm development and is at low risk of peat failure. The findings include control measures for construction work in peatlands to ensure that all works adhere to an acceptable standard of safety.

Construction of the wind farm infrastructure will require the removal of peat, soil and rock to competent foundation. Excavation of bedrock from the proposed on-site borrow pit will provide material for access road, turbine bases and general hard-standing construction. Removal of soil, peat and bedrock represents a permanent direct impact on the geology of the site which is considered to be an acceptable part of economic progression and development.

During the construction phase sources of contaminants (such as oil based substances or other hazardous chemicals) will not be stored at the site except where this is done within safely banded areas that safely contain all spillages and prevent the migration of contaminants into soil, peat and bedrock. Refuelling will be done with a double skinned bowser with spill kits on the ready in case of accidental spillages. The risk is considered to be low once mitigation measures are implemented.

A Peat Management Plan has been prepared for the development which details management of peat during construction works and long term storage thereafter. Peat removed during the excavation works will be deposited in the proposed on-site borrow pit and peat repository.

The potential residual impacts associated with soil or ground contamination and subsequent health effects are negligible.

No significant impacts on land, soil and geological environmental are anticipated during the construction, operation or decommissioning phases of the Proposed Development.

The geological impact assessment undertaken in this chapter outlines that significant effects will not occur due to the localised nature of the construction works and therefore there is no potential for cumulative effects.

## Hydrology and Hydrogeology

CDM Smith was engaged by MKO to undertake an assessment of the potential direct, indirect and cumulative effects of the Proposed Development on water aspects (hydrology and hydrogeology) of the receiving environment.

The Proposed Development is located in an upland bog setting, in a headwater subcatchment of the Owenmore River in Hydrometric Area 33. The streams that flow through Wind Farm site drain as Sheskin River in an easterly direction before merging with the Oweninny River in the townland of Shranakilly to the north of Bellacorick. From the merger, flow continues as the Owenmore River, past Bellacorick and Bangor Erris to Tullaghan Bay on the sea, which is more than 30 km to the west.

The EPA considers Sheskin River a 'High' status water body based on the combined consideration of water quality data and biological survey data. 'High' status water bodies are prioritised for protection as part of Water Framework Directive implementation in Ireland.

For this reason, the Wind Farm development is proposing measures that will ensure that the quality of surface water and aquatic habitat will be maintained.

This will be accomplished by constructing and operating a carefully planned and designed drainage management system which protects surface water from effects of potential pollution.

The principal risks to water quality and associated aquatic habitats are associated with earthworks and drainage during the construction phase. To limit risk, mitigation measures are proposed which are proven from other wind farm sites and considered 'best practice' for wind farm developments. Mitigation involves constructing a comprehensive drainage management system which intercepts pathways between potential sources of pollution (works areas) and receptors (streams). For this purpose, a drainage management system has been designed and related plans have been developed which will integrate new drainage with existing drainage in Sheskin Forest, and which will maintain the

hydrological balance of rainfall-runoff within the development area. This also serves to address flood risk, which is low. It is noted that Sheskin Forest is commercially operated and already extensively drained as part of ongoing forestry operations. The drains serve to lead runoff from plantations to local streams.

Because Wind Farms involve near surface installations, potential effects on groundwater at the site are negligible, with few risks to groundwater resources. Surface water is the main receptor and is, therefore, the focus of the assessment of likely significant effects.

In addition to earthworks and drainage, there are other pollution risks to consider, such as potential spills and leaks of fuels and oils from machinery and equipment. These are common to any construction site, not just wind farms. All potential pollution sources will be carefully managed during construction, operations and decommissioning based on proven best practice methods.

To address identified risks, a wide range of drainage and pollution control measures, as well as other preventative measures, have been incorporated into the project design to protect surface water from significant adverse effects on water quality. All measures are incorporated in a construction and environmental management plan and a surface water management plan which are appended with the EIAR and will become part of contracts in the future, pending the outcome of planning application process.

The Wind Farm site borders three Special Areas of Conservation (SAC). Two of these, the Slieve Fyagh Bog Complex SAC and the Glenamoy Bog Complex SAC, are located upslope from the Wind Farm. For this reason, water courses in these SACs cannot be polluted by Wind Farm related activity. The third SAC is the Carrowmore Lake Complex SAC which borders the Wind Farm site in the southern part of Sheskin Forest. Water that drains out from this SAC forms small tributary streams which cross the planned grid connection route between the Wind Farm site and the planned grid connection point at Bellacorick. The grid connection route passes east of the SAC and does not infringe on the SAC. It is also located downslope from the SAC which means that construction works cannot affect the water courses within the SAC.

One other SAC was considered, the Bellacorick Bog Complex SAC, This borders the Owenmore River to the east but is not directly hydrologically or hydrogeologically linked to the Wind Farm site. Potential indirect pathways between Sheskin River and the SAC were considered in the assessment, and it was found that no likely significant effects on the SAC will occur from the Wind Farm site.

The assessment also considered potential effects on the WFD status classification of the Sheskin and Owenmore Rivers. With the proposed drainage management system and the other proposed mitigation measures, it was concluded that likely significant effects are not expected to occur on surface water quality generally and WFD status specifically. The same is true for groundwater.

There is, however, a potential future scenario in which the Wind Farm site, in combination with the existing Oweninny Phase 2 wind farm and a second proposed wind farm (ABO Sheskin) in the northern part of Sheskin Forest can result in cumulative effects on Sheskin River (and by extension, Owenmore River). For this reason, a monitoring programme is proposed which will track potential shifts in current, documented baseline conditions, as a way of identifying and addressing potential cumulative effects at a later stage. The monitoring programme is also relevant to be able to detect shifts in baseline conditions from climate change since the operational phase is 35 years, which can be factor in the review of cumulative effects.

## Air and Climate

This chapter identifies, describes and assesses the potential significant direct and indirect effects on air quality and climate arising from the construction, operation and decommissioning of the proposed development.

The Environmental Protection Agency (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 with 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 described in the Clean Air for Europe (CAFE) Directive (as amended) and the Fourth Daughter Directive. The site of the proposed development lies within Zone D, which represents rural areas located away from large population centres.

Due to the non-industrial nature of the proposed development and the general character of the surrounding environment, air quality sampling was deemed to be unnecessary for this EIAR.

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. Some minor short term or temporary indirect emissions associated with the construction of the wind farm include vehicular and dust emissions.

A Construction and Environmental Management Plan (CEMP) will be in place throughout the construction phase (see Appendix 4-3 of the EIAR) and includes dust suppression measures. In addition, turbines and construction materials will be transported to the site on specified haul routes only. The agreed haul route roads adjacent to the site will be regularly inspected for cleanliness and cleaned as necessary.

### Climate Change and Carbon Balance Calculations

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 June 2021, the Environment Protection Agency released ‘Ireland’s Greenhouse Gas Emissions Projections 2020-2040’ which highlighted that emissions have trended upwards since 2011 with an overall peak in emissions reported in 2018. Ireland exceeded its cumulative 2020 greenhouse gas emissions target by 12 million tonnes, which is characterised by the EPA as being a ‘wide margin’. Growing electricity demand over the next ten years (c. 19% - 50%) will further compound this challenge. In order to meet emission targets while ensuring the security of electricity supply, and a cost-effective delivery of new electricity generation on the system, Climate Action Plan (CAP) 2021 has set out a target a renewable energy target of up to 80% with onshore wind targeted for up to 8GW.

The proposed development will have an export capacity in the range of 126MW to 189MW and therefore will help contribute towards this target. As well as this, it will provide much needed grid infrastructure, and the capacity to offset **7,423,045** tonnes of CO<sub>2</sub> in its operational lifetime thereby reducing the

Greenhouse Gas effect and improving air quality as we transition to cleaner energy industries. Please see Section 10.3.3 for details on Carbon offset calculations.

The carbon balance of proposed 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. The works can either directly or indirectly allow the peat to dry out, locally, which permits the full decomposition of the stored organic material with the associated release of the stored carbon as CO<sub>2</sub>. It is essential therefore that any wind farm development in a peatland area saves more CO<sub>2</sub> than is released.

Construction of the proposed development will have a Short-Term, Imperceptible Negative Effect as a result of greenhouse gas emissions from construction plant and vehicles. Operation of the proposed development will have a Direct Long-Term Moderate Positive Impact on climate as a result of reduced greenhouse gas emissions.

## Noise and Vibration

TNEI Services Ltd. has been commissioned to conduct an assessment into the likely environmental noise impacts of the Proposed Development.

A noise assessment was undertaken to determine the likely significant noise effects from the construction and operational phases of the Proposed Development.

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

A background noise survey was undertaken at three noise monitoring locations. The data was analysed in conjunction with on-site measured wind speed data and operational noise limits have been derived in accordance with the WEDG 2006.

The operational noise assessment was undertaken in three stages, which involved setting the Total WEDG Noise Limits (which are limits for noise from all wind farms in the area) at the nearest noise sensitive receptors, predicting the likely effects (undertaking a cumulative noise assessment where required) and setting Site Specific Noise Limits for the Proposed Development.

Predicted cumulative operational noise levels indicate that for noise sensitive receptors neighbouring the Proposed Development, cumulative wind turbine noise (which considers noise predictions from all nearby operational and consented wind farms and the Proposed Development) would meet the Total WEDG Noise Limits at all Noise Assessment Locations.

The Total WEDG Noise Limit is applicable to all operational, consented and proposed (in planning) wind farms in the area so Site Specific Noise Limits have also been derived to control the specific noise from the Proposed Development. In accordance with the guidance in IOA GPG, the Site Specific Noise Limits have been derived with due regard to cumulative noise by accounting for the proportion of the Total WEDG Noise Limit which is potentially being used by other nearby developments. The Site Specific Noise Limits have been derived in accordance with the IOA GPG.

Predictions of wind turbine noise from the Proposed Development have been made in accordance with good practice using a candidate wind turbine with serrated trailing edge blades, a 170 m rotor diameter and a hub height of 115 m. Predicted operational noise levels from the Proposed Development indicate

that for noise sensitive receptors neighbouring the Proposed Development, wind turbine noise from the Proposed Development would meet the Site Specific Noise Limits at all Noise Assessment Locations (NAL) and are therefore deemed to be not significant. In order to meet the noise limits at two receptors, mode management would be required for one turbine for certain wind speeds and wind directions based on the candidate turbine considered in this assessment.

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

The wind turbine model was chosen in order to allow a representative assessment of the noise impacts. Should the Proposed Development receive consent, the final choice of wind turbine would be subject to a competitive tendering process. The final choice of wind turbine would, however, have to meet the Site Specific Noise Limits presented in the noise assessment.

## Landscape and Visual

The sensitive visual and landscape receptors with visibility of the Proposed Development were assessed based on site visits and using multiple tools and methods including the production of verified photomontages that follows best practice guidance for LVIA (see Appendix 13-1 for an overview of the methodology employed). Other tools such as ZTV mapping and Route Screening Assessment have also been employed to determine the likely potential and actual visibility of the proposal. No significant landscape or visual effects were recorded as a result of the proposed Sheskin South development.

The Proposed Development is located within an area that is surrounded to the north and west by topographical features that provide substantial levels of screening in these directions. The siting of the proposed turbines at locations at a lower elevation than these features substantially reduces the visibility of the turbines from vast geographical areas to the west and north. As a result, the visibility of the Proposed Development in these directions is mainly limited to partial or no visibility, excepting areas in the immediate vicinity of the site that are on the same sides of the hills that surround the proposed turbines, although there are extremely limited numbers of receptors at these locations. ZTV mapping and on-site surveys found that visibility of the Proposed Development is predominantly concentrated to the east and south-east of the Proposed Development Site, where flatter topography permits longer-ranging views. The ZTV map presented in Figure 13-1 of the main chapter illustrates the topographical screening described here.

The landscape area within which the Proposed Development is located is remote, with limited numbers of residential receptors and settlements. As a result, most locations where there are both sensitive receptors and open visibility of the majority of the turbines in the Proposed Development, tend not to be located in close proximity, reducing the spatial extent and size of the turbines from sensitive locations where they are likely to be viewed from.

In terms of construction and operational phase landscape effects relating to designated landscape receptors (Landscape Policy Areas and Vulnerable Features – see Section **Error! Reference source not found.** and Section **Error! Reference source not found.** of the main chapter), there were no significant landscape effects deemed to arise as a result of the Proposed Development and it was determined that the addition of the Proposed Development is consistent with the sustainable development of these areas and achieves the balance sought between the policies outlined in The Landscape Appraisal for County Mayo. As discussed in greater detail above, the Proposed Development will not fundamentally alter any of the key sensitivities of the designated Landscape Policy Areas, including any key scenic amenity attributable to the coastline or elsewhere.

In relation to Vulnerable Features outlined in the Landscape Appraisal for County Mayo, the Slieve Fyagh ridgeline, Carrowmore Lough, and the Owenmore River were assessed in order to determine whether the Proposed Development (Operational, Construction and Decommissioning Phase) would

“impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings” (Section 3.1(b) of the Landscape Appraisal for County Mayo). For the Slieve Fyagh ridgeline, the turbines will be viewed primarily below the highest points on this ridgeline from locations to the west and north (where there are more undisturbed views of this ridgeline than from the south and east), given their strategic siting at elevation lower than 240m AOD, resulting in a coherent layout in relation to the ridgeline. This provides a measure of scale to the turbines and helps protect the character of the ridgeline as the defining feature within the skyline. There will be views of the turbines above the ridgeline from locations to the south-east, although it is noted that the large number of existing turbines in this area results in pre-existing interference with the ridgeline in any case, with some additional interference resulting from the addition of the Proposed Development but with limited changes to the existing baseline.

For the Owenmore River, a number of photomontage viewpoints were assessed from locations in close proximity to the riverbanks. Overall, the turbines will appear as background elements from many of the locations where it is visible from the river. The character of views in the direction of the Proposed Development from the riverbanks themselves are already subject to high levels of wind energy development, and given the distance of the Proposed Development from the closest points along the river (approximately 1.8km from the nearest turbine), its addition to views of the river from its surroundings will not impinge in a significant way upon the character, integrity or uniformity of the river.

For Carrowmore Lough, there will be larger and more easily discernible views of turbines from the shores of the Lough. However, the proposed turbines are framed within a saddle of lower ground between two elevated ridgelines to either side and are effectively absorbed within the scale of the view. A residual visual effect of ‘Moderate’ was deemed to arise at the viewpoint (VP 3) located along the lakeshore. However, it is noted that the turbines are still located a substantial distance away and appear generally as small elements within the view, and there is substantial screening of the Proposed Development by the intervening topography. Given this separation distance from the Proposed Development, the scale of the landscape in view, and the screening provided by the topography, the setting of the lakeshore is not fundamentally altered as a result of the addition of the Proposed Development within the view.

In terms of landscape character, the Proposed Development Site itself is of low landscape value and sensitivity given its current landcover and land use of commercial plantation forestry. The majority of the site is located within an area designated within the County Mayo RES as having areas of *Tier 2 Open to Consideration*. Overall, taking into account its current land use and remoteness, the topographical features surrounding the site, and the policy contained within the RES, the landscape of the Proposed Development Site itself has a low sensitivity to wind energy development and no significant landscape effects will arise as result of the Proposed Development (further detail on this is contained in Section **Error! Reference source not found.** of the EIAR).

In terms of the wider landscape character of the LVIA Study Area (15km study area for effects on landscape character – see Section **Error! Reference source not found.** of the EIAR), there will be no ‘Significant’ or higher landscape effects. One LCU will experience ‘Moderate’ landscape effects as a result of the Proposed Development. LCU E – North Mayo Mountain Moorland, in which the majority of the Proposed Development is located, will experience direct effects on landscape as a result of the Proposed Development. This is a large LCU (approx. 543km<sup>2</sup>), and the footprint of the Proposed Development will only materially alter a small proportion of the landscape area, and so direct landscape effects are very localised. In addition, the Proposed Development will not be visible from the vast majority of this LCU, with visibility restricted to the localised area around the site and within 5 km of the Proposed Development Site. Therefore, the effects on its landscape character will be ‘Moderate’ (This is outlined in greater detail in Section **Error! Reference source not found.** of the EIAR and within Appendix 13-2).

The Proposed Development is also partially located within LCU F – North Mayo Inland Bog Basin. A ‘Slight’ effect on this LCU was deemed to arise as a result of the Proposed Development, given the

existing levels of wind energy development within this LCU, and the overall character and sensitivity of the area. All other LCU's in the study area will experience a 'Slight' effect (see Appendix 13-2 for the full assessment of effects on landscape character).

In terms of cumulative landscape effects, only LCU E – North Mayo Mountain Moorland, where the majority of the Proposed Development is located, will experience a change in the cumulative status attributed to it, with a change in the status from '2. Landscape Character Area with occasional wind turbines in it and/or intervisible in another landscape character area/s' to '3. Landscape character area with wind turbines.' However, it is noted that the topography surrounding the site provides screening of the proposed turbines from much of the LCU. There is no change to the cumulative status of the other LCUs located within the LVIA Study Area. Therefore, significant cumulative effects on landscape character are not considered to arise.

The visual assessment concluded that residual visual effects of "Moderate" was deemed to arise at four of the 13 viewpoint locations. All other viewpoints were assessed as resulting in Slight (8) and Not Significant (1) residual visual effects. As demonstrated in the Photomontage booklet (Volume 2) and photomontage assessment tables (Appendix 13-3), the turbine locations, spacing, and heights have been appropriately selected for Sheskin South site, and design of the Proposed Development adheres to the guidance for the siting of wind farms in Mountain Moorland Landscape Types, as set out in The Wind Energy Development Guidelines for Planning Authorities (DoEHLG, 2006), & (DoPHLG, 2019). The siting ensures the wind farm will be viewed as appearing similarly sized and scaled in relation to nearby developments, and while it will increase the density of turbines within views, it is viewed behind other wind farms as a background element within views from the south-east and will not substantially increase the horizontal or vertical extent of turbines visible from this orientation and are visually contained within the visual extent of turbines currently visible, from the majority of viewing locations. In addition, the majority of the areas where there is visibility of the proposed turbines are the least sensitive locations within the LVIA Study Area, and where there are already a large number of permitted and existing wind farms visible. In particular, it is noted that the Proposed Development does not obstruct landscape views of the North Mayo coastline and does not substantially impact scenic amenity attributed to the coast.

10 no. designated scenic routes along with a number of other sensitive visual receptors were assessed as part of this visual assessment. There were no significant effects found to occur at visual receptors in the LVIA Study Area. From SRDV 2 and SR 3 a 'Moderate' residual visual effect was deemed to arise, with a residual visual effect of 'Slight' deemed to arise on SR 1 and SR 5. All other designated scenic routes were screened out from further assessment as Significant visual effects were not deemed likely to arise.

In terms of other sensitive visual receptors, such as recreational and tourist destinations, settlements, and transport routes, the visual effects were found to be 'Slight' or 'Not Significant' for the majority of these. Viewpoint 14 – Srahgraddy, which is representative of the most-open views available from Bangor-Erris, the closest settlement to the Proposed Development, at a location within the town where people will be acting in a recreational capacity, was deemed to experience a 'Slight' residual visual effect.

The Western Way walking route, which passes through the Proposed Development itself will experience a 'Moderate' visual effect, including some cumulative effects as a result of the proposed Sheskin South, proposed Glenora and permitted ABO developments, among others nearby. There will be a substantial magnitude of change to the character of the section of the walking route that passes through the Proposed Development Site. Overall, however, considering the overall length of the route and the relatively small section where the proposed Sheskin South turbines are located, the Proposed Development will not cause Significant visual effects on this route.

In relation to residential visual amenity, it is emphasised that the turbines are located over twice the required set-back distance from the nearest residential property, with topographical screening also mitigating any effects on residential visual amenity. There are no Significant effects deemed likely to arise in relation to residential visual amenity as a result of the Proposed Development.



Cumulative visual effect are likely to arise given the addition of the Proposed Development within a landscape area where multiple other wind farms are located nearby. The proposed Sheskin South turbines will be seen in the same viewshed as other adjacent wind farms, with cumulative visibility tending towards views of the proposed Sheskin South turbines in combination with other turbines, as opposed to sequential views along routes (although these do occur along the N59, as detailed in the main chapter). The addition of the Proposed Development increases the density of turbines visible within these typical combined views. It is relevant that the topography surrounding the Proposed Development Site is open and large scale, which increases the ability of the landscape within which the turbines are viewed to absorb the development, mitigating the additional visual cumulative effects. For the landscape character type where the proposed turbines are located, Mountain Moorland, the character of the landscape as an expansive, wide-ranging landscape is accepting of cumulative effects, whether wind farms are seen as discrete elements, standing in relative isolation, or as collective units made up of two or more developments (see Section 13.4.3 of the EIAR). The latter is the case with the proposed Sheskin South turbines when they are viewed from certain directions (south-east and east).

A comparative ZTV (Figure 13-17 in the main chapter) shows that the additional cumulative visibility over that of the proposed, existing, and permitted turbines within the LVIA Study Area only increased in a small number of areas due to the addition of the Proposed Development. There are limited visual receptors in the additional areas indicated on the comparative ZTV map and where there are visual receptors (e.g. short sections of the R313 and R314 regional roads) the visual effects on these locations have been assessed (see VP3, VP7 and VP8) above with consideration given to cumulative impacts and no Significant effects were found. Therefore, it is considered that the Proposed Development will not have a Significant effect on the extent of cumulative visibility within the LVIA Study Area.

The landscape character of the area within which the Proposed Development Site is located is one of a large scale which contains open, expansive views, and these assist in allowing the landscape to accommodate a large number of turbines, which a detailed visual assessment outlined in Section **Error! Reference source not found.** of the EIAR and in the photomontage assessment tables contained in Appendix 13-3 has covered in detail. Overall, it is considered that the cumulative impact can be described as Long Term, Moderate Cumulative Visual Effect.

In conclusion, the Proposed Development is an appropriately designed and suitably scaled project, there are no Significant landscape or visual effects envisioned.

## Archaeology and Cultural Heritage

This chapter comprises an assessment of the potential impact of the proposed Sheskin South wind farm Co. Mayo on the Cultural Heritage resource. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on comprehensive desktop research, field inspection and GIS. Both Direct and Indirect (impacts on setting) were assessed.

### UNESCO Sites

The Ceide Fields are defined in the statutory Record of Monuments and Places map on OS Sheet 6 (Site Number MA006-032). This Zone of Archaeological Potential is mapped on **Error! Reference source not found.** of this EIAR in relation to the Proposed Development. The Proposed Development measures 14km to the northeast. There will be no direct effects. In terms of indirect effects on setting the Zone of Theoretical Visibility (used as part of the Landscape and Visual Assessment chapter) was assessed in terms of what cultural heritage assets fall within the visible areas. The Ceide fields fall outside the visible areas. No turbines will be visible from the Ceide fields or visitor centre. No cumulative effects on the Ceide fields will occur since views from the site are to the north only.

## National Monuments in State Care

National Monuments are those recorded monuments which are in the ownership / guardianship of the Minister for Housing, Local Government and Heritage. They are frequently referred to as being in ‘State Care’. National Monuments also include those which are subject to a Preservation Order. No National Monuments are located within the Proposed Development site boundary or within 10km of the nearest proposed turbines. Furthermore, of those National Monuments in the wider landscape area, none are located within the ZTV. All such monuments are located in areas where there is no visibility in the direction of the Proposed Development. No direct or indirect effects will occur therefore. No cumulative effects will occur to National Monuments in State Care.

## Recorded Archaeological Monuments

A total of nine (9) archaeological monuments are located within 5km of the nearest proposed turbine and these are detailed in **Error! Reference source not found.** of this EIAR. The monuments’ locations are shown on **Error! Reference source not found.** of this EIAR above which shows a notable dearth of monuments in the vicinity of the Proposed Development. This is a particularly low number of archaeological monuments in the immediate vicinity with the nearest monument being located at 1.4km from Turbine 17. The monuments potential visual effects are calculated in accordance with the methodology as set out in Section 12.2 of Chapter 12. The potential visual effects vary from No indirect effects to Moderate and this is calculated in the basis of both distance to the nearest turbine and where the monuments are located within the Zone of Theoretical Visibility. Any identified potential impact on setting is a worse case scenario since existing screening, boundaries and buildings are likely to reduce the overall effects in reality. In terms of cumulative effects, when the proposed Sheskin South turbines are considered alone, the potential effects on setting of RMPs vary from No effects to Not Significant to Moderate. When considered cumulatively with other projects within the 5km assessment zone, the effects on setting will increase give the proximity of the other projects to the proposed project. Cumulative effects on setting from RMPs sites will occur therefore but these effects are not considered to be significant since the findings are a worst-case scenario as viewshed analysis and ZTV does not take natural screening into consideration which in reality will alleviate and minimise the potential effects on setting.

## Record of Protected Structures

No Protected Structures subject to statutory protection are located within the Proposed Development site boundary or within close proximity to same. The nearest protected structure is in excess of 16km away. In this regard neither direct nor indirect effects will occur. Cumulative effects will not occur since no direct or indirect effects were identified as a result of the proposed project.

## National Inventory of Architectural Heritage (NIAH)

Two NIAH structures are located within the EIAR Site boundary. They consist of the following: NIAH 31301901 Sheskin Lodge and NIAH 31302701 Catholic Church of Our Lady. There will be no direct effects on the lodge as part of the development proposal. Sheskin Lodge is in private ownership and will be avoided as part of the Proposed Development. It is located 767m to Turbine 20 to the north and 921m to Turbine 21. The Catholic Church of Our Lady is described above in Section 12.2.3.2 of Chapter 12 above as it is located within 5km of the proposed turbines and also within the EIAR boundary. It is located at the roadside and 40m to the east and north of the proposed grid connection cable route. Since the proposed cable route will be confined to the roadside, the structure will not be directly impacted.

The aforementioned structures were also considered in the assessment in order to ascertain any potential negative visual effects. Sheskin Lodge on the eastern boundary of the Proposed Development site and the Catholic Church of our Lady to the south were assessed. The potential visual effects are considered significant for Sheskin Lodge and Moderate for the church. This is a worse case scenario as the calculation and ZTV model does not take screening and buildings into consideration. The realistic

visual effect is likely to be less severe given the actual nature of the surrounding landscape (coniferous forestry). In terms of cumulative effects, when the proposed Sheskin South turbines are considered alone, the potential effects on setting of NIAHs vary from Moderate to Significant. When considered cumulatively with other projects within the 5km assessment zone, the effects on setting will increase given the proximity of the other projects to the proposed project. Cumulative effects on setting from NIAHs sites will occur therefore but these effects are not considered to be significant. Significant effects would arise whereby part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological site.

### Other Cultural Heritage

A stone bridge is located at the northern end of the proposed grid connection cable route. The Zone of Theoretical Visibility shows that potentially 19-21 turbines will be seen from the location of the bridge. The bridge is not subject to statutory protection and is of local cultural heritage significance. The potential visual effect is considered to be Not Significant. No direct effects will occur since no cabling works will take place across the bridge.

### Sub-Surface Archaeology

While no archaeological monuments were recorded within the EIAR site boundary, the potential exists for the development area to contain as yet unrecorded sub-surface sites and artefacts. It is possible that such sites may be uncovered either within the peat/topsoil and/or at the level of the underlying natural subsoil. The excavation of peat during all elements of the Proposed Development has the potential to impact on any new sites, if present. Mitigation measures will include construction stage monitoring. All elements of the Proposed Development include turbine bases, hardstands, roads, cable trenches, construction compounds, substation site, grid connection, borrow pits, drainage, junction accommodation areas along the haul route and any other peat / topsoil activities will be monitored. Should new sites, features or artefacts be present within the site (currently not visible on the surface) the impact is likely to be significant negative and permanent (i.e. the excavation by machinery would permanently remove the sites resulting in a significant negative impact). The following will be undertaken to alleviate or remove the impact altogether:

- Archaeological monitoring of ground works during construction. This will include all excavation works within the EIAR site boundary as well as any topsoil removal along the haul route. If archaeological finds, features or deposits are uncovered during archaeological monitoring, the developer will be prepared to provide resources for the resolution of such features whether by preservation by record (excavation) or preservation in situ (avoidance). Once the project is completed, a report on the results of the monitoring will be compiled and submitted to the relevant authorities. The National Monuments Service will be informed of such findings to discuss how best to proceed.

## Material Assets

### Traffic and Transport

An assessment of the traffic effects was undertaken for the proposed Sheskin South Wind Farm Development. The Proposed Development consists of 21 wind turbines and is located on a site situated to the north of N59 National Secondary Road, in Co. Mayo. The site is approximately 6km east of Bangor Erris and 20km to the west of Crossmolina.

The assessment considers the likely impacts resulting from The Proposed during the construction, operational and decommissioning stages. The impact that traffic generated by the Proposed Development would have on the local highway network is addressed, in addition to an assessment of the route geometry with respect to accommodating the abnormally sized vehicles required to deliver the turbine plant to the site.

### Traffic Route & Study Area

The delivery route to the site for the abnormally sized loads required to transport the turbine components to the site (blades, towers and nacelles) commences at the Port of Galway followed by a route through Galway City including the Monivea Road, Connolly Avenue and Tuam Road. The route then turns right onto the N6 heading east out of the city to the Coolagh Roundabout. From this point the route heads north on the M17 to Tuam bypassing the town via the Tuam Bypass. The route then heads north on the N17 through the villages of Milltown, Ballindine, Knock and Killkeely before heading west on the N5 at Charlestown towards the village of Ballyvary. The route then heads north through Foxford to Ballina, where it heads west on the N59 through Crossmolina towards the site. The route then turns north onto the local L-52926, from which the site is accessed via a new priority junction.

General construction traffic and site staff may approach the site on the N59 from the east from the direction of Ballina, or from the west in the direction of Bangor Erris, followed by the access junction off the L-52926.

### Vehicle types and network geometry

The types of vehicles that will be required to negotiate the local network will be up to 97.0 metres long and will carry a blade 85.0 metres in length. At locations where geometry is constrained (through Foxford and Ballina) it is proposed to raise the turbine blade vertically using a specialised blade adaptor.

An assessment of the geometric requirements of the delivery vehicles was undertaken on the delivery routes. Locations where it was established that the existing road geometry will not accommodate all of the vehicles associated with the proposed development are highlighted, with the extent of remedial works 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

In terms of daily traffic flows it is estimated that the impact of the development traffic on the delivery routes will be as follows:

- The additional traffic generated on the road network on the 21 days when the concrete foundations are poured will result in an increase in traffic levels ranging from between +17.0% on the N59 between the site and Ballina, to +10.6% on the N59 just to the east and west of the L-52926 on the way to the site. On the local L-52926 road approaching the proposed site where existing traffic volumes are very low (133 vehicles daily) it is forecast that traffic flows will increase by a factor of 4.3 fold or +332%. Therefore, during this period, there will be a temporary, slight, negative impact on traffic using the surrounding road network.
- During the remaining 345 days for the site preparation and ground works stage when deliveries to the site will take place, the effect on the surrounding road network will be negative and will be between 4.4% on the N59 between the site and Ballina, to +2.7% on the N59 just to the east and west of the L-52926 on the way to the site. On the local L-52926 road approaching the proposed site, it is forecast that traffic flows will almost double (+86.0%). On these days, the impact will be negative, temporary and will be slight on traffic using the surrounding road network.
- During the 38 days when the various large component parts of the wind turbine plant are delivered to the site using extended articulated HGVs, the effect of the additional traffic on these days will be moderate due to the size of vehicles involved, resulting in increased traffic volumes between +1.2% on the N17 between Tuam and Claremorris to +2.0% on the N58 between Ballylahan and Foxford, to +5.4% on the N59 between Crossmolina and Bangor-Ennis, to +3.4% on the N59 just to the east of the L-52926 on the way to the site. On the local L-52926 road approaching the proposed site it is forecast that traffic flows will slightly more than double (+105.6%). It is considered that the impact of the abnormally sized loads on general traffic would be reduced to slight by undertaking these deliveries during night time hours.
- During the 21 days of the turbine construction stage when general materials are delivered to the site, the delivery of construction materials will result in a negative impact on the surrounding road network, increasing traffic levels ranging from +0.5% on the N17 between Tuam and Claremorris to +0.8% on the N58 between Ballylahan and Foxford, to +2.1% on the N59 between Crossmolina and Bangor-Ennis, to +1.3% on the N59 just to the east of the L-52926 on the way to the site. On the local L-52926 road approaching the proposed site it is forecast that traffic flows will increase by +41.5%. The effect during this period will be temporary and will be imperceptible to slight.
- Of all of the links assessed on the delivery route it was determined that the N58 between Ballylahan and Foxford is forecast to operate over link capacity (138%) by the year 2028 for the do-nothing scenario. It is forecast that during the construction of the Proposed Development, the greatest impact will occur during the 21 days when cement is delivered for the construction of the turbine foundations, when it is forecast to increase the level of capacity on the N58 to 147%. This will reduce to a 140% for the majority of the construction phase. While the assessment indicates that this section of the N58 will operate over capacity by the year 2028, the impacts of the construction traffic generated by the Proposed Development will be negative, slight and will be temporary.
- It was determined that the junction between the N59 and L-52926 will operate within capacity for all days within the construction period.

Once the development is operational the traffic impact created by maintenance staff will be imperceptible as it will only involve a maximum of 2-3 trips per week to and from the site by vans.

The successful completion of this project will require significant coordination and planning, and a comprehensive set of traffic management measures will be put in place before and during the construction stage of the project in order to minimise the effects of the additional temporary traffic generated by the proposed wind farm. The range of measures are set out in the Traffic Management Plan which will be implemented during construction and these measures include the appointment of a traffic management coordinator, agreement of a delivery programme with the relevant local authorities, use of temporary signage, management of site access and provision of information to local residents.

## 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 the wind farm is directly in line with the transmitter radio path.

The proposed development will have no significant effects on Telecommunications and Aviation once mitigation measures, outlined in Chapter 14 of this EIAR, are implemented. 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 Telecoms 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.

In summary, there will be no significant impact on telecommunications and aviation as a result of the proposed development.

## Vulnerability of the Project to Major Accidents and Natural Disasters

This section of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects on the environment arising from the vulnerability of the proposed Sheskin South Wind Farm project (the “Proposed Development”) as detailed in Chapter 4 to risks of major accidents and/or natural disasters.

Major accidents or natural disasters are hazards which have the potential to affect the Proposed Development 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, land, soil (peat stability), water, air and 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 is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 15.3 of this EIAR,

The scenario with the highest risk score in terms of the occurrence of major accident and/or disaster was identified as ‘Contamination’ of the Proposed Development site and risk of ‘Industrial Accident-Fire/Gas Explosion’ during the construction, operation and decommissioning phases.

The Proposed Development has been designed and 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 Development is considered ‘low’ in accordance with the ‘*Guide to Risk Assessment in Major Emergency Management*’ (DoEHLG, 2010).

## Interactions of the Foregoing

Chapters 5 to 14 of this EIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity, Ornithology, Land, Soils and Geology, Hydrology and Hydrogeology, Air and Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage and Material Assets, as a result of the proposed development. All of the potential significant effects of the proposed development 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 16 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 both the construction and operational phases of the proposed development. Where any potential interactive impacts have been identified, appropriate mitigation is included in the relevant sections (Chapters 5–14) of the EIAR.