TOBIN

Scart Mountain Wind Farm

Volume I – Non – Technical Summary

Ireland

FuturEnergy

BUILT ON KNOWLEDGE

Table of Contents

1. INTRODUCTION

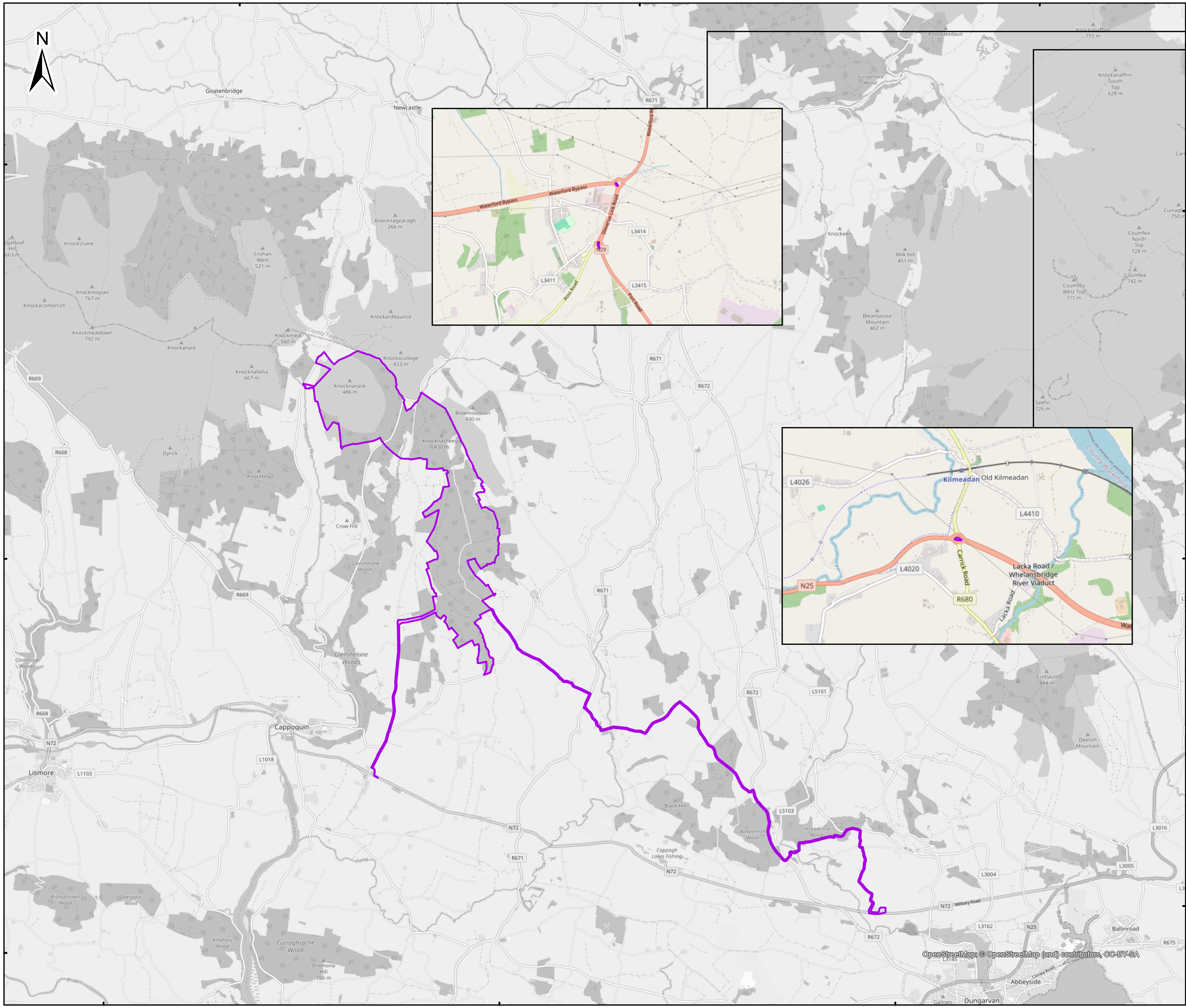
FuturEnergy Scart Mountain Designated Activity Co. Ltd, intend to apply to An Bord Pleanála for planning permission to construct the proposed Scart Mountain Wind Farm in County Waterford. The proposed wind farm site is located approximately 4 km northeast of Cappoquin, and approximately 13 km northwest of Dungarvan and will have an electrical output of between 85.5-108 MW.

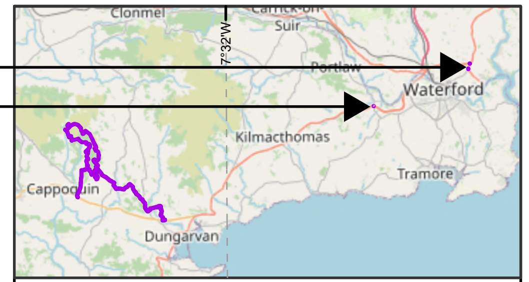
The proposed Scart Mountain Wind Farm (hereafter referred to as the proposed project), comprises a wind farm of 15 no. wind turbines and all associated infrastructure including turbine foundations, hardstanding areas, borrow pits, access tracks, 110kV grid connection and works along the road network for turbine/material delivery.

In this regard, it is proposed to supply the power from the Scart Mountain Wind Farm to the electricity network via 110kV underground cables (approximately 15.5 km cable length of which approximately 13.3 km of which is within the public road corridor) to the existing Dungarvan 110kV substation in the townland of Killadangan, Co. Waterford. The proposed project also comprises facilitating works on the public road network and at private properties to accommodate the delivery of turbine components. The proposed development refers only to the elements for which planning permission is being sought as part of this application, however this EIAR accounts for the overall proposed project.

The project will be the subject of two main applications for planning permission/approval. The first for the wind farm itself along with the onsite substation and works associated with the turbine delivery route under section 37E of the Planning and Development Act 2000 as amended. The second for the grid connection, as it comprises development for the purposes of electricity transmission, under section 182A of the Planning and Development Act 2000, as amended. There will be a subsequent planning procedure utilised for the relatively minor works within the public road corridor where necessary. The entire project is assessed in the EIAR.

The extent of the overall proposed project is shown in Figure 1-1. The proposed wind farm site incorporates an area of approximately 981.4 hectares (ha).


N
Goatenbridge
Newcastle
Knocknagearagh 266 m
Knockshane
Crohan West 521 m
Knockmoylan 767 m
Knockacomortish
Knockmealdown 792 m
Knockanare
Knockardbounce
Knockmeal 560 m
Knocksculloge 433 m
Knocknafallia 667 m
Knockanask 486 m
Broemountain 430 m
Knocknasheega 430 m
Dyrick
Knockboy
Crow Hill
Glenshelane Woods
Cappoquin
Lismore
Black Hill
Ballylemon Wood
Inchadrisla Wood
Cappagh Lakes Fishing
Knockeen
Milk Hill 451 m
Bleantasour Mountain 402 m
Crohaun 484 m
Deelish Mountain
Ballinroad
Abbeyside
Dungarvan
Curraghroche Wood
Dromona Hill 156 m
Knockanaffrin South Top 628 m
Coumfea North Top 728 m
Coumfea 742 m
Coumfea West Top 711 m
Seefin 726 m
Knockanaffrin 755 m
Knockatedaun
Turraphuca Wood
R671
R672
R668
R669
N72
L1018
L1103
L5101
L5103
L3004
L3005
L3016
L3162
N25
R675
N72 Military Road
Waterford Bypass
Slieverue Link Road
L3414
L3415
L3411
Ross Road
Port Road
N29
L4026
Kilmeadan
Old Kilmeadan
L4410
L4020
Carrick Road
Lacka Road / Whelansbridge River Viaduct
Lacka Road
R680
County Waterford
OpenStreetMap: © OpenStreetMap (and) contributors, CC-BY-SA
7°52'0"W
7°44'0"W
7°36'0"W
52°15'40"N
52°10'50"N
52°6'0"N
606000
615000
624000
611100
603200
595300



Legend

Proposed project

0 2.5 5
Kilometres

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING\
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE\
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY \ WORK COMMENCES\
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

A	13/12/2024	First issue	S.P	J.S
Rev	Date	Description	By	Chkd.

Client: FuturEnergy Ireland

Project: Scart Mountain Wind Farm

Title: Figure 1-1: Proposed project extent

Scale @ A3: 1:80,000

Prepared by: S.Pezzetta

Checked by: J.Staunton

Date: December 2024

TOBIN
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11303-005-TDR-S.BO-TOB-A

Draft: A

1.1 The Applicant

The applicant for permission is FuturEnergy Scart Mountain Designated Activity Company Ltd. (hereafter referred to as the applicant), which is owned by FuturEnergy Ireland. FuturEnergy Ireland is a joint venture company owned on a 50:50 basis by Coillte and ESB. FuturEnergy Ireland is actively looking to drive Ireland's transition to a low carbon economy. The company's ambition is to develop more than 1GW of renewable energy capacity by 2030 and make a significant contribution to Ireland's commitment to produce 80% of electricity from renewable sources by the end of the decade.

1.2 Structure and Purpose of the Environmental Impact Assessment Report

An Environmental Impact Assessment (EIA) is required to ensure that projects that are likely to have significant effects on the surrounding area and the environment are properly assessed. Any significant effects identified in the assessment must be avoided or minimized where possible. The findings and outcome of the EIA are presented as a report, known as an Environmental Impact Assessment Report (EIAR).

TOBIN has prepared the EIAR in accordance with relevant and specific environmental legislation, guidance and advise notes. The report has been compiled in consultation with statutory bodies, interested parties and the local community. Further details on the consultation process are provided below.

This document is Volume 1 of the EIAR. It is a Non- Technical Summary (NTS), which gives a brief description of the proposed project and the assessment of the relevant environmental matters in non-technical language.

The additional Volumes contain information as described below:

> Volume 2: The Main EIAR – Contains detailed information relating to the proposed project and the findings of the EIA. Volume 2 also contains drawings, figures and maps.
>
> Volume 3: Appendices: This Volume contains information and data that has been used in the EIA and is referred to in Volume 2.
>
> Volume 4: Photomontages: This Volume contains imagery that has been used as part of the Landscape and Visual Impact Assessment contained in Volume 2: The Main EIAR.

The purpose of this NTS is to provide a concise overview, in non-technical terms, of the issues, impacts and mitigation measures highlighted by the EIA and presented in the main EIAR, Volume 2.

1.3 The Need for the Proposed Project

In terms of setting out the need for the proposed project, and renewable wind energy in general, it is important to place this proposed project in an international and national policy context from the perspectives of environment, energy and planning.

Some of the key national policy targets and objectives are summarised here and are more fully described in Chapter 4 (Policy, Planning and Development Context) of the EIAR and the Planning Statement that accompanied this planning application. Some brief statistics and research on renewable energy use are also presented. This all gives context to the current dependency on imported fossil fuels in Ireland and emphasises the need for the proposed project in general and at this particular location.

There are a number of global agreements which Ireland has agreed to and has committed to achieving, including United Nations Framework Convention on Climate Change, the Kyoto Protocol and its amendments, and the Paris Agreement. These (among others) set out a road map to decarbonise the world economies, while within Europe, there have also been a number of additional policies and legislation that Ireland must adhere to, including Europe 2030 Climate and Energy Framework, Renewable Energy Directive 2009/28/EC & Recast Directive 2018/2001/EU, the European Green Deal, REPowerEU Plan & Council Regulation (EU) 2022/2577 and Council Regulation (EU) 2022/1854 (EU Emergency Regulations).

From a National perspective, the Government's *Climate Action Plan 2024* (December 2023) is the key document which provides a roadmap for Ireland to meet its EU target to halve our emissions by 2030 and reach net zero no later than 2050. The action plan maintains the target from previous plans of 80% of electricity to be produced by renewable energy sources by 2030 with an indicative contribution target of 9.0 Gigawatts (GW)(i.e. 9,000 MW) to be provided from increased onshore wind capacity. In Ireland (as of May 2022 – latest data that is availability at the time of writing), there is an installed wind capacity of 4,333 MW[1] which leaves a gap of 4,667 MW of wind energy capacity to be installed in order to meet the 2030 targets. In essence, a more than doubling of current wind capacity is needed. As such, given the timelines required for a wind farm to become permitted and operational, every large scale wind farm could be considered as playing an essential role in achieving Ireland's renewable energy goals.

Under the EU Council Regulation 2022/2577 the introduction of a rebuttable presumption, that "*renewable energy projects are of overriding public interest and serving public health and safety*" has been introduced. This measure aims to increase security of energy supply across the EU and reduce energy prices. Renewable energy is crucial to fight climate change and reduce dependency on fossil fuels. The regulation states that "*the construction and operation of energy plants from renewable sources and the development of the related grid infrastructure should be given priority*" at least where such a project is of public interest. This priority should only be given if appropriate species conservation measures are undertaken and if sufficient financial resources are made available for this purpose if required. In this context, the addition of between 85.5-108 MW (wind farm output) of installed wind energy capacity from the proposed project will improve our security of supply and reduce our reliance on energy imports.

It should be noted that there is a considerable economic benefit to the development of wind farms nationally and specifically at this location. In the National context, a Pöyry report published in March 2014 entitled *The Value of Wind Energy to Ireland* stated that the sector could support 22,510 jobs in the construction stage and double the amount of existing jobs in the operational phase by 2030. It also projected an investment of €4.8 billion in the time period from 2020 to 2030. The potential local economic impact in the Waterford area will also be

[1] https://windenergyireland.com/about-wind/the-basics/facts-stats (Accessed 17th August 2023)

positive by bringing employment to the area during the construction works. A 2021 report by KPMG for Wind Energy Ireland estimated that jobs in the wind industry in Ireland could grow to over 7,000 by 2030.

The proposed project will bring the south eastern region of Ireland closer to achieving carbon neutrality by providing a significant source of renewable electricity that will reduce the need for using fossil fuel-based energy. The proposed project will facilitate Waterford City and County Council in fulfilling many of their obligations and targets.

The development of renewable energy is a natural step in the evolution of locally generated electricity. Electricity generation has brought significant economic gain to many areas in Ireland over the years. Ireland is now on a path of swift and significant decarbonisation and the energy that we use is changing from fossil fuels to renewables, particularly wind. The potential to extract local, economic and societal gains is a major benefit associated with the development of renewable energy projects.

All renewable projects that are developed over the coming years will attract a significant community benefit fund for the local area which will bring significant opportunities for local communities.

2. THE PROPOSED PROJECT

2.1 BACKGROUND

Due to the scale of the proposed project, the project is of strategic economic and social importance to the Region and the State. The capital investment will represent a significant economic contribution to the Region and the State as a whole. The project will assist in meeting national renewable energy targets and will also result in significant reductions in carbon emissions from electricity generation and reduce the reliance on imported fossil fuels and will assist in the transition from the dependency on fossil fuels to energy generation from renewable sources. There is a considerable economic benefit to the development of wind farms in job creation, investment and energy production. In this particular case, it is considered that the proposed project construction phase will support between 128 – 307 jobs, of which between 87 – 116 will be direct construction jobs and 2-3 full time local jobs during the operational phase.

2.2 SCOPING AND CONSULTATION

As part of the EIA process, FuturEnergy Ireland and TOBIN met with An Bord Pleanála, to discuss the scope of the application for planning permission. A "Scoping Report" accompanied a consultation cover letter that was issued in January 2023 to relevant statutory and non-statutory bodies and all comments from each of the bodies have been taken into consideration in the design and assessment process.

Consultation was continual and an ongoing process and all comments, observations or concerns raised by consultees are addressed in the EIAR.

2.3 THE PROPOSED PROJECT SITE

The proposed site is comprised of four main areas:

- The proposed wind farm site;
- Grid Connection Route;
- Turbine Delivery Route (TDR); and
- Biodiversity Enhancement Lands.

The proposed wind farm site is located between Cappoquin, Bellinamult and Millstreet, in Co. Waterford. The site of the proposed wind farm is located approximately 4km northeast of Cappoquin, and approximately 13 km northwest of Dungarvan.

The proposed wind farm site has an area of approximately 976 ha and comprises an elongated land parcel approximately 8 km long in the north/south direction and is approximately 1.9 km wide in an east/west direction at the widest point. The site lies between the R671 and the R669, on the southeastern side of the Knockmealdown Mountains.

The land use/activities on the site of the proposed wind farm are primarily commercial forestry, with some areas of open peatland that is grazed. The surrounding landscape is a mixture of agricultural land with some forestry and pockets of peatland (Plate 2-1).

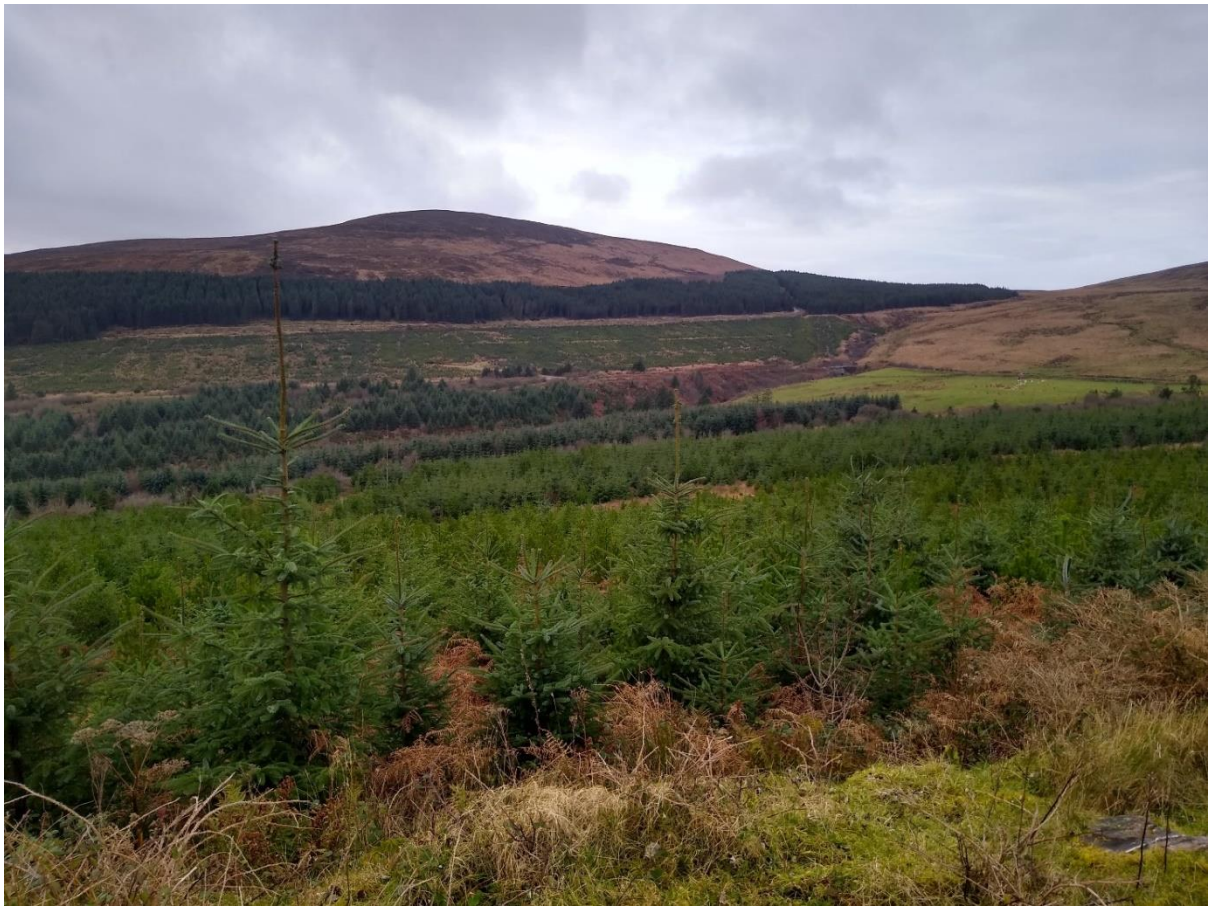


Plate 2-1: Existing Wind Farm Site (view north west from Knocknasheega towards Knocknanask)

It is proposed that the turbine components will be delivered to the site via Belview Port in south County Kilkenny. The route heads north from the port on the N29 to the N25 where it turns westward. The route then continues generally south-westwards on the N25 into County Waterford to the junction with the N72, where it makes a westerly turn in the direction of Cappoquin. The route continues westwards to the Bogheravaghera Cross Roads (also known as Affane Cross) where it turns northwards onto the L1027. It continues northwards, turning onto the L5055 for the final approach to the proposed wind farm site entrance.

2.4 THE MAIN ELEMENTS OF THE PROPOSED PROJECT SITE

The main elements of the proposed project are outlined below, with further detail provided in Chapter 2 (Description of the Proposed Project) of the EIAR:

- Erection of 15 no. wind turbines with an overall blade tip height range from 179.5 m to 185 m inclusive, a rotor diameter range from 149 m to 163 m inclusive, a hub height range from 102.5 m to 110.5 m inclusive, and all associated foundations and hard-standing areas in respect of each turbine;

- Permanent upgrade to the existing forest entrance onto the L5055 local road in the townland of Lackenrea to be used as a construction entrance. It will also be used for operational phase access for HGVs only;
- Construction of 6 no. permanent site entrances to form 3 no. local road crossing points to enable site access during construction (on the L5054, L5055 and L1026 in the townlands of Moneygorm, Knocknasheega and Tooranaraheen respectively). The entrance associated with the crossing point on the L5054 will also function as an operational phase access for light vehicles only;
- Temporary improvements and modifications to 1 no. location at the junction of the N72 and the L1027 (known as Boheravaghera Cross or Affane Cross) to facilitate delivery of oversized loads and turbine delivery, in the townland of Crinnaghtaun West, Co. Waterford;
- Construction of 2 no. temporary construction compounds located within the northern and southern ends of the site, with associated temporary site offices, parking areas and security fencing;
- Erection of 1 no. Meteorological Mast of 100 metres above existing ground level for the measuring of meteorological conditions, with a lightning finial extending above the mast;
- 2 no. temporary borrow pits;
- Permanent construction of 11.9 km new internal site access roads and upgrade of 7.2 km existing internal site roads, to include passing bays and all associated drainage, all within the wind farm site;
- Construction of temporary and permanent drainage and sediment control systems;
- Construction of 1 no. permanent 110kV electrical substation including:
- 1 no. EirGrid control building containing worker welfare facilities and equipment store;
- 1 no. Independent Power Producer control building containing high voltage switch room, site offices, kitchen facilities, storeroom and toilet amenities.
- All electrical plant and infrastructure and grid ancillary services equipment;
- Parking;
- Lighting;
- Security Fencing;
- Wastewater holding tank;
- Rainwater harvesting equipment;
- All associated infrastructure and services including site works and signage;
- All related site works and ancillary development including signage, berms, landscaping, and soil excavation;

- Forestry felling (both permanent and temporary) to facilitate construction and operation including biodiversity enhancement measures, of the proposed project and any onsite forestry replanting; and
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation.
- A 35-year operational life from the date of full commissioning of the entire wind farm is being sought for all works (other than temporary and permanent works specified above), and the subsequent decommissioning.

A 10-year planning permission and 35-year operational life from the date of commissioning of the entire wind farm is being sought for the proposed project. The proposed grid infrastructure will remain as a permanent part of the national infrastructure, which will be operated by the Transmission System Operator, EirGrid and owned by ESB the Transmission System Owner.

The proposed project will be the subject of two main planning applications as follows:

The Proposed Wind Farm with onsite substation and ancillary infrastructure

The first planning application will be to An Bord Pleanála under section 37E of the Planning and Development Act 2000 as amended for everything on the above list with the exception of the proposed grid connection works. This application will include the proposed onsite 110 kV substation, as well as the works at Affane Cross that are associated with the oversize load (turbines) delivery.

Proposed Grid Connection Route (GCR)

A second separate application will be made to An Bord Pleanála for the proposed GCR as it comprises development comprising or for the purposes of electricity transmission, under section 182A of the Planning and Development Act 2000, as amended (i.e. all works connecting the proposed onsite substation to the existing Dungarvan substation over approximately 16 kilometres).

Any works being carried out within the public road corridor (i.e. localised road widening or works to facilitate delivery of components to the site) are not included in these two applications but are assessed as part of the overall proposed project.

The proposed project is being assessed in this EIAR. Any references to the "proposed project" in the EIAR would equally relate to the entire project (i.e. wind farm, GCR, all temporary/permanent works along the proposed turbine delivery route (TDR), and the biodiversity enhancement lands), unless otherwise stated.

2.5 OUTLINE OF CONSTRUCTION

2.5.1 Construction Schedule

It is anticipated[2] that 87-116 persons will be employed during the peak construction period, and it is estimated that the construction phase will take approximately 24 months from starting

2 http://www.ewea.org/fileadmin/files/library/publications/reports/Wind_at_work.pdf

onsite to completion of commissioning of the turbines. With the exception of commercial forestry felling, vegetation clearance will commence outside the breeding birds' season, which runs from the 1st of March to the 31st of August. If any minor clearance or trimming is required within those dates, or if the initial vegetation clearance extends past the 1st of March due to unsuitable weather conditions, the works will be preceded by an ecological survey (from a qualified and suitably experienced ecologist) to ensure there are no sensitivities associated with the action.

The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations shall generally be restricted to between 7:00hrs and 19:00hrs Monday to Saturdays (excluding public holidays).

However, during the following critical periods longer hours will be required:

- Concrete pours for turbine foundations;
- During turbine installation when the weather is suitable (i.e. light winds);
- Delivery of oversized loads;
- In the unlikely event of an emergency (this is unlikely)

Any such out of hours working will be agreed in advance with Waterford City and County Council apart from in the case of an emergency and in line with the Chapter 19 Schedule of Mitigation of the EIAR .

A start date of January 2027 is anticipated for the construction phase, which can be broken down into 5 no. main phases as follows (there will be overlap between these):

- 14 months – Civils (including forestry felling and vegetation clearance, drainage, construction of site roads, hardstands, turbine foundations)
- 9 months – Electrical grid connection/substation installation and commissioning
- 12 months – Site electrical (installing between turbines and substation, pulling cables_
- 4 months – Turbine deliveries and erection
- 2 months – Commissioning

2.5.2 Construction Methodologies

Chapter 2 Description of the Project Development of the EIAR details construction methodologies for the following elements of the proposed project:

- Turbine hardstand, foundations and erection;
- Turbine delivery accommodation works area;
- Wind farm site roads (including passing bays);
- 110 kV substation and electrical works;
- Grid connection route;
- Permanent meteorological mast;
- Forestry felling;

- Borrow pits; and
- Temporary construction compounds.

The construction methodology associated with the grid connection route for the proposed project also considers the methods proposed for crossing of four watercourses.

2.5.3 Environmental Management during Construction

A Construction Environmental Management Plan (CEMP) has been drafted for the proposed project. The CEMP will be updated prior to commencement of the construction works to address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned, and will be submitted to Waterford City and County Council for written approval. The construction contractor will be responsible for implementing the mitigation measures specified in the EIAR, NIS and supporting documents such as the CEMP and for communicating the requirements with all staff on-site. Their implementation of the mitigation measures will be overseen by the Environmental Manager, Ecological Clerk of Works (ECoW), ecologists, archaeologists and/or geotechnical engineers, as appropriate.

3. CONSIDERATION OF REASONABLE ALTERNATIVES

Chapter 3 Reasonable Alternatives of the EIAR contains a description of the reasonable alternatives that were studied which are relevant to the proposed project and its specific characteristics and provides an indication of the main reasons for the option chosen, taking into account the effects of the proposed project on the environment.

Under the "Do-Nothing" scenario, the Scart Mountain Wind Farm project would not go ahead, the development of wind turbines would not be pursued, and all lands associated with the proposed project would remain in their current uses (primarily forestry and agriculture). The prospect of creating sustainable energy would be lost at this site. The nation's ability to produce sustainable energy and reduce greenhouse gas emissions to meet EU targets and targets set out in the Climate Action Plan (2023) would be reduced.

The project applicant, regularly examines potential land for candidate sites for wind energy development. In 2014, FEI's (under Coillte at the time) Renewable Energy Development Team undertook a detailed screening process of Coillte managed land through Geographical Information System (GIS) software, using a number of criteria and stages to assess the potential of a large number of possible sites (c. 441,000 ha), 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 site layout design stage considered the size, number and positioning of turbines and layout of associated site infrastructure i.e. internal access tracks, temporary construction compounds, substations, etc. Alternatives considered for each of these elements are documented in Chapter 3 of the EIAR.

The siting and design of the proposed wind farm site has evolved through the consideration of alternatives and allowing for stakeholder input into the process. This included initial consideration of the need for renewable energy, the site selection process, the consideration of alternative layouts, scales, and design processes.

A TDR Assessment assessed different delivery route options from a number of ports, with a review of the environmental effects of each undertaken as part of the EIAR. The impact on the local roads network was assessed when determining the most suitable site access to the proposed wind farm site.

The construction methods for the proposed project are dependent on a number of factors specific to the site and design, and have been considered in relation to ground conditions, foundation installation and turbine erection. Site-specific information gathered through intrusive site investigation and environmental surveys was taken into consideration when reviewing alternative methodologies for construction. Alternative stream crossing methodologies for the proposed GCR were considered at the outset, such as trenching with over-pumping, but this was quickly considered to be too risky for water quality in the area and was thus ruled out. Directional drilling will be used instead to avoid disturbance and minimise risks to the watercourses. The use of floating access roads was no longer considered once the site investigations confirmed that peat was generally either absent of extremely shallow

(<0.5m). In the event that greater peat depths had been found, they would have been utilised to minimise impacts on the peat.

In summary. the overriding reason for selecting the chosen option is to maximise the renewable energy production from the site while minimising the environmental impact.

4. PLANNING

4.1 CONTEXT

As mentioned above the proposed project is the subject of a number of separate planning applications. These are for:

- The proposed wind farm itself and on-site substation along with works associated with the proposed Turbine Delivery Route.
- The proposed GCR – which will take place predominately within the public road corridor.

The proposed project is subject to EIA and to the requirements inter alia set out in the following legislative provisions:

- Part X of the Planning and Development Act 2000, as amended; and
- The European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

This EIAR has assessed the entire project and therefore will accompany both planning applications.

A Natura Impact Statement (NIS) has also been prepared for the proposed project and is provided separately with both planning applications.

4.2 PLANNING POLICY

Relevant policy has been reviewed at an international (UN and EU), national, regional and local level. The proposed project is consistent with the current energy and planning policy context, which seeks to increase the share of electricity generation from renewable sources. There is a specific recognition of the importance of on-shore wind farms in achieving these objectives. The proposal will contribute to national and international efforts to reduce carbon emissions to the atmosphere and thereby help to address concerns regarding climate change.

The proposed project lies within the functional areas of Waterford and Kilkenny Counties, thus the proposed project is informed by the provisions of the Waterford City and County Development Plan 2022-2028 and the Kilkenny City and County Development Plan 2021-2027. The Tipperary County Development Plan 2022-2028 has also been consulted as the proposed wind farm site is located close to the southern border of County Tipperary.

The proposed project will contribute to the expansion of the renewable wind resource in Ireland and contribute towards governmental, national and regional goals and targets by generating more power from renewable resources. The 2009 EU Renewable Energy Directive (2009/28/EC) set Ireland a legally binding target to meet 16% of our energy requirements from renewable sources by 2020. In 2018, the Directive was recast (2018/2001/EU) to move the legal framework to 2030 targets, setting a new binding target of at least 32% with a clause for a possible upwards revision by 2023. In 2023, the Directive was further amended to set a new binding renewable energy target of at least 42.5% at EU level, but aiming for 45%, emphasising a growing obligation to renewable energy sources.

The Irish Government published the Climate Action Plan 2024 (CAP24) on the 20th of December 2023 which sets ambitious actions to ensure our 2030 targets can be achieved. This in the context of substantial and continuing failure by Ireland in meeting climate targets to date. CAP24 is the third annual update to Ireland's Climate Action Plan. CAP24 builds upon last year's Plan by refining and updating the measures and actions required to deliver the carbon budgets and sectoral emissions ceilings. The Plan provides a roadmap for taking decisive action to halve Ireland's emissions by 2030 and reach net zero by no later than 2050, as committed to in the Climate Action and Low Carbon Development (Amendment) Act 2021. It sets out the roadmap to deliver on Ireland's climate ambition and aligns with the legally binding economy-wide carbon budgets and sectoral ceilings that were agreed by Government in July 2022.

Ireland 2040 - National Planning Framework (NPF), published by the Government in February 2018, is a 20-year planning framework designed to guide public and private investment, to create and promote opportunities for Irish citizens, and to protect and enhance Ireland's built and natural environment. The NPF covers a wide range of national policy objectives and National Strategic Outcomes (NSO), with those most relevant to the project listed in Table 4-2 of Volume II of the EIAR.

The National Development Plan 2021-2030 (NDP) sets out the investment priorities at national, regional and local planning levels that will facilitate the implementation of the NPF. In the context of the energy sector, the principle objective of the NDP is to assist in ensuring a 'long-term, sustainable and competitive energy future for Ireland'.

The National Energy Security Framework was launched in 2022 to provide an overarching and comprehensive response to Ireland's energy security needs in the context of the war in Ukraine. Within the context of the proposed project, the framework seeks to replace fossil fuels with renewable energy sources such as wind.

An assessment of these key planning policy documents is provided in Chapter 4 (Policy, Planning and Development Context) of the EIAR and the Planning Statement.

4.3 Wind Energy Development Guidelines

The Wind Energy Development Guidelines (WEDGs) provide statutory guidance for wind energy development, including consideration of environmental issues, such as noise and shadow flicker, design, siting, spatial extent and scale, cumulative effect and spacing, as well as the layout and height of wind turbines having regard to the landscape and other sensitivities. The Guidelines indicate the need for a plan-led approach to wind energy development.

A review of the Wind Energy Development Guidelines 2006 began with the issuing of draft proposals in December 2013. Following consultation, a preferred draft approach was announced in 2017. Accordingly, the Minister for Housing, Planning and Local Government, Eoghan Murphy, T.D. and the Minister for Communications, Climate Action and Environment, Richard Bruton, T.D., launched a public consultation on proposed revisions to the Wind Energy Development Guidelines on Thursday 12th December 2019.

The Draft Revised Wind Energy Development Guidelines were issued for public consultation and primarily focus on addressing a number of key aspects including noise, visual amenity setback, shadow flicker, community consultation obligations, community dividend and grid connections.[3]

These revised guidelines are still under review (and have been considered within the EIAR) and until such time as the new guidelines are published, the 2006 guidelines remain the statutory policy guide in relation to all wind energy developments.

The EIA Chapters concluded that the proposed project will not result in any likely significant effects on the environment, is in accordance with the principles of proper planning and sustainable development and has been designed such that it is anticipated to be capable of adhering to the draft guidelines.

[3] https://www.housing.gov.ie/sites/default/files/publicconsultation/files/draft_revised_wind_energy_development_guidelines_december_2019.pdf

5. POPULATION AND HUMAN HEALTH

This chapter in the EIAR presents the potential effects on population, human health, socioeconomics, employment, tourism, land-use and health and safety.

The land use activities on the proposed wind farm site are primarily commercial forestry and low intensity agricultural. The surrounding land use is also mostly a mixture of forestry and agricultural land, although there is also residential land use at the nearby dwelling houses and commercial land use at nearby businesses (e.g. farm shops, bed and breakfasts, and other businesses). There is recreational land use at the various local amenities such as walking trails, motorsport facilities and other activities. The majority of the proposed GCR is located on public roads, (transport use) with short section within forestry and agriculture areas. The works relating to the proposed TDR are also located mostly within the road corridor, with a small area of agricultural land. The proposed biodiversity enhancement lands comprise agricultural grasslands (for the parcels outside the proposed wind farm site) and commercial forestry (for the parcel within the proposed wind farm site).

The main urban centres in the region are Dungarvan, located approximately 13 km (with proposed GCR work being approximately 2.5 km from Dungarvan at the existing Dungarvan 110 kV substation) southeast of the proposed wind farm site and Clonmel, located approximately 17 km northeast of the proposed wind farm site. The three proposed TDR works areas, located at roundabouts are all within 10 km of Waterford City.

Census results between 2011 and 2016 show a rise in population in County Waterford of +2%. However, during the 5-year period of 2011 to 2016, the population nationally increased by approximately 4%. The population of County Tipperary increased by approximately 0.5% and the population of County Kilkenny increased by 4%. The population of the study area however did not follow the same pattern and decreased by 0.4%.

Census results from 2016-2022 highlight a marked rise in population. The national population increased by 8% and the population of County Waterford increased by 9%. The population of both County Tipperary and Kilkenny increased by 5%. Every ED within the study area experienced an increase in population during this period except for Newcastle. The average increase within the study area between 2016-2022 was 3.7%.

Best practice construction methodology and measures to minimise impacts from excavation works, as described in Chapter 8 (Land, Soils and Geology, will keep the project area to a minimum and reduce land use changes. The project will employ all of the latest and relevant guidelines and legislation (CEMP in EIAR Appendix 2-2 in terms of health and safety both for works within the proposed wind farm site as well as for works outside the main wind farm such as those on the proposed TDR).

5.1 OVERALL EFFECTS

The proposed project will have a slight positive residual effect on the local population through an influx of construction workers in the short-term, as mentioned above, the construction phase will support between 128 – 307 jobs, of which between 87 – 116 will be direct construction jobs and 2-3 full time local jobs during the operational phase. This influx of people is likely to cause a slight increase in local population over a short period of time resulting in a boost to the local

economy through accommodation and spend in local shops and restaurants. Local suppliers will also receive additional business from the project. This will have a moderate short term positive effect on the local economic activity. There will be a short-term slight negative effect as a result of the construction phase traffic (and associated noise and dust) on residential amenity and sensitive receptors.

It is considered that the proposed project will have a long-term, slight, neutral effect on the tourism and recreation experience and numbers in the vicinity of the proposed wind farm site.

The proposed project will provide clean energy from a renewable resource and help to achieve targets in national energy and climate change policies. This is a direct positive long-term residual effect on land use for the country which will benefit the local population and communities.

Health aspects including noise, sleep, amenity, disturbance and electromagnetic interference were considered in Chapter 5 Population and Human Health. No significant health effects were predicted as a result of the proposed project. The establishment of a Community Benefit Fund is considered to have the potential to be a long-term positive effect on the local economy and community in general, depending on how the community choose to use the fund. This in turn would have the potential to have a positive effect on the individuals living in this community and have a positive effect on their residential amenity and individual psychological health through the development of community led projects and maximising the level of local involvement in terms of influencing how the funds are spent. Overall, it is considered likely that there will be long-term, slight, positive effect on the local population and human health as a result of the proposed project.

6. BIODIVERSITY

The Biodiversity Impact Assessment for the proposed project was undertaken focusing on terrestrial and aquatic flora, habitats, and fauna within the Zone of Influence (ZoI) of activities associated with the proposed project.

6.1 OVERALL EFFECTS

6.1.1.1 Designated Sites

The proposed project overlaps with the Blackwater River (Cork/Waterford) SAC [002170] at the proposed clear span bridge crossing over the Glenshelane River (EPA code: 18G11), and where the proposed GCR crosses the Finisk River (EPA code: 18F02). The proposed project is also hydrologically connected to the Blackwater Estuary SPA [004028] which lies 16.4km (by hydrological pathway) to the south of the proposed wind farm site. The proposed GCR crosses the Colligan River (EPA code: 17C01) which is hydrologically connected to the Dungarvan Harbour SPA [004032] approximately 3.5km to the southeast.

The potential impacts on European sites are assessed in the Natura Impact Statement (NIS), submitted alongside the EIAR as part of the overall planning application documentation.

6.1.2 Habitats

The main habitat recorded within the proposed project site was conifer plantation, with a scattered mix of other habitats as shown in the Habitats Maps, contained in Chapter 6 (Biodiversity) of the EIAR.

The Annex I habitats blanket bog (7130), dry heath (4030), and wet heath (4010) were recorded within the proposed project site on Knocknanask and on Knocknasheega. A total of 0.33 ha of dry heath and 2.79 ha of wet heath will be permanently lost to facilitate the proposed project. The permanent loss of the habitats will result in a permanent, negative, moderate effect on the habitats, at a county geographical scale, in the absence of mitigation or compensation measures.

Construction works will be undertaken directly adjacent to the Glenshelane River at the proposed clear span bridge location and at four locations along the proposed GCR directional drilling river crossings. In the absence of mitigation measures, the construction works have the potential to result in the runoff of pollution and sediment into the watercourses which would result in short-term, negative, moderate effects at a local geographical scale.

6.1.3 Species

Otter

No evidence of Otter was recorded within the proposed project. Optimal foraging habitat however was recorded within watercourses located downstream of the proposed project. There is potential that Otter use connected streams and rivers that are hydrologically connected to the proposed project site for foraging and commuting, due to the suitable habitat present and availability of prey.

The construction works associated with the proposed project has the potential to result in a temporary barrier effect to commuting Otter along the Glenshalane River. The construction works also have the potential to result in water quality impacts which would result in degradation in otter's feeding resources, resulting in short-term, negative slight effects on the local otter population.

Badger

Very little evidence of Badger activity was recorded during surveys. A single disused badger sett was recorded near the western boundary of the proposed wind farm site. The sett was confirmed to be disused using a camera trap which was installed at the sett for a period of five days. Despite the lack of evidence of badger recorded, it is expected that badger may use the proposed project site for foraging and commuting, at least on occasion.

The proposed project will result in the permanent loss of potential foraging habitat for badgers however the impact is considered to result in imperceptible significant effects considering the low levels of activity recorded.

Bats

Bat species recorded within the study area during surveys included, brown long-eared bat, common pipistrelle, daubenton's bat, leisler's bat, nathusius' pipistrelle, soprano pipistrelle, natterer's bat. No bat roosts, however, were recorded within the proposed project site boundary.

The collision risk assessment concluded that common pipistrelle, Leisler's bat and soprano pipistrelle are at risk of colliding with turbines 1, 2, 4, 6, 7, 8 (July to September 9, 10, 11, 12, 13 and 14 (April to September). In absence of mitigation measures, the potential for death by collision or disturbance on the local bat population as a result of the operation of turbines is considered to have a long term, significant effect on the local bat populations at a local geographical scale.

Aquatic Species

A suite of aquatic surveys were carried out within streams and rivers present within and downstream of the proposed project site, and along the proposed GCR. No Freshwater Pearl Mussel or White-clawed Crayfish or suitable habitat to support same, was recorded within the study area. Aquatic species which were recorded during surveys included Lamprey and Atlantic Salmon. The desk study also identified previous recordings of Eel downstream of the proposed project.

The construction works associated with the proposed project have the potential to result in a degradation of water quality if not managed. A degradation in water quality would cause a short-term, negative moderate effects on Atlantic Salmon, Lamprey and Eel populations.

6.2 Mitigation Measures

Habitats

Mitigation measures to prevent the degradation of water quality will be implemented during the construction phase which will ensure there is no impact on watercourses.

Vegetation clearance will be kept to a minimum to prevent unnecessary habitat loss where works are to be carried out, particularly in areas of Annex I habitat.

Otter

In order to prevent barrier effects to Otter commuting along the Glenshalane River, temporary fencing will be erected, allowing a 3m setback of construction activity from the riverbanks, creating an exclusion zone. The exclusion zone will protect the riverbanks and maintain safe passage of otter along the banks. In addition, mitigation measures to prevent the degradation of water quality will be implemented during the construction phase.

Bats

To reduce the collision risk to bat populations, buffer zones will be established around each turbine. Bat buffer zones of 100m will be established and maintained around each turbine.

Further mitigation to reduce the collision risk will include: feathering of the blades to prevent them from freewheeling during low wind conditions; and raising the cut-in speed (the minimum wind speed at which the turbine starts to operate) by 1.5 m/s at the high-risk turbines.

Aquatic Species

Mitigation measures to prevent the degradation of water quality will be implemented during the construction phase. These measures are outlined within the EIAR (See Chapter 9 Hydrology and Hydrogeology and within Appendix 2-10 SWMP).

6.3 Residual Impacts and Compensation Measures

Residual Effects

Following the implementation of the proposed mitigation and monitoring measures associated with the construction, operation and decommissioning phases it is anticipated that the proposed project, will not result in significant residual effects on biodiversity, at any geographical scale, with the exception of the permanent loss of wet [4010] and dry [4030] heath. It was concluded that the loss of these habitats will result in significant residual effect at a County Level. Therefore, appropriate habitat compensation and enhancement measures will be implemented.

Compensation Measures

Compensatory measures will include the management of grazing and the prevention of burning within Knocknanask and Knocknasheega. Additional enhancement measures will be implemented both within and outside the proposed project site and will include the following:

- Clearence of conifer plantation
- Removal of bracken
- Rush and grassland management
- Hedgerows management
- Reduction in fertilizer
- Planting of native trees
- Scrub development

Further details on the above compensation measures are included within the Biodiversity Management Plan which has been submitted with the planning application.

7. ORNITHOLOGY

7.1 SCOPE OF THE ASSESSMENT

The ornithological assessment was mainly based on based on bird surveys carried out between the winter of 2022/23 and the summer of 2024. Reference is also made to previous relevant bird survey data dating back to the winter of 2017/18.

The scope of, and methods used for, the bird surveys were based on Scottish Natural Heritage's guidance: *Recommended Bird Survey Methods to Inform Impact Assessment of Onshore Wind Farms* (SNH, 2017).

The bird surveys included vantage point surveys to monitor flight activity over the proposed wind farm site and other surveys that recorded the distribution and abundance of bird species of interest within and around the proposed wind farm site.

7.2 SPECIES RECORDED

A total of 24 waterbird, raptor, grouse and owl species were recorded during the vantage point surveys between the winter of 2022/23 and the summer of 2024. Six additional species were recorded during other survey work during this period.

The following bird species were identified as potential Important Avian Features for this assessment: Red Grouse, Hen Harrier, Golden Plover (wintering population), Woodcock (breeding population), Snipe (breeding population), Kestrel, Merlin and Peregrine. These are species that regularly, or semi-regularly, occurred in the proposed wind farm site, and which may have populations of conservation importance. The Woodcock and Snipe wintering populations are not included as potential Important Avian Features, because these species are much more widespread and abundant in winter.

7.3 HEN HARRIER

Due to the sensitivity of the Irish Hen Harrier population, and its potential vulnerability to persecution, information about their nest sites needs to be kept confidential. Therefore, specific information on the location of Hen Harrier nest sites, and information that could be used to derive the location of the nest sites, is not included in the EIAR Chapter and associated appendices. The sensitive information that has been redacted from this chapter and associated appendices can be presented to An Bord Pleanála and relevant statutory consultees on request.

Up to five Hen Harrier territories were recorded during the bird surveys carried out for the wind farm project in 2023 and 2024. Breeding was confirmed at one location on the edge of the proposed wind farm site in 2023 and territorial activity was recorded at another location at the edge of the site in 2024. Breeding was also confirmed at separate locations at least 2 km from the site in 2023 and 2024, and territorial activity was recorded at another location around 1 km from the site in 2023.

In previous years, confirmed breeding was recorded within / adjacent to the proposed wind farm site in 2018-2020. In 2019, territorial activity was also recorded at two further sites, one at the edge of the wind farm site and the other around 1 km from the site. No occupied territories were

recorded in 2021. In 2022, the only breeding activity recorded was a confirmed nest over 2 km from the site.

A total of 133 Hen Harrier flightlines were recorded the vantage point surveys between the winter of 2022/23 and the summer of 2024. The highest levels of flight activity occurred between April and July. This reflected the presence of breeding Hen Harrier within / around the proposed wind farm site. Hen Harrier flight activity was much lower in winter, and no evidence of Hen Harrier winter roosts were recorded in any of the bird surveys carried out for the wind farm project.

During the breeding season, most Hen Harrier flight activity was recorded in the northern half of the survey area. In the 2021 breeding season, when no Hen Harrier breeding territories were found near the proposed wind farm site, very few Hen Harrier flightlines were recorded. In the 2022 breeding season, most Hen Harrier flightlines were recorded on the western side of Knockanask Hill. These flightlines may have been associated with a Hen Harrier territory over 2 km from the wind farm site. In the other breeding seasons, the Hen Harrier flightlines were likely to be mainly associated with Hen Harrier territories within / adjacent to the site. In the non-breeding season, Hen Harrier flightlines were more widely distributed around the proposed wind farm site.

7.4 Other Important Avian Features

Wintering Golden Plovers occur in the vicinity of the proposed wind farm site. These Golden Plovers may be associated with the Lower Blackwater River proposed Natural Heritage Area wintering population.

A probable Merlin nest site was found around 2 km from the proposed wind farm site in 2023, while a pair was observed displaying at a different location around 1 km from the site in 2024. However, there was a very low incidence of Merlin sightings in the breeding season during vantage point surveys and other surveys carried out around the proposed wind farm site.

There were occasional records of Peregrine during the vantage point surveys. However, no evidence of breeding Peregrine was found in any of the surveys carried out within the 2 km buffer zone around the proposed wind farm site. There was a nest site recorded at Mount Melleray in 2023. However, the proposed wind farm site is outside the likely core foraging range of 2 km from this nest site.

Surveys in 2023 and 2024 indicated that the proposed wind farm site supported one Red Grouse territory on Knockanask Hill. Red Grouse were also recorded on the south-western slopes of Knockscullogе, outside the site.

Displaying male Woodcock (roding males) were widespread in the proposed wind farm site. However, the numbers of roding males recorded were relatively low compared to sites with large breeding Woodcock populations.

Breeding Snipe activity was recorded in five areas around the proposed wind farm site, with one area possibly supporting 2-3 territories. However, in 2023 and 2024 (the only years with comprehensive survey coverage) only 1-2 Snipe territories were recorded.

A high level of Kestrel activity was recorded in the vantage point surveys carried out for the proposed project. A minimum of three Kestrel territories were estimated to be present in the 2

km buffer around the proposed wind farm site in 2023 and 2024. However, given the level of Kestrel flight activity recorded in the vantage point surveys, it seems likely that the actual breeding population was higher.

7.5 Mitigation and Monitoring

A Bird Protection Plan will be implemented as part of the construction programme. This will incorporate all the measures that are designed to mitigate impacts to bird populations during the construction phase.

A Hen Harrier Protection Plan will be implemented throughout the construction, operational and decommissioning phases of the wind farm. This will incorporate all the measures discussed below that are designed to mitigate impacts to Hen Harriers.

During construction, breeding bird surveys will be carried out in the breeding season preceding the start of construction, and in every subsequent breeding season across the duration of the construction period. These surveys will include Hen Harrier surveys and Snipe surveys.

If replacement of turbine blades is required during the operational phase, a mitigation protocol will be followed to prevent disturbance to sensitive species.

Construction work on the proposed GCR crossing of the Colligan River will only take place during the Kingfisher and Grey Wagtail breeding seasons if appropriate surveys have shown that there are no Kingfishers or Grey Wagtails breeding in the vicinity of the crossing.

A post-construction monitoring programme will be carried out. This will include carcass searches to monitor collision mortality, vantage point surveys to help interpret the results of the carcass searches, and various breeding surveys to assess displacement impacts to breeding Hen Harrier, Red Grouse, Woodcock and Snipe. The design of the monitoring programme will be based on the SNH's *Guidance on Methods for Monitoring Bird Populations at Onshore Wind Farms* (SNH, 2009).

Construction-phase mitigation measures to protect retained habitats within the proposed wind farm site, and to protect wetlands and watercourses, are described in Chapter 6 (Biodiversity) and Chapter 9 (Hydrology & Hydrogeology).

Where possible, tree felling, and scrub clearance will not be carried out during the bird breeding season (1st March – 31st of August).

7.6 Overall Effects

The proposed project is predicted to result in residual significant effects for Hen Harrier and snipe as a result of displacement during the operational phase. There are no other significant residual effects predicted for any of the Important Avian Features discussed and identified in this chapter of the EIAR.

In line with the mitigation hierarchy, as significant displacement effects on Hen Harrier and snipe cannot be avoided, prevented or reduced, compensation measures are provided to offset the residual effects of the proposed project. The compensation measures proposed are provided as a Biodiversity Management Plan (Appended to Chapter 6 – Biodiversity, of the EIAR). The BMP sets out 3 broad aims as follows:

- Aim 1: Management of lands to improve suitability for foraging hen harrier.
- Aim 2: Restoration of moorland habitats.
- Aim 3: Restoration of conifer plantation to dry heath.

The measures will be implemented between 3 and 5 years before wind farm operation commences. Therefore, some of the improvement in habitat will have occurred before operation commences thereby reducing the significance of the predicted residual effects.

8. LAND, SOILS AND GEOLOGY

An assessment on land, soils and geology has been undertaken in accordance with the EPA (2022) 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports', with consideration of the Peat Stability Risk Assessment carried out for the proposed project.

The available desktop information and numerous geotechnical site investigations undertaken for the proposed project have been used to establish the baseline conditions for Land, Soils and Geology, and to inform the impact assessment for the proposed project.

The topography of the proposed wind farm site typically consists of hilly upland, with a general fall in topography to the east. There is no current evidence of peat slides within the boundary of the proposed wind farm site. The closest recorded peat slide is located on an elevated afforested site, approximately 5 km west of the proposed wind farm site. The proposed GCR varies from 160 mOD at the proposed wind farm substation to 10 mOD at the existing Dungarvan substation with an undulating topography. The proposed works along the proposed TDR are limited to a few localised places, most of which are previously disturbed ground (e.g. within roundabouts, at the edge of road surfaces and within tilled fields). The locations range from flat to gently sloping.

The proposed wind farm site is predominantly covered in actively managed coniferous forestry plantations and rough grassland, with a limited extent of peat encountered on Knocknanask mountain to the northwest of the proposed wind farm site. There is an extensive network of existing access roads across the proposed wind farm site to facilitate the ongoing forestry operations. Excavated peat and subsoils will be reused within the proposed wind farm site for landscaping purposes and borrow pit reinstatement. One geological heritage site is recorded approximately 3.5 km to the west of Turbine no. 1; the Knockmealdown gullies, a river channel within extensive gullies. There are no additional geological heritage sites located within the proposed project.

8.1 POTENTIAL EFFECTS

This assessment considered effects on land use, geological heritage sites, contaminated sites/potential for contamination, mineral/aggregate resources, soil compaction and erosion and peat and soil stability in relation to the three phases (construction, operational and decommissioning) of the proposed project.

Two locations within the proposed wind farm site will be used as borrow pits for extracting rock. Based on calculations, the proposed borrow pits can provide the sufficient volume of material required for the development of the proposed access tracks. There are no effects anticipated on mineral/aggregate resources along the proposed GCR or proposed TDR.

Construction phase activities of the proposed project will require earthworks, resulting in the removal of vegetation cover and excavation of peat and mineral subsoil. Incorrect site management of earthworks and excavations could potentially lead to pollution of the land, soils and geology environment, owed to potential leaks and spills from construction phase activities.

Occasionally, during the operational phase, machinery will access the proposed wind farm for maintenance of access tracks, substations and turbines. The presence of machinery on the proposed wind farm site has the potential to result in minor accidental leaks or spills of fuels/ oils contaminating the soils and subsoils.

Along the proposed GCR, minor excavation of soils, subsoils and bedrock may be required where a grid fault is detected during the operational phase. These works will result in temporary disturbance of road surfaces and cable trenches/joint bays.

The potential effects associated with decommissioning will be similar to those associated with construction but of reduced magnitude because of limited excavations.

Mitigation measures are proposed to address potential effects on the land, soils and geology environment within the proposed project.

8.2 Mitigation Measures

The disturbance of soil, subsoil and bedrock is an unavoidable effect of the proposed project. However, every effort will be made to ensure that the amount of earth materials excavated is kept to a minimum, in order to limit the effect on the geological aspects of the proposed project. Excavation works will be monitored by a suitably qualified and experienced geotechnical engineer or engineering geologist. The earthworks will not be scheduled to be carried out during severe weather conditions.

The findings of the Peat Stability Risk Assessments indicate a 'low' to 'negligible' hazard ranking for instability related to the requirement for excavations on the proposed wind farm site, subject to appropriate mitigation measures which are detailed in Chapter 8 Soils and Geology and Appendix 2-3 Soil and Peat Management Plan and Appendix 2-8 CEMP. For example, such measures will include excavations will be battered back (sloped) to between 1:1.5 and 1:2 depending on the depth and type of material, permanent slopes will generally be less than 1:3, Large excavations and movements of subsoil or vegetation stripping will be suspended or scaled back if heavy rain is forecast.

Oil storage will be required at several fixed and mobile locations around the proposed wind farm site. Fuel and oil storage and handling requirements will be as detailed for construction, with fuel and oil storage located within permanent covered bunds.

8.3 Overall Effects

Overall, it is not envisaged that there will be any significant effects in relation to the land, soils and geology environment during construction. This is due to efficient design, along with appropriate material management, such as using onsite borrow pits, which will ensure optimisation of the volume of materials required to be imported to proposed wind farm site.

All other potential effects on the land, soils and geological environment will be mitigated through good site practice, including in relation to vehicular movements, management of pollutant fluids, sustainable use of soils.

Overall, due the relatively low sensitivity of the land, soils and geological conditions locally, and the implementation of the mitigation measures, residual effects from these aspects will likely be not significant, and neither permanent nor negative.

Following mitigation measures, the residual effect in relation to peat stability will likely be not significant, short-term, negative and will be localised to excavations carried out during the construction, operational and decommissioning phases.

9. HYDROLOGY AND HYDROGEOLOGY

The proposed wind farm site is located within several river catchments, including the Glenshelane River, which flows through the north-eastern part of the proposed wind farm site in a south-westerly direction, following the western boundary of the proposed wind farm site before joining the Glennafallia River located southwest of the proposed wind farm site. The Farnane river, located to the east of the proposed wind farm site, is another key watercourse, which joins the Finisk River, located southeast of the proposed wind farm site. All rivers within the vicinity of the proposed wind farm site flow in a southerly direction and are tributaries of the Blackwater River, located to the south, which is part of the Blackwater River (Cork/Waterford) SAC. No lakes were identified at the proposed wind farm site.

The topography of the proposed wind farm site can be described as gradual to steeply rising. The Knockmealdown Mountain range, situated to the north and northwest of the proposed wind farm site, are also elevated and are the most significant landscape features in the local area.

All of the water features identified within the proposed wind farm site are of moderate to steep gradient and higher flow rate, representing natural watercourses, typical eroding/upland rivers.

9.1 POTENTIAL EFFECTS

The construction of the wind farm will involve the removal of vegetation and forestry, and excavation of mineral subsoil and rock primarily from the proposed borrow pits. Exposed and disturbed ground may increase the risk of erosion and subsequent sediment laden surface water runoff. The release of suspended solids is primarily a consequence of the physical disturbance of the ground during the construction phase, if not correctly compacted.

Within the proposed wind farm site, numerous man-made drains are in place to drain the existing forestry. The merging of the proposed wind farm infrastructure with the existing forestry drainage and natural drainage of the proposed wind farm site, in a manner that avoids water quality and flooding impacts to downstream rivers and streams, is a key component of the proposed wind farm design. EPA data indicates that the water quality of the local rivers is typically 'very good' status, however, site-specific monitoring for the proposed project in 2023 indicates 'moderate' water quality.

In terms of groundwater, the proposed wind farm site is underlain by a 'Locally Important Aquifer (LI) - Bedrock which is Moderately Productive only in Local Zones'. Dewatering is required to construct the proposed turbine foundations and borrow pits. Borrow pits are proposed to be excavated up to 6 m deep and will therefore locally effect groundwater levels within the proposed wind farm site.

The proposed wind farm site is not located with a designated drinking water supply zone (WSZ). One abstraction well exists within the proposed wind farm site, approximately 0.15 km northwest of the proposed substation. Due to the shallow nature of the well, and its proximity to the proposed construction works, there is potential for an increase in turbidity in the water within the proposed wind farm site (if not correctly mitigated).

The proposed wind farm site is not located in an area that is susceptible to flooding from rivers or surface water ponding. Drainage attenuation will be applied across the proposed wind farm

site to ensure no impacts on downstream flooding will occur as a result of the proposed wind farm project.

9.2 MITIGATION MEASURES

During the construction phase, all works associated with the construction of the proposed wind farm will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015).

The dewatering operations will be inspected once each day when dewatering is taking place to ensure that dewatering treatment controls are working correctly and to evaluate whether there are observable indicators of sediment discharges. Where any issues are encountered, action will be undertaken to correct any problems at the proposed project or with the dewatering controls that may have contributed to the discharges.

Regular monitoring of groundwater (levels and quality) will take place using existing monitoring boreholes during the construction phase. The existing groundwater well on site will be monitored on site during construction and for a period following cessation of construction activities (to be agreed with the relevant authorities).

Inspections of silt control measures are critical after prolonged or intense rainfall, while maintenance will ensure maximum effectiveness of the proposed mitigation measures. A programme of inspection and maintenance will be designed and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, and records kept.

Surface water arising at developed areas of the proposed wind farm site will be managed by a dedicated stormwater drainage system designed in accordance with Sustainable Drainage Systems (SuDS) principles, limiting discharge from the proposed wind farm site to greenfield runoff rates.

9.3 OVERALL EFFECTS

The residual effects on the surrounding water quality, hydrology, hydrogeology and existing drainage regime at the proposed wind farm site are likely considered to be not significant and primarily short term in nature . The existing on-site drainage system will remain active during the construction and operation of the proposed wind farm and will be complemented by the drainage plan designed for the proposed project.

Apart from the upgrade of existing roads and stream crossings along the Glenshelane River and Boherwallin stream, the proposed wind farm site is generally away from areas that have been determined to be hydrologically sensitive. The large setback distance from sensitive hydrological features are unlikely to be impacted on by excavations / drains or other any general construction works. Significant long-term effects are not predicted.

In summary, significant long-term effect on water quality, hydrology and hydrogeology are not predicted, provided that the works are designed, constructed, maintained, and decommissioned in accordance with the mitigation measures outlined in this chapter in the EIAR.

10. SHADOW FLICKER

Wind turbines can cast long shadows when the sun is low in the sky. 'Shadow flicker' is an effect that occurs when the rotating blades of a wind turbine cast a moving shadow over a building. The effect is experienced indoors where a moving shadow passes over a window in a nearby property and results in a rapid change or flicker in the incoming sunlight.

The proposed rotor diameter for this wind farm is between 149 – 163m, so on the basis of the largest 163m rotor diameter, all sensitive receptors within 1.63km of the proposed turbine locations have been included in the shadow flicker assessment.

In respect of shadow flicker, any alternative configuration of tip height, hub height and rotor diameter (which is within the proposed range of dimensions) will result in a swept area contained within the maximum swept area presented and modelled (i.e. 185m tip height, 163m rotor diameter and 103.5m hub height). In this regard, the potential for shadow flicker to occur as a result of all configurations within the turbine range, will be less than that modelled. This is because the overall area of the shadow for all other scenarios is smaller and within the modelled shadow that has been assessed. As such, the potential shadow flicker effect from within these dimensional boundaries will be less than that presented below.

10.1 OVERALL EFFECTS

There are no potential effects relating to shadow flicker during the vast majority of the construction phase of the proposed project as shadow flicker can only occur when the turbine blades are installed and rotating.

At the very end of the construction phase there may be a short time where there is a potential for shadow flicker to occur. This would be in the stage of testing and commissioning of the turbines. During this stage there would be a potential for a slight momentary effect on any receptor. During commissioning, the turbine blades and shadow flicker management software will be installed and tested. Some shadow flicker may be experienced while the software is being refined but there will be no exceedance of the maximum daily limit of 30 minutes per day during this period. The potential effect from shadow flicker in the worst-case scenario at the defined shadow receptors during commissioning will be slight over a temporary period and will have a momentary to brief effect with respect to the duration of the effect on a daily basis.

There are no potential effects relating to shadow flicker during the decommissioning phase of the proposed project as shadow flicker can only occur when the turbine blades are installed and rotating. Turbines would not be rotating during this phase.

During the commissioning phase, there is potential for some shadow flicker to be experienced.

The Applicant is committed to minimising any adverse effects from the proposed project on the local community. The implementation of mitigation measures to screen shadow flicker effects from sensitive receptors and/or implement wind turbine control measures in accordance with a defined Turbine Shutdown Scheme will ensure that any residual shadow flicker effects from the proposed project will be almost entirely eliminated at any shadow flicker receptors. This will be the case irrespective of which turbine dimensions are selected within the turbine range. As

noted previously, the immediate shutdown of a turbine(s) is subject to the technical capabilities of turbine technology where a controlled and safe slow-down of blade rotation is required, lasting between 1 and 2 minutes at most. This would have an imperceptible long-term effect.

Based on the cumulative assessment set out in Chapter 10 Shadow Flicker there is only one wind farm which has the potential for cumulative effects, which is currently not yet permitted. Should that wind farm get planning approval and be constructed then there is a potential for cumulative shadow flicker effects. However, as the currently proposed Scart Mountain wind farm has committed to effectively eliminating shadow flicker effects through the above prescribed mitigation, there is therefore no potential for cumulative effects from it in the operational phase. During commissioning, the cumulative shadow flicker effect on the identified receptors will be slight over a temporary period and will have a momentary to brief effect with respect to the duration of the effect on a daily basis.

Given that the Applicant has committed to near zero shadow flicker for this project, there is will therefore be no potential for noticeable cumulative shadow flicker from this project.

11. MATERIAL ASSETS

This chapter of the EIAR deals with Aviation and Telecommunications in addition to electricity and water infrastructure, and waste services.

The nearest significant airport to the proposed project is Waterford Airport, located approximately 48 kilometres east of the proposed wind farm site, while Cork Airport is located approximately 58 kilometres to the west. The nearest airfield / airport related sites are Fethard Airstrip and Killenaule Airfield, both in Co. Tipperary. The former is a small private grass airstrip located approximately 28km northeast of the proposed wind farm site, with a runway pointing in a general east-west direction (not towards the proposed wind farm). Killenaule Airfield was a small airfield located over 35 km north of the proposed wind farm site which is no longer in operation.

While there are some overhead electricity lines within the extent of the proposed project, it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly in or near public roads and houses or farmyards (such as along the proposed GCR and proposed areas of works on the TDR). All proposed works being carried out on overhead or underground electricity cables will be done in consultation with ESBN/EirGrid, as required, and will comply with their guidance and best practice. While none have been identified by any service providers it is assumed as a worst-case scenario that there are likely to be underground water pipes along public roads (particularly for the proposed GCR) as well as occasionally within agricultural land. Severing a water pipe, particularly a public supply pipe has the potential to interrupt local water supply in the area.

There were no gas network pipes found to be in the area surrounding the proposed wind farm site. There was a gas pipe found to be located adjacent to one of the proposed temporary works areas for the proposed TDR on the Carrick Road Roundabout on the N25, near Waterford city.

There were no gas network pipes found to be in the area surrounding the proposed GCR. While no major water or electricity services were highlighted during scoping along the proposed GCR, there is a high likelihood that some sort of services will be encountered, as described above. Pre-construction detailed surveys will help identify the locations of these and hand digging will be used around them to avoid damage.

This EIAR chapter also identified waste facilities in the vicinity of the proposed wind farm site.

11.1 OVERALL EFFECTS

There will be no effects during the majority of the construction phase in relation to aviation. At the very end of the construction works, the use of cranes and erection of the turbines will have effects similar to the operational phase.

Potential interference to communication links would be very limited in the construction phase and would only be possible in the final stages of construction when cranes are being used to erect the turbines, and when the turbines are up (prior to commissioning). This would have the potential for an unlikely temporary slight negative effect.

Should any underground telecommunication services be identified along the proposed GCR and proposed TDR, there may be a potential to damage these, resulting in interruption to local service provision. This would have the potential for a temporary slight negative effect.

During peak construction the quantities of waste and wastewater are not anticipated to be significant, a short-term imperceptible negative effect on local waste services is predicted. This effect will be permanent for any waste that goes to landfill.

It is not anticipated that any significant underground utilities will be encountered during the construction of the proposed project, with the exception of the locations within public road corridors, such as the locations of the works areas along the TDR. However, it is likely that underground utilities will be encountered during the construction of the proposed GCR. In the unlikely event that any unknown services are discovered, there is potential to have an effect on local network supplies, causing a brief slight negative effect.

There would be potential for the proposed wind farm site to form a physical obstacle for air traffic in the local area during the operational phase. However, local air traffic is limited and infrequent, with no significant airports situated near the proposed wind farm site; the nearest airfield / airport is located over 35 km north of the proposed wind farm site (Killenaule Airfield). This airfield is not currently in operation and the consultation exercise did not raise any specific operational phase concerns for the proposed project in relation to aviation.

Following the consultation exercise, the proposed wind farm site layout was designed to avoid any effects to telecommunication links which were determined to be in the area.

The operation of the proposed GCR would have no potential for effects to aviation, telecommunications or underground utilities.

Waste quantities during the operational phase are predicted to be in the region of 968kg (based on 3 no. employees), Chapter 11 provides further detail on the breakdown of this waste.

During the decommissioning phase, there will be a short period while the turbines are being removed where they are still present, and cranes are used to remove them. During this time, there is a potential for similar effects to the operational phase to occur, albeit at a decreasing extent as turbines are removed. These effects will be short term and will have equal or lower significance than the operational phase effects. There are no other effects likely to arise during the decommissioning phase of the proposed project in relation to aviation, telecommunications, or other utility services (e.g., gas water and electricity supply networks). The turbines will be removed, and work involved in this phase will not involve significant excavations.

The decommissioning phase will have the potential to generate small quantities of municipal waste (site office and canteen), wastewater (site welfare facilities), and demolition waste (wood, packaging, and metal, etc.) which will require onsite management, and collection by suitably permitted waste collectors and processing at appropriately licensed waste management facilities. Waste quantities generated during decommissioning will be greater than the construction and operational phases (considering the removal of turbines, met mast and other structures), however, these are largely composed of metal and other recyclable materials which will be transferred to specialised facilities for processing/recycling.

12. NOISE AND VIBRATION

This chapter of the EIAR assesses the likely significant environmental noise and vibration effects of the Proposed Project. The objective of the noise and vibration assessment is to specify appropriate noise and vibration thresholds and limit values, determine the potential impacts and effects with reference to the EPA Guidelines on the Information to be Contained in Environmental Impact Statements (EPA, 2022), and, if required, specify appropriate mitigation measures to ensure that the impacts on noise-sensitive receptors are within acceptable threshold values and limits.

To inform the noise impact assessment, an environmental noise survey was conducted to establish the existing baseline and background noise levels in the receiving environment. This was achieved through simultaneous wind measurements and noise monitoring over several weeks, capturing noise levels across a representative set of wind speeds and directions.

12.1 OVERALL EFFECTS

The potential noise and vibration effects on the surrounding environment have been considered for three stages: the short-term construction and decommissioning phases, and the long-term operational phase.

12.1.1 Construction and Decommissioning Phase

The assessment of construction and decommissioning noise and vibration has been conducted in accordance with best practice guidance contained in BS 5228-1:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Noise and BS 5228-2:2009+A1:2014 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Vibration. Subject to good working practices as recommended in Chapter 12 Noise and Vibration and the Construction and Environmental Management Plan (CEMP), and specific mitigation where required, the assessment has confirmed that there will be no significant noise and vibration impacts associated with the construction phase. The noise from construction activity at the nearest Noise Sensitive Locations (NSLs) is expected to be well below recommended threshold values. The associated construction noise and vibration impacts are not expected to cause any significant effects.

12.1.2 Operational Phase

The relevant guidance regarding environmental noise for wind energy developments is the 2006 WEDGs, with further details on the assessment methodology provided in 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' published by the Institute of Acoustics (IOAGPG).

Typical background noise levels for day and night periods at various wind speeds have been derived from the measured data in accordance with best practice guidance contained in IOAGPG. Prevailing background noise levels are primarily attributable to local road traffic noise and other agricultural and anthropogenic sources in the area. The results of the background noise survey have been used to derive appropriate operational turbine noise criteria for the development in line with the guidance contained in the WEDGs.

Based on detailed information on the site layout, the turbine noise emissions, and turbine hub height for the Proposed Project, a series of turbine noise prediction models have been prepared for review. All predictions conducted in accordance with the guidance contained in ISO 9613 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation. The predicted turbine noise levels have been assessed at all NSL's in accordance with the IOAGPG recommendations. The findings of the assessment have confirmed that the predicted operational turbine noise levels from the proposed project, both in isolation and cumulatively with the proposed Dyrick Hill Wind Farm, will be within best practice noise criteria curves recommended in WEDGs. Therefore, no specific mitigation measures are required, and it is not considered that the Proposed Project will have a significant effect.

There will be no significant effects associated with the potential impacts from the operation of the proposed GCR.

No significant vibration effects are associated with the operation of the proposed project.

12.1.3 Summary

The noise and vibration effects of the proposed project are not significant, considering best practice guidance for wind turbine developments.

13. LANDSCAPE AND VISUAL

This chapter describes the landscape context of the proposed project and assesses the likely landscape and visual impacts on the receiving environment. Although closely linked, landscape and visual impacts are assessed separately.

In accordance with relevant guidelines, the study area used for the LVIA is 20km. Production of the Landscape and Visual Impact Assessment involved baseline work in the form of desktop studies and fieldwork followed by professional evaluation by qualified and experienced Landscape Architects.

13.1 BASELINE CONTEXT

The proposed project is located in a transitional foothill area east of the Knockmealdown Mountains, characterised by rolling terrain, commercial conifer forests, moorland, and pastoral fields. The site is intersected by the Glenshelane River, which flows south, and is surrounded by valleys and forested land. The nearest settlement is Cappoquin, 4km southwest, with smaller residential clusters nearby. Key transport routes include the N72, R669, and R671 roads. The area contains notable tourism, recreational, and heritage assets, with several linear amenity routes also passing through the study area.

13.1.1 Landscape Policy Context and Designations.

The Wind Energy Development Guidelines(2006) provide guidance on wind farm siting and design criteria for a number of different landscapes types. The setting of the proposed project is most consistent with the 'Transitional Marginal Landscape' type described in the 2006 Guidelines, and thus, the guidance for this landscape type is considered most relevant.

In terms of the current Waterford City and County Council Development Plan (CDP) the proposed project is primarily contained within the 'Upland' landscape type and the subsequent landscape character unit '6B-Knockmealdown Uplands' and straddles the border of the 'Foothills' landscape type and subsequent landscape character unit '5C – Tooaneena Foothills'. The predominance of the proposed turbines are situated within the 'Most Sensitive' landscape sensitivity. Nonetheless, the southern extent of the site is situated across the 'Low Sensitivity' classification, whilst localised areas of 'High Sensitivity' are also situated in the surrounds of the central study area.

The current Waterford CDP identifies an array of scenic routes and views throughout the county, several of which pass through the central and wider study area.

13.2 MITIGATION MEASURES

Macro Works has been involved with the proposed project since 2019 when early-stage constraints and feasibility studies took place to assess the potential impacts of the full scale and extent of the proposed wind farm. Indeed, when the initial landscape and visual constraints were identified, the proposed wind farm was classified within an area 'open to consideration' in relation to wind energy development, which was described as "*proposals for wind farms will be assessed on their merits with responsibility on the developer to demonstrate suitability of the site*". This zoning implied that developments would be considered on their merits, but they must

prove to have been designed sensitively in relation to their specific landscape context. Several iterations of the turbine layout were assessed from some of the most susceptible surrounding receptors, including local community receptors and surrounding scenic designations.

Overall, the layouts responded well to their existing landscape context and utilised the layout guidance recommendations outlined for 'Transitional' landscape types in the current and draft WEDGs (2006/2019). Following the iterative design process and further localised design refinements, a final layout comprising 15 turbines at a max tip height of 185m was then generated.

13.3 Overall Effects – Landscape

In terms of scale and function, the proposed wind farm is well assimilated within the context of the central study area. This is due to the broad scale of the landform, landscape elements and land use patterns. These attributes prevent the proposed turbine height and overall wind farm extent from causing the type of scale conflict that can occur in more intricate landscape areas. There will be physical impacts on the land cover of the site as a result of the proposed project during the operational phase, but these will be relatively minor in the context of this transitional working landscape that comprises extensive areas of commercial conifer forestry and existing productive agricultural lands. Whilst the proposed wind farm will result in a distinct increase in the intensity of development in this landscape context, the scale of the proposed project will be well assimilated here without undue conflicts of scale with underlying land form and land use patterns.

For these reasons, it is not considered that the proposed wind farm will give rise to significant landscape effects.

13.4 Overall Effects – Visual

The visual impacts of the proposed project were assessed across 37 different viewpoints where the sensitivity of each receptor varied widely from High to Medium-low.

Overall, the proposed project represents a distinct increase in the scale and intensity of built development along the working transitional Knockmealdown Mountain foothills. Whilst the turbines will be a distinctive feature in this local landscape, they are not considered an inappropriate development type, reinforced by the existing Barranafaddock development located in a similar landscape context along the western Knockmealdown Mountain foothills. Overall, the proposed turbines most often present in a legible manner offset from the more visually susceptible upland parts of the Knockmealdown Mountains and do not appear incongruous in this foothill landscape context. Thus, it is considered that the site and its surrounds can accommodate a large-scale wind energy development without generating significant visual effects.

13.5 Overall Effects – Cumulative

It is considered that the proposed Scart Mountain Wind Farm will contribute to a cumulative landscape and visual impact in the order of Low in respect of the current cumulative scenario, as the proposed Scart Mountain wind farm is well offset from all other existing and consented wind farm developments, and will often be viewed in isolation, especially at the nearest receptors.

Thus, is not considered that the proposed project will generate a significant cumulative effect in the current cumulative scenario.

The magnitude of cumulative effect of the potential future baseline scenario in relation to existing, permitted, in-planning and proposed wind farms within the 20km Study Area is deemed **High**, which is heavily influenced by the cumulative effects generated the proposed Dyrick Hill development, which is the nearest proposed wind farm to the proposed project.

14. AIR QUALITY AND CLIMATE

14.1 CLIMATE

The assessment of Climate is contained within Chapter 14 Air Quality and Climate. The assessment has focussed on:

1. GHG (Greenhouse gas) emissions from the proposed project, over its lifetime and;
2. Climate change risk assessment, that considered the proposed projects vulnerability to climate change.

14.1.1 Existing Environment

The EPA estimate that 2023 total national GHG emissions, excluding LULUCF (Land Use, Land-use Change and Forestry), have decreased by 6.8% on 2022 levels to 55.01 Mt CO_2e, with a 2.2 Mt CO_2e (-21.6%) reduction in electricity industries alone.

14.1.2 Do Nothing Scenario

The Do Nothing assessment assumes that the proposed project is not built. In this scenario the climate emissions will remain as per the current baseline in the short-term. Renewable energy is required to ensure targets set out in CAP24 are met. Such targets include up to 80% of the national grid being generated from renewable sources including 9 GW onshore wind by 2030. In addition, CAP24 aims to phase out and end the use of coal and peat in electricity generation by 2030. The Do Nothing Scenario is not in line with such plans.

14.1.3 Residual Impact Assessment

The impact to climate as a result of a proposed project has been assessed as a whole for all phases. The proposed project will result in some impacts to climate through the release of GHGs due to its construction.

TII (Transport Infrastructure Ireland) state that the crux of assessing significance is *"not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050"*.

The proposed project has been designed to maximize its contribution to renewable electricity generation, significantly reducing climate impacts during operation. By producing clean energy, the proposed project will directly support Ireland's transition to a low-carbon economy and help mitigate climate change. The production of wind energy for export to the national grid transforms the proposed project from negative in terms of GHGs (associated with embodied energy from construction) to having a net positive annual impact on GHG emissions of the order of 0.19% to 0.24% of the annual total 2030 GHG Emissions target for Ireland in 2030. The total annual GHG emission savings will amount to between 61,350 tonnes and 77,694 tonnes of CO_2eq which is equivalent to 2.05% to 2.59% of the energy sector budget in 2030[4].

[4] based on 2024 carbon intensity

The proposed project has incorporated some minimal measures to reduce climate change impacts. Once mitigation measures are put in place, the effect of the proposed project in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant. Guidance states that this is appropriate for a project which:

- The project's GHG impacts are mitigated through 'good practice' measures.
- The project has complied with existing and emerging policy requirements; and
- Fully in line to achieve Ireland's trajectory towards net zero.

Irelands trajectory to net zero requires significant renewables generated from on and offshore windfarms and sets a high bar for projects with respect to assessment criteria.

However, in terms of EPA Guidance which sets different criteria, in relation to residual effects of the operational phase, the project can be considered direct, long-term, beneficial and slight.

When considering climate change risk, with design mitigation in place, there are no significant risks to the project as a result of climate change however some vulnerability will remain. Where additional information becomes available, such as updated Eurocodes of design practices these will be followed during detailed design to ensure the proposed project is robust in its residual climate vulnerability. In accordance with the EPA Guidelines (EPA, 2022), the significance of effect of the impacts to the project as a result of climate change are direct, long-term, negative and slight.

14.2 AIR QUALITY

The assessment of Air Quality is contained within Chapter 14 Air Quality and Climate. assessment has focussed on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc.
- Potential vehicle emissions from traffic accessing the site for construction works and for operational phase maintenance activities.
- Potential beneficial, indirect air quality impacts from the generation of renewable electricity and the displacement of fossil fuel electricity and it's associated air emissions.

14.2.1 Existing Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO_2), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$) and are generally well below the National and European Union (EU) ambient air quality standards.

The assessment of baseline air quality in the region of the proposed project has shown that current levels of key pollutants are significantly lower than their current limit values. Due to the size, nature and location of the proposed project, increased road traffic emissions resulting from construction and maintenance of the proposed project are expected to have a negligible impact on air quality.

14.2.2 Do Nothing Scenario

In the Do Nothing Scenario, the proposed project will not be constructed. In terms of the impact to air quality as a result of renewable electricity generation and the potential offsetting of fossil fuel derived electricity, in the Do Nothing scenario this renewable electricity will not be generated and there is therefore, no indirect benefit to air quality as fossil fuel derived emissions will not be offset.

14.2.3 Residual Impact Assessment

Detailed dust mitigation measures are outlined in Chapter 14 Air Quality and Climate and also included in the CEMP to ensure that no significant nuisance as a result of construction dust emissions from demolition, earthworks, construction and trackout (movement of vehicles) occurs at nearby sensitive receptors. Once these best practice mitigation measures, derived from the Institute for Air Quality Management 2024 guidance '*Guidance on the Assessment of Dust from Demolition and Construction'* as well as other relevant dust management guidance, are implemented the impacts to air quality will pose no significant impacts at nearby sensitive receptors (such as local residences or sensitive ecology).

There will be beneficial impacts to air quality from the generation of renewable electricity from the proposed project. There will be NO_X emission savings which may otherwise have been generated from fossil fuels. The impact to air quality has been assessed as beneficial, long-term, slight and not significant.

15. CULTURAL HERITAGE

The proposed wind farm site is primarily comprised of marginal land including Scart Mountain and its rural surroundings. There are no recorded monuments within the proposed wind farm site; however, there are 120 recorded archaeological sites located within the 5 km study area (of the proposed wind farm site), including seven redundant records. In total, 165 recorded structures of architectural merit are noted within the 5 km study area of the proposed wind farm site, including 75 protected structures and one Architectural Conservation Area (Cappoquin). Furthermore, 65 previously unrecorded sites of cultural heritage significance have been identified within the 2 km study area of the proposed wind farm site as part of this assessment.

Three recorded monuments are located within the 50m study are of the proposed TDR (AH86, AH26, AH14), along with two structures listed in the NIAH survey (BH3, BH4). Four recorded monuments are located within 50m of the proposed GCR (AH1 to AH4), along with one protected structure (BH1).

There are no National Monuments or sites listed with Preservation Orders located within 5 km of the proposed wind farm site. Within 10 km a church and graveyard (subject to a Preservation Order) are located c. 6.17 km to the north-northeast of the proposed wind farm site. A group of 15 monuments subject to a Preservation Order (as part of a larger archaeological complex formed by 116 recorded site) is located on high ground c. 9.24 km and 10 km to the east of the proposed wind farm site.

A review of the Excavations Bulletin (1970-2024) has confirmed that no previous archaeological investigations have taken place within the proposed wind farm site or along the GCR or TDR.

The cartographic sources show the proposed wind farm site comprised marginal ground throughout the post medieval period, which is typical of its upland location. A total of 11 cultural heritage sites have been identified within the proposed wind farm site, which comprise the sites of vernacular structures depicted on the first edition OS map of 1842. A further 51 CH sites are located in a 2 km study area of the proposed wind farm site, TDR and GCR, which represent vernacular architecture with upstanding remains. A single aerial photographic anomaly was identified (CH63), which may represent an unrecorded enclosure, located c. 17m east of the proposed wind farm site. In addition, a stone three-arch bridge, which is not recorded as a protected structure nor listed in the NIAH, known as Modeligo Bridge (CH64), is located along the path of the proposed GCR.

A field inspection has been carried out as part of the assessment. This confirmed the analysis of the baseline resources and the presence of dense commercial forestry over the majority of the southern portion of the proposed wind farm site (Turbines 6-15). This restricted inspection of the proposed turbine locations and new access tracks. The northern portion of the proposed wind farm site (Turbines 1-5) comprises marginal upland terrain with uneven ground conditions and dense heather and scrub. No previously unrecorded archaeological, architectural or cultural heritage sites were identified that will be affected by the layout of the proposed wind farm site. The proposed GCR runs along the existing road network, for the most part, and a number of architectural sites of heritage merit were identified bordering the route. The proposed GCR will

also cross Modeligo Bridge (CH64) and a watercourse. All watercourses will be crossed by means of directional drilling, which will preserve the channels of the watercourses.

The proposed TDR will utilise an existing road, which runs from the N72 to the proposed wind farm site. Some widening is proposed along the road, with passing bays also installed. These will not result in direct impacts on the recorded archaeological, architectural or cultural heritage resource. The southern section of the delivery route will cross 220m of greenfield in proximity to the approximate location of a medieval battle site (AH86). The exact location of the battle remains unknown.

15.1 Overall Effects – Construction

There are no archaeological, architectural or cultural heritage sites that are subject to statutory protection located within the proposed wind farm site. As such, there are no predicted impacts on any such sites during the construction phase. A total of 11 cultural heritage sites have been identified within the proposed wind farm site (CH1-10, CH20), but none of these sites are located within areas required for construction as part of the proposed wind farm site and as such will remain unaffected by construction activities.

The proposed wind farm site occupies marginal upland terrain, much of which has been disturbed by commercial forestry activities and the overall archaeological potential is considered low. It remains possible that some previously unknown archaeological sites and features may survive below the current ground level across the area. Ground disturbances associated with the proposed project, such as the construction of access roads and excavations for turbines bases and borrow pits, have the potential to result in permanent, direct and negative impacts on any such remains that may be present. Prior to the application of mitigation these effects have the potential to range from moderate to very significant negative, depending on the nature, extent and significance of any such archaeological features.

The construction of the proposed GCR will involve the excavation of a trench through the zone of notification for three recorded monuments: AH1 (ringfort) and AH2 and AH3 (church and graveyard). Whilst the construction of the road through these areas is likely to have impacted on the potential archaeological resource, it remains possible that excavation activities may permanently, directly and negatively impact on buried associated archaeological remains. Prior to the application of mitigation these effects have the potential to range from moderate to very significant negative, depending on the nature, extent and significance of any such archaeological features.

The construction of the proposed GCR will require trenchless techniques to carry the cable beneath any watercourses and as such no direct impacts are predicted upon watercourse channels. It remains possible that excavation activities as part of the small launch and reception pits either side of the watercourse may permanently, directly and negatively impact on buried associated archaeological remains that may survive in this area. Prior to the application of mitigation these effects have the potential to range from moderate to very significant negative, depending on the nature, extent and significance of any such archaeological features.

The construction of the proposed TDR across 220m of greenfield has the potential to result in permanent, direct and negative impacts on buried archaeological remains that may survive beneath the current ground level and may be associated with the recorded medieval battle site

(AH86). Prior to the application of mitigation these effects have the potential to range from moderate to very significant negative, depending on the nature, extent and significance of any such archaeological features.

The construction of the proposed TDR will require some road widening along the eastern section of the existing road, at its northern extent as well as the installation of passing bays. The proposed works will not affect any known archaeological, architectural or cultural heritage sites. The potential remains that permanent, direct and negative impacts on buried archaeological remains that may survive beneath the current ground level may occur. Effects have the potential to range from moderate to very significant negative, depending on the nature, extent and significance of any such archaeological features.

15.2 Overall Effects – Operation

All sites of archaeological, architectural and cultural heritage significance identified within the 2 km and 5 km study area of the proposed wind farm site have been assessed in conjunction with the Theoretical Zone of Visibility mapping (Tip Heights) and photomontages produced by the Landscape and Visual specialists in Chapter 13. In some instances, there are no predicted effects due to the fact the proposed turbines will not be visible from certain places in the surrounding landscape, due to the topography. This, in particular, is the case for the settlement of Cappoquin. This area has been screened out of the impact assessment as the proposed project will not be visible from this location.

A number of indirect moderate negative effects (medium term) have been identified, but no significant (or higher) negative effects. Moderate negative effects are predicted in relation to AH6 (barracks), AH7 (enclosure), AH10 (ringfort), AH16 (concentric enclosure), AH17 (souterrain), AH30 (cairn), AH31 (cist), AH44 (ringfort), AH48 (ringfort), AH67/68 (ringfort and hut site), AH72 (ringfort), AH94 (cairn) and CH29, a vernacular house.

No impacts are predicted upon the archaeological, architectural or cultural heritage resource as a result of the operation of the proposed GCR.

No impacts are predicted upon the archaeological, architectural or cultural heritage resource as a result of the operation of the proposed works on the proposed TDR.

15.3 Mitigation

All stripping of topsoil across the proposed project, including excavations as part of the proposed GCR within 40m of AH1 (ringfort) and AH2 and AH3 (church and graveyard), as part of watercourse crossings and road widening along the proposed TDR, will be monitored by a suitably qualified archaeologist. Should any features of archaeological potential be discovered during the course of the works the DoHLGH will be informed immediately and archaeological excavation (preservation by record) or in-situ will be required. Preservation by record or in-situ will require approval from the DoHLGH, with all archaeological excavation carried out under licence from the National Monuments Service of the DoHLGH.

The proposed TDR, where it passes through 220m of greenfield, will be subject to a programme of archaeological test trenching and metal detection, prior to the commencement of construction. These investigations will be carried out under licence to the National Monuments

Service of the DoHLGH. Dependant on the results of the assessment and if archaeological remains are identified, further mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH.

As detailed the assessment potential indirect impacts have been identified upon the archaeological, architectural and cultural heritage resource within the study area of the proposed project, although none are deemed to be significant negative or higher. Due to the constructed form of the proposed turbines, it is not possible to mitigate indirect impacts on the setting of archaeological, architectural or cultural heritage sites.

16. TRAFFIC AND TRANSPORT

This chapter assesses the potential impact of the proposed project on the surrounding road network and its capacity. Regional access to the site area is typically via national roads (e.g., N72) with local access into the proposed site from the L5055 local road.

The majority of materials delivered to site will be delivered using maximum length articulated lorries or smaller vehicles. The traffic management of the decommissioning phase will be advised by the road conditions at the time of decommissioning.

A Stage 1 Road Safety Audit (RSA) has been undertaken at the proposed wind farm site access, the 3 no. crossing point locations where the internal access roads cross the local road network (the L5054, L5055 and L1026) and at the proposed TDR accommodation works.

The construction activity with the largest impact is associated with the importation of the aggregate for the site compound, internal site roads, turbine hardstanding areas and the steel and blinding for the turbine foundations. The second largest impact is associated with the concrete pours for the turbine foundations. A number of haul routes were identified based on proximity to site and suitable road infrastructure. Mitigation measures on the haul route include selection of viable route with the lowest impact on the road network, avoidance where possible of sensitive receptors and urban setting, and to mitigate the impact of the delivery of wind turbines on the road network - advanced works will be undertaken (i.e., hardstanding, making signs demountable, utility diversions etc). The hardstanding works areas will be temporary in nature and removed once the final turbine is delivered to site.

The proposed TDR was investigated and assessed, with sections along the route identified for advanced works to facilitate delivery of the turbine components.

The potential traffic effects on the road network are considered in relation to peak construction traffic and average construction traffic. The N72/L1027 Crossroads Junction assessment indicated the following potential effects: peak construction traffic will have a moderate negative effect over a temporary duration (i.e., 3 months), and average construction traffic will have a slight negative effect over a short-term duration (i.e., 21 months). To minimise the impact of the proposed project during the construction phase a TMP has been prepared.

The impact of transporting the AILs to the proposed wind farm site, will be moderate and temporary in nature. To mitigate potential impacts of the AIL deliveries, these deliveries will be undertaken under Garda and traffic management escort during off-peak (i.e., night-time) hours.

The proposed GCR runs along the L5056, R671, L1032, L5065, R672, L5103, L3003, and L7001, and N72. The overall length of the proposed GCR between the proposed substation and the existing substation is 16 km, most of which is located within the public road corridor with a short section being within the proposed wind farm site, and the remainder being located within Coillte and other private lands.

The operational stage of the proposed project will result in low traffic volumes for operation and maintenance works at the wind farm. Due to the low volume of traffic, no mitigation measures were applied to the operational stage impacts. Overall, the operational phase traffic volumes will result in minimal increase in traffic with a long-term imperceptible effect on the road network.

When the proposed project is decommissioned, a decommissioning plan will be prepared and implemented in order to minimise the residual effects during this stage. The decommissioning phase will employ similar mitigation measures as the construction phase. When the turbine blades are decommissioned, they are cut to a more manageable size reducing the overall impact during removal from site. As the expected volumes of traffic will be primarily associated with the transportation off-site of turbine components and materials only, the residual effect is considered to be slight and temporary.

17. MAJOR ACCIDENTS AND NATURAL DISASTERS

Chapter 17 Major Accidents and Natural Disasters in the EIAR assessed the potential significant adverse impacts of the proposed project on the environment deriving from its vulnerability to Major Accidents and/or Natural Disasters, as well as the potential of the proposed project itself to cause potential Major Accidents and/or Natural Disasters during the construction, operation and decommissioning phases.

The IEMA (2020) provide the following definitions for a major accident and disaster.

> Major Accidents are *"Events that threaten the immediate or delayed serious environmental affects to human health, welfare and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g., train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events."*
>
> A Disaster *"May be a natural hazard (e.g., earthquake) or a man-made/external hazard (e.g., act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident."*

The assessment of Major Accidents and/or Natural Disasters includes three stages as described in A Guide to Risk Assessment in Major Emergency Management (DoEHLG 2010) and the Major Accidents and Disasters in EIA: A Primer guidance (IEMA, September 2020):

> Stage 1: Screening/Identification – identifying potential unplanned risk events that the proposed project may be vulnerable to or that may occur as a result of the proposed project.
>
> Stage 2: Classification – Following the initial identification and screening process, major accidents and/or natural disasters were evaluated with regard to the likelihood of occurrence and the potential impact; and
>
> Stage 3: Assessment - This stage provides a greater understanding of the likelihood and consequence of events that have been carried forward into the EIA and defines a post mitigation risk score.

The list of risks considered within the chapter were developed through the identification of reasonably foreseeable risks in consultation with relevant contributors to this EIAR. The identification of risks focused on non-standard but plausible incidents that could occur at or as a result of the proposed project during the construction, operation and maintenance and decommissioning phases.

The potential risks include:

- Striking strategic infrastructure resulting in damage, disruption to services and / or fatalities / injuries.
- Contamination of ground or surface water. This is associated with construction works

- Major traffic accidents resulting from construction phase traffic or temporary construction traffic management measures
- Movement of peat within the site during construction / Landslide
- Flooding of site during construction, operational and decommissioning stage.
- Collision risk resulting in damage to infrastructure and/or injuries
- Incident at nearby Seveso site involving release of dangerous substances.
- Collapse / damage of structures/infrastructure.
- Risks related to climate change such as increased frequency and strength of storms, heightened flood risk, risk of extreme temperatures.
- Collapse / damage of turbine structures / infrastructure at substation
- Fire at wind turbines during construction / operation phase resulting in damage to infrastructure and/or injuries
- Ice falling from wind turbine blades

The proposed project has been designed and built-in accordance with the best practice measures set out in this EIA Report and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design.

It was found that following the screening and assessment phases and with all mitigation measures implemented that there is no significant residual effects from the proposed project in relation to the risk of major accidents and/or natural disasters.

18. INTERACTIONS OF THE FOREGOING

With any development there is the potential for interaction between effects of the different environmental aspects. As part of the requirements of the EIAR, the interaction of the effects on the surrounding environment has been addressed in Chapter 18 Interaction of the Foregoing.

A matrix is presented in Chapter 18 that outlines the different environmental aspects which have potential to interact as a result of the proposed project. Interactions have been clearly identified in the early stages of the project and where the potential exists for interaction between environmental impacts, the EIAR specialists have taken the interactions into account when making their assessment. Potential interactions (both positive and negative) have been considered for the construction, operation and decommissioning phases of each of the different environmental aspects.

All environmental factors are interrelated to some extent. Having assessed the interaction of potential effects during the construction, operational and decommissioning phases it has been determined that there are no additional interactions further to those described in the chapter. The detailed assessment of the interactions has found they do not give rise to any significant effects.

The proposed project will have some positive effects on an international, national, regional and local level, particularly in terms of helping to achieve renewable energy targets and domestic energy security and through the use of the community benefit scheme to support local initiatives. It is important to note that many of the effects (such as Landscape & Visual) are almost entirely reversible upon decommissioning of the proposed project.