An Bord Pleanála

Inspector's Report

ABP-318446-23

Development	Proposed construction of Coumnagappul Wind Farm consisting of 10 no. turbines and associated infrastructure including internal access tracks, hardstandings, permanent met mast, onsite substation, internal electrical and communications cabling, temporary construction compound, drainage infrastructure and associated works related to construction of wind farm and connection to the National Electricity Grid.
Location	In the townlands of Coumnagappul, Carrigbrack, Knockavanniamountain, Barricreemountain Upper and Glennaneanemountain, Skeehans, Lagg, Co. Waterford. (www.coumnagappulwindfarmSID.ie)
Local Authority	Waterford City and County Council
Applicant(s)	Coumnagappul Wind Farm Limited.
Type of Application	Strategic Infrastructure, Section 37E.

Prescribed Bodies	Department of Housing Local Government and Heritage, (DHLGH) Office of Public Works (OPW) Irish Aviation Authority. (IAA) Transport Infrastructure Ireland (TII) Uisce Eireann (UE) Department of Transport Failte Ireland An Taisce
Public Submissions	Majella Quinlivan, Secretary Nire Valley Bogtrotters Walking Club, Doris Reinish Brian Walsh Vicky Heslop Paul & Edel Grace Michael O Donoghue Martha Mannion Nee O Grady, Nora O Grady Folan, Helen O Grady Rathgormack Ramblers Club Committee Mary Fenton Richard and Julia Gorodecky Brian Fenton Shane Fogarty Ed Morrissey Stephen Mullins

Comeragh Community Development Group

Eddie Phelan

Caroline Quealy

James and Martina Cullinan

Patrick G Phelan

Kelly and Brian Canty

Patrick and Denise Cullinan

Colin and Noreen Dunne

Nicholas and Kitty Quealy

Claire Byrne

Clotilde and David Kelly

Amanda McCarthy

Helen Fraher

Kevin and Marianne Walsh

Jack Cullinan

Helen Butler

Úna and Stephen Ryan

Jimmy and Alice Cullinan

Paudie Cullinan

Patrick Foran

Edmond Cullinan

Nire Valley Gun Club

Kaye Mullaney and William O Grady

Mark Chapman

Noel W Peilow and Phillippa M Sellar

Jackqueline Walsh

Elizabeth Alderton

JC Alderton

	Fintan Veale
	Alice Hickey
	Thomas Cullinan
	PJ O Meara
	Marc O Connell and Grace O Meara
	Clive Banes
	Frank Sweeney.
	Declan McGrath
	Peter Sweetman and Associates
	Anne Sweeney
	Della Ahearne
	Patrick and Alice Coffey
	Cathriona Walsh
	N Windsor Smith
	Tim van der Knaap
	Katie Cullinan
	Thomas Morrissey
	Therese Casey
	Mountaineering Ireland
	Cllr Liam Brazil and Cllr Seanie Power
	Mary Longan
Date of Site Inspection	16th September 2024
Inspector	Bríd Maxwell

Contents

Introduction

1.1. This is an application made by Coumnagappul Wind Farm Limited for strategic infrastructure under section 37E of the Planning and Development Act, 2000, as amended. The application is made pursuant to formal notice issued by the Board dated 19th May 2023, where it determined under section 37B(4)(a) of the Planning and Development Act, as amended, that the proposed development falls within the scope of paragraphs 37A(2)(a), (b) and (c), requiring that the application be made directly to the Board.

2.0 Site Location and Description

2.1. The site is located within an area of farmland and upland heath within the townlands of Bleantasourmountin, Carrigbrack, Coumnagappul, Glennaneanemountain, Kileany, Kileany Mountain, Knockavanniamountain and Reanadampaun Commons. The site lies circa 15.8km north of Dungarvan and circa 14.5km south east of Clonmel. The site encompasses a total land area of 211 hectares and falls within the functional area of Waterford City and County Council.

2.2. As described within the application documentation the site is located along the transitional western foothills of the Comeragh Mountains and is contained within a horseshoe ridge, formed by the Comeragh Mountains, Milk Hill and Bleantasour Mountain, that opens to the south. The site's elevation ranges between c2,250-45,200m above ordnance datum (AOD) the most elevated locations being along the eastern extents of the site. Within the site vegetation is dominated by wet heath with areas of dense bracken, exposed rock, agricultural grassland, conifer plantation and dry heath. It is noted that extensive areas of heath habitat have been subjected to regular uncontrolled burning. The lower valley areas comprise improved agricultural grassland in mosaic with smaller areas of dense bracken and scrub. Conifer plantation occurs along a section of the internal access road and comprises mostly sitka spruce and lodgepole pine.

2.3. The landscape to the north, west and south of the site is sparsely populated and is characterised by typical transitional rural land uses such as pastoral farmland and extensive areas of commercial conifer forestry. To the east of the site extensive areas of moorland, heath and rocky outcrops occupy the more elevated mountaintop summits. The wider environment's predominant land use is pastoral farmland with

blocks of commercial conifer forestry. The site is located within the Colligan and Nier river waterbody catchments.

2.4. There are three operational wind energy developments within 20km of the proposed Coumnagappul Windfarm, two single turbine developments 5.1km west (150kilowatt kW tip height 44m), and 14km east (kW energy 60m tip height). Woodhouse Wind Farm (8 turbines 126m tip height) is located 17.2km to the west. The permitted Knocknamona Windfarm (ABP309412) 17.6km west of the site comprises 8 no turbines with a 146m tip height). Dyrick Hill a proposed windfarm which was recently refused by the Board (ABP Ref.317265[1]) lies 7.9km southwest of the site (12 turbines 185m tip height).

2.5. The nearest designated area is the Comeragh Mountains SAC which lies c740m to the east of the site.

2.6. The Grid Connection Route (GCR) is predominantly contained within the public road corridor with the exception of the start and finish points where cables will be terminated in the existing network substation at Dungarvan and the proposed on site substation.

3.0 **Proposed Development**

3.1. The proposal involves permission for the following:

- Construction of 10 no wind turbines with a blade tip height of 185m, a hub height of 104, and a rotor diameter of 162m.
- Construction of permanent turbine foundations and crane pad hardstanding areas and associated drainage.
- Construction of 25.43km of new internal access tracks and associated drainage infrastructure.
- Creation of 1 no new construction and operation access to the wind farm site.

[1] Refer to Section 5 Planning History for details.

- Construction of 1 no new construction and operation access to the permanent meteorological mast.
- All associated drainage and sediment control including interceptor drains, cross drains, sediment ponds and swales.
- Installation of new watercourse crossings including a 15m single span bridge crossing, an open bottomed culvert and a piped culvert.
- Removal and replacement of existing culverted watercourse and drain crossings along the cable route.
- Construction of 1 no permanent on site 110kV electrical substation and associated compound including, welfare facilities, electrical infrastructure, parking, wastewater holding tank, rainwater harvesting tank, security fencing
- All associated infrastructure services and site works including excavation, earthworks and spoil management.
- Development of 1 no on site borrow pit (150m Lx100mWx14mD) and associated ancillary drainage which will also act as a peat / spoil deposition area.
- 2 no temporary construction compounds and associated ancillary infrastructure including parking,
- Forestry felling of 5.4ha (53.995m2) to facilitate construction and operation of the proposed development.
- Installation of medium voltage electrical and communication cabling underground between the proposed turbines and the proposed on site substation and associated ancillary works.
- Installation of 22.47km of high voltage (110kV) and communication cabling underground between the proposed on site substation and the existing Dungarvan substation and associated ancillary works. The proposed grid connection cable works will include 6 no existing watercourse and drain crossings, three of which will be crossed by Horizontal Directional Drilling. The grid also includes the installation of 30 no pre-cast joint bays,
- Erection of 1 no permanent meteorological mast to a height of 110m above ground level with a 4m lighting pole on top.

- Temporary enabling works to accommodate turbine delivery.
- Load bearing surfaces and temporary watercourse and drain crossings.
- Temporary removal of road signage, utility poles bollards and fencing.

A 10 year permission and a 40 year operational life from the date of commissioning of the entire windfarm is being sought.

A permanent planning permission is being sought for the grid connection and 110kV substation as these will become an asset of the national grid under the management of Eirgrid and will remain in place upon decommissioning of the wind farm.

4.0 Application - Accompanying documents

4.1 The application is accompanied by the following information:

- Completed application form
- Landowner consent letters
- Planning application drawings
- Statutory notices
- Schedule of prescribed bodies
- EIA Portal confirmation notice
- Planning Statement
- Environmental Impact Assessment Report (EIAR):
    - Volume 1: Non Technical Summary
    - Volume 2 Main EIAR
    - Volume 3 Appendices (Part One & Part Two)
    - Volume IV EIAR Figure Index Sheet
    - Schedule of Commitments
- Report to inform the Appropriate Assessment Process (Screening and Natura Impact Statement NIS)

- Standalone website: Coumnagappul Wind Farm SID – Website for Public Consultation

5.0 Planning History

211029. Retention permission granted 21/12/2021 for an existing lattice type meteorological mast. 80m in height and associated instruments the nature of proposed use of the structure is to measure local climatic conditions. Permission is sought for a period of 12 month. The mast was erected on site as exempted development pursuant to Class 20(1), Part 1, Schedule 2 of the Planning and Development Regulations 2001 (as amended) in the townland of Carrigbrack Co Waterford.

Windfarm proposals in the vicinity.

ABP 317265 Recent decision to refuse by the Board 3/10/2024. Application sought permission for the construction of Dyrick Hill Windfarm comprising 12 no wind turbines and related works. Townlands of Ballymacmague North, Ballymacmague South, Ballynaguilkee Lower, Ballynaguilkee Upper, Broemountain, Carrigaun (Mansfield) and others, Co. Waterford. Reasons for refusal were as follows:

"Having regard to Policy Objective UTL 13, which seeks to facilitate and encourage proposals for renewable energy generation '…developed fully in accordance with the Waterford Renewable Energy Strategy (RES), the wind energy designation map (Appendix 2 of the RES), the Waterford Landscape and Seascape Character Assessment (LSCA) undertaken to inform this Development Plan and the National Wind Energy Guidelines, or any subsequent update/ review of these', and given the proposed development site falls within an area identified as 'Exclusion Zone' on the RES Wind Energy Strategy Maps for new wind energy developments, it is considered that, notwithstanding broad policy support for the development of wind energy in the county area, by reference to European, national, regional and local policy, the specific policy context as set out in the Waterford City and County Development Plan 2022-2028 has equally provided for defined locations where wind energy projects may variously be supported, deemed open for consideration or excluded. The proposed development is in an identified exclusion zone for wind energy. In this context it is considered that the proposed development would materially contravene policy objective UTL 13 of the Waterford City and County Development Plan 2022-2028.

Furthermore, having regard to the totality of the documentation on file, including submissions received, the Board determined that no evidence has been provided which would support a material contravention of the Waterford City and County Development Plan 2022-2028 in this case. In

reaching this conclusion, the Board considered relevant renewable energy policy in the statutory development plan, and in applicable European, national and regional policy and guidance, and determined that a refusal of permission in this case would not militate against the wider ability for planning consent to be secured for wind energy proposals in County Waterford, subject to the principles of proper planning and sustainable development and consistent with applicable development plan policy and objectives, and accounting for European, national and regional policy and guidance, including consistency with the national Climate Action Plan. In this regard it is considered that the proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

The subject site is located within and adjacent to an upland area designated 'Most Sensitive' in the Waterford Landscape and Seascape Character Assessment, undertaken to inform the development plan, in an area of scenic value. The proposed development by virtue of its layout and scale would adversely interfere with the intrinsic character, integrity and distinctive qualities of the landscape setting which it is considered necessary to preserve under the Waterford City and County Development Plan 2022-2028. The proposed development would be contrary to Policy Objective LO2 'To protect the landscape and natural assets of the County by ensuring that proposed developments do not detrimentally impact on the character, integrity, distinctiveness or scenic value of their area and ensuring that such proposals are not unduly visually obtrusive in the landscape, in particular, in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units'. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

3. The proposed development would result in the direct loss of 3.5ha of dry heath (4030) habitat, which is included in Annex I of the European Union Habitats Directive of 1992. This area of dry heath located on Broemountain forms part of a wider habitat area across the commonage area of Broemountain and across the Knockmealdown Mountains which supports nationally declining species, including Annex 1 species protected under the EU Birds Directive of hen harrier and golden plover, as well as other bird species of high and medium conservation concern. Having regard to the direct loss of 3.5ha of Dry Heath habitat and the lack of interrogation of the implications for the hen harrier recorded in the area, in addition to associated risk of displacement caused by the proposed turbines to hen harrier and golden plover in this area, the Board is not satisfied that the proposed development will not result in a significant loss of biodiversity. It is considered that the proposed development would be contrary to objectives ENV01, BD01 and BD02 of the operative development plan which seek to protect habitats listed in Annex I of the Habitats Directive, protect biodiversity and ecological connectivity, and achieve net gain in biodiversity enhancement and creation, and would be contrary to Article 4(4) of the Birds Directive (2009/147/EC) to avoid deterioration of habitats affecting protected birds. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area."

6.0 Policy Context.

6.1 International / EU Policy

Kyoto Principle – Operationalises the United Nations Framework Convention on Climate Change (UNFCCC) and commits industrialised countries/economies to limit and reduce GHG emissions in accordance with agreed targets.

COP21 Paris Agreement, COP25 Madrid, COP26 Glasgow, COP27 Sharmel-Sheik – Conference of Parties to UNFCCC, to evaluate the implementation of the Convention and negotiate new commitments. The most recent COP27 reiterated the agreement to work towards a limit for global warming of well below 2ºC.

European Green Deal – Introduced by the European Commission and provides a roadmap for Europe to becoming climate-neutral by 2050 and achieving a 55% cut in carbon emissions by 2030 (compared to 1990 levels).

European Climate Law 2021 – Puts into law the objectives of the European Green Deal and sets out targets for reducing greenhouse gas emissions in Member States.

REPowerEU – 2022 Communication from the European Commission to the European Parliament etc. to make Europe independent from Russian fossil fuels. Objectives include to move rapidly to 'clean energy' (including renewables) production.

EU Renewable Energy Directive (RED I) 2009/28/EC Article 4 requires each member state to produce a national renewable energy plan to achieve an overall reduction in greenhouse gas (ghg) emissions of 20%, a 20% increase in energy efficiency and 20% of energy consumption across the EU to come from renewable energy by 2020.

Member States are to achieve their individual binding target across the heat, transport and electricity sectors, apart from a sub-target of a minimum of 10% in the transport sector that applies to all Member States.

Ireland's overall target is to achieve 16% of energy from renewable sources by 2020. Ireland has set a non-legally binding target of 40% of renewable energy by 2020 (from a 2012 position of 19.6%).

Revised EU Renewable Energy Directive (RED II) 2018/2001/EU Introduces a new approach to calculating greenhouse gas reduction targets taking into account potential impacts of indirect land use change in relation to biofuels, bioliquids and biomass fuels.

The overall EU target for Renewable Energy Sources consumption by 2030 has been raised to 32%.

Member States must require fuel suppliers to supply a minimum of 14% of the energy consumed in road and rail transport by 2030 as renewable energy.

The RED II defines a series of sustainability and GHG emission criteria that bioliquids used in transport must comply with to be counted towards the overall 14% target and to be eligible for financial support by public authorities.

6.2 National Policy

National Planning Framework (NPF), 2018

The NPF is a high-level strategic plan to shape the future growth and development of the country to 2040. It is focussed on delivering 10 National Strategic Outcomes (NSOs). NSO 8 focuses on the 'Transition to a Low Carbon and Climate Resilient Society' and recognises the need to harness both on-shore and off-shore potential from energy sources including solar and deliver 40% of our electricity needs from renewable sources.

It is stated in the NPF that "new energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system, harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy to the major sources of demand".

Section 5.4, 'Planning and Investment to Support Rural Job Creation', notes that in meeting the challenge of transitioning to a low-carbon economy, the location of future national renewable energy generation will, for the most part, need to be accommodated on large tracts of land that are located in a rural setting, while also

continuing to protect the integrity of the environment and respecting the needs of people who live in rural areas.

It is a National Policy Objective (NPO 55) to 'promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050'.

National Energy Security Framework

Published in April 2022 – provides an overarching and comprehensive response to Ireland's Energy security needs in the context of the war in Ukraine. The framework outlines the structures in place to monitor and manage energy supplies.

The framework outlines proposals to speed up the country's shift to increased energy efficiency and indigenous renewable energy systems.

Climate Action Plan 2024

The Climate Action Plan 2024 approved in May 2024 is the third annual update to Climate Action Plan 2019 and the second to be prepared under the Climate Action and Low Carbon Development (Amendment) Act 2021. It builds on the introduction of carbon budgets and sectoral emissions ceilings in climate action plan 2023 and sets a course for Ireland's targets to halve emissions by 2030 and reach net zero no later than 2050.

Central to achieving these goals is the strategic increase in the share of renewable electricity to 80% by 2030. This includes ambitious targets of deploying 9 gigawatt (GW) of onshore wind, 8 GW of solar power, and at least 5 GW from offshore wind projects. Key targets for the electricity sector are set out in Chapter 12. These measures are vital not only for slashing electricity sector emissions but also for enabling the broader electrification of other sectors, thus multiplying the impact on overall emissions reductions. Climate Action Plan 2024 details the significant changes necessary to enhance the electricity grid's capacity and flexibility. This will accommodate the significant upsurge in renewable energy while ensuring the system's reliability and efficiency. Additionally, managing electricity demand through

innovative policies and technologies is crucial for aligning energy consumption with cleaner production.

Biodiversity Action Plan 2024 – Ireland's 4th biodiversity Action Plan sets out the national biodiversity agenda for the period 2023-2030 and aims to deliver the transformative changes required to the ways in which we value and protect nature. It seeks to continue to implement actions within the framework of five strategic objectives while addressing new and emerging issues:

Objective 1 – Adopt a whole of Government, Whole of Society approach to biodiversity.

Objective 2 – Meet urgent conservation and restoration needs

Objective 3 - Secure Nature's contribution to people.

Objective 4 – Enhance the evidence base for action on biodiversity.

Objective 5 – Strengthen Ireland's contribution to International biodiversity initiatives.

The Wildlife (Amendment) Act 2023 introduced a new public sector duty on biodiversity. The legislation provides that every public body, as listed in the Act, is obliged to have regard to the objectives and targets in the National Biodiversity Action Plan.

Ireland's National Energy and Climate Plan 2021-2030

The National Energy and Climate (NECP) Plan is an integrated document mandated by the European Union to each of its member states in order for the EU to meet its overall greenhouse gases emissions targets. The plan establishes key measures to address the dimensions of the EU Energy Union, including:

• To achieve a 34% share of renewable energy in energy consumption by 2030.

• To increase electricity generated from renewable sources to 70%.

Wind Energy Guidelines, 2006

These guidelines still constitute the official strategy guidance on wind farms under the provision of Section 28 of the Planning and Development Act 2000 (as amended). Advice is set out in relation to the design, siting, spatial extent, and height of turbines in various landscape character types. Details are also included for best practice for wind farm development on peatlands and flatland areas, and guidance is also provided on matters such as noise, shadow flicker, natural heritage, archaeology, architectural heritage, ground conditions, aircraft safety, wind take and potential cumulative effects.

` **Draft Wind Energy Guidelines, 2019**

The Board will note that these guidelines are still in draft form and have not been officially adopted as official guidance. The draft 2019 guidelines propose key amendments to the 2006 guidelines in terms of noise, visual amenity, shadow flicker and community engagement. Amendments include the application of more stringent noise limits in line with World Health Organisation (WHO) noise standards together with a more robust noise monitoring system and reporting system. Additional requirements are set out in relation to shadow flicker, community consultation obligation, community dividend and grid connections. A minimum setback distance for amenity purposes of 4 times tip height is required subject to a mandatory minimum setback of 500m from sensitive receptors.

6.3 Regional Policy

Regional Spatial and Economic Strategy (RSES) for the Southern Region 2040

The RSES recognises and supports the many opportunities for wind as a major source of renewable energy. Opportunities for both commercial and community wind energy projects should be harnessed having regard to the requirements of the DoHPLG Guidelines on Wind Energy. Wind Energy technology has an important role in delivering value and clean electricity for Ireland.

- RPO1: Environmental Assessment (a) Any reference to support for all plans, projects, activities and development in the RSES should be considered to refer to ‘environmentally sustainable development’ that has no adverse effects on the

integrity of European sites and no net loss of biodiversity, that shall be subject to appropriate feasibility studies, best practice site/route selection (to consider environmental constraints such as landscape, cultural heritage, the protection of water quality, flood risks and biodiversity as a minimum), environmental assessment including EcIA to support development management and where required, the completion of statutory SEA, EIA and AA processes as appropriate. (b) The RSES seeks to protect, manage, and through enhanced ecological connectivity, improve the coherence of the Natura 2000 Network in the Southern Region. (c). RSES support for other plans/ programmes (and initiatives arising) is on the basis of appropriate SEA, SFRA, EIA and AA processes being undertaken in order to ensure the avoidance of adverse effects on European Sites and ensure implementation of mitigation measures where required. (d). Development Plans shall include an objective for the protection of European sites and Natural Heritage Areas (designated and notified proposed NHAs).

- RPO 95 Sustainable Renewable Energy Generation. It is an objective to support implementation of the National Renewable Energy Action Plan (NREAP), and the Offshore Renewable Energy Plan and the implementation of mitigation measures outlined in their respective SEA and AA and leverage the Region as a leader and innovator in sustainable renewable energy generation.

- RPO96 Integrating Renewable Energy Sources It is an objective to support the sustainable development, maintenance and upgrading of electricity and gas network grid infrastructure to integrate renewable energy sources and ensure our national and regional energy system remains safe, secure and ready to meet increased demand as the regional economy grows.

- RPO 99: It is an objective to support the sustainable development of renewable wind energy (on shore and off shore) at appropriate locations and related grid infrastructure in the Region in compliance with national Wind Energy Guidelines.

6.4 Local Policy

Waterford City and County Development Plan 2022-2028

Chapter 6 – Utilities Infrastructure, Energy and Communication

Section 6.6 Renewable Energy -

Table 6.3 sets out the Renewable Energy Targets 2030 for the county. The target for on shore wind energy is 211.20 MW. Taking account of the 97.72MW operational or permitted there is a shortfall of 113.48MW. The targets as detailed are considered to be minimum targets.

Policy Objective UTL 13 – Renewal Energy

It is the policy of Waterford City and County Council to promote and facilitate a culture of adopting energy efficiency/ renewable energy technologies and energy conservation and seek to reduce dependency on fossil fuels thereby enhancing the environmental, social and economic benefits to Waterford City and County. It must also be recognised that other sources of electricity generation such as natural gas, particularly renewable and indigenous gas, will continue to have a role to play in the transition to a low carbon economy. As such, renewable energy developments may require support from such sources in times of high energy demand. This will be achieved by:

- Supporting the delivery of renewable energy to achieve the targets identified in Table 6.3 of the Development Plan.
- Facilitating and encouraging, where appropriate, proposals for renewable energy generation, transmission and distribution and ancillary support infrastructure facilities including the necessary infrastructure required for the development of offshore renewable energy developments developed fully in accordance with the Waterford Renewable Energy Strategy, the wind energy designation map (Appendix 2 of the RES), the Waterford Landscape and Seascape Character Assessment undertaken to inform this Development Plan, and the National Wind Energy Guidelines, or any subsequent update/ review of these.
- The Wind Energy Designation Map and the Landscape and Seascape Character Assessment Map identify different landscape character areas and associated landscape sensitivities. These designations encompass the concept of buffers between areas of sensitivity which vary across the different landscape character types and their different locations. These buffers allow for a gradual change between contrasting landscape sensitivities and

associated wind energy designations to be considered, as necessary, when determining any development proposal.

- Promote and encourage the use of renewable energy, and low carbon resources, namely solar photovoltaic, geothermal, heat pumps, district heating, solar thermal, hydro, tidal power, offshore and onshore wind, biomass as well as micro-generation among business, agriculture, education, health, and other sectors.
- Promoting, encouraging, ensuring, and facilitating community engagement, participation and implementation of/ in renewable energy projects.
- The preparation and implementation of a Climate Action Plan (including adaptation and mitigation measures) for Waterford.
- To support in conjunction with other relevant agencies, wind energy initiatives, both onshore and offshore, and wave energy, and onshore grid connections and reinforcements to facilitate offshore renewable energy development when these are undertaken in an environmentally acceptable manner.

At initial design stage full consideration should be given to reasonable alternatives and existing infrastructural assets. In this regard environmental assessments should address reasonable alternatives for the location of new energy developments, and where existing infrastructural assets such as sub-stations, power lines and roads already exist within proposed development areas, then such assets should be considered for sustainable use by the proposed development where the assets have capacity to absorb the new development.

All planning applications for Renewable Energy Projects such as wind farms and solar farms shall be accompanied by a Decommissioning and Restoration Plan (DRP) consistent with the Wind Energy Guidelines 2006 or any update thereof. Issues to be addressed shall include details of proposed restorative measures, the removal of above ground structures and equipment, the restoration of habitats, landscaping and/or reseeding roads etc.

Policy Objective UTL 14 - Energy Developments & Human Health

Proposals for energy development should demonstrate that human health has been considered, including those relating to the topics of:

- Noise (including consistency with the World Health Organisation's 2018 Environmental Noise Guidelines for the European Region developments must comply with the Wind Energy Development Guidelines (2006), or any subsequent update/ review of these),
- Shadow Flicker (for wind turbine developments, including detailed Shadow Flicker Study),
- Ground Conditions/Geology (including landslide and slope stability risk assessment),
- Air Quality; and,
- Water Quality.

UTL 19 Undergrounding Cables

Where undergrounding of cables is being pursued, proposals should demonstrate that environmental impacts including the following are minimised:

- Habitat loss as a result of removal of field boundaries and hedgerows (right of way preparation) followed by topsoil stripping (to ensure machinery does not destroy soil structure and drainage properties).
- Short to medium term impacts on the landscape where, for example, hedgerows are encountered.
- Impacts on underground archaeology.
- Impacts on soil structure and drainage; and
- Impacts on surface waters as a result of sedimentation.

Chapter 9 - Climate Action, Biodiversity and Environment

ENV 01 Through implementation of the Development Plan we will cumulatively contribute towards – in combination with other users and bodies – the achievement of the objectives of the regulatory framework for environmental protection and management, including compliance with EU Directives - including the Habitats

Directive (92/43/EEC, as amended), the Water Framework Directive(2000/60/EC), the Birds Directive (2009/147/EC), the Environmental Impact Assessment Directive (2011/92/EU, as amended by 2014/52/EC) and the Strategic Environmental Assessment Directive (2001/42/EC) – and relevant transposing Regulations.

Biodiversity Assessment Policy Objectives

BD 01 We will protect and conserve all sites designated or proposed for designation as sites of nature conservation value (Natura 2000 Network, Ramsar Sites, NHAs, pNHAs, Sites of Local Biodiversity Interest, Geological Heritage Sites, TPOs) and protect ecological corridors and networks that connect areas of high conservation value such as woodlands, hedgerows, earth banks and wetlands. We will contribute towards the protection and enhancement of biodiversity and ecological connectivity, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands, the coastline, geological and geo-morphological systems, other landscape features, natural lighting conditions, and associated wildlife where these form part of the ecological network and/or may be considered as ecological corridors or stepping stones in the context of Article 10 of the Habitats Directive.

BD07: We will protect plant and animal species and habitats which have been identified by the EU Habitats Directive (1997), EU Bird Directive (1979), Wildlife Act (1976) and Wildlife (Amendment) Act 2000 and the Flora Protection Order (2015) and ensure development does not impact adversely on wildlife species or the integrity and habitat value of the site.

BD 08 We will assess all proposed developments at each level of the Development Planning process from City & County Development Plan, Local Area Plan to project level to determine potential for significant effects on the conservation objectives and /or adverse impact on the integrity of the Natura 2000 network and ensure that the requirements of Articles 6(3) and 6(4) of the Habitats Directive are fully satisfied.

BD 09 We will ensure a sufficient level of information is provided in development applications to enable a fully informed assessment of impacts on biodiversity to be made. Ecological impact assessments submitted in support of development proposals shall be carried out by appropriately qualified professionals and ecological survey work carried out at optimal survey time to ensure accurate collation of ecological data.

Chapter 10 – Landscape, Coast/Marine and Blue Green Infrastructure

L01 National Landscape Strategy

We will support provisions of the 2014 National Landscape Strategy and provide for the sustainable management of all of County Waterford's landscapes including archaeological landscapes, waterway corridors, coastal, upland, rural and peri-urban landscapes.

Policy Objective L02 – Protecting our Landscape and Seascape

To protect the landscape and natural assets of the County by ensuring that proposed developments do not detrimentally impact on the character, integrity, distinctiveness or scenic value of their area and ensuring that such proposals are not unduly visually obtrusive in the landscape, in particular, in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units.

Policy Objective L03 – Landscape and Seascape Character Assessment

Assess all proposals for development outside of settlements in terms of the 2020 Landscape and Seascape Character Assessment (Appendix 8) and the associated sensitivity of the particular location….There will be a presumption against developments which are located on elevated and exposed sites and where the landscape cannot accommodate such development with reasonable and appropriate mitigation.

Policy Objective L04 - Scenic Routes and Protected Views

Protect the scenic routes and specified protected views identified in the Landscape Character Assessment (Appendix 8) including views to and from the sea, rivers, landscape features, mountains, landmark structures and urban settlements from inappropriate development that by virtue of design, scale, character or cumulative impact would block or detract from such views.

Chapter 11 – Heritage

Policy Objectives AH01 National Monuments Act

It is the policy of the Council to protect, and enhance in an appropriate manner all elements of the archaeological heritage…

Policy AH02 **Managing Development**

We will contribute, as appropriate, towards the protection and sympathetic enhancement of archaeological heritage….

We will ensure that archaeological excavation is carried out according to best practice as outlined by the National Monuments Service, Department of Housing, Local Government and Heritage, the National Museum of Ireland and the Institute of Archaeologists of Ireland.

Policy Objective AH03 Preservation of Archaeological Material.

Waterford City & County Council shall, in an appropriate manner, secure either by preservation in-situ or preservation-by-record, the archaeological heritage.

Policy AH 04 Archaeological Impact Considerations

***Appendix 7* sets out the Renewable Energy Strategy 2016 – 2030 for Waterford**

Section 13 sets out strategic planning considerations for renewable energy. Appropriate consideration of landscape capacity to accommodate renewable energy development shall be carried out in the assessment of any proposal.

Appendix 2 of the Strategy notes three wind designation areas – preferred areas, areas open to consideration and no go areas/exclusion areas.

- The application site is within an area designated as an 'Exclusion Zone.'

***Appendix 8* – Landscape and Seascape Character Assessment**

- As per Map A8.1, the application site lies within landscape character type uplands.
- As per Map A8.3, the application site is within an area considered to be 'Most Sensitive.'

Section 4.1(a) Most Sensitive Areas

Landscape Character Areas and features designated as Most Sensitive represent the principal features which create and sustain the character and distinctiveness of the surrounding landscape. To be considered for permission, development in or in the environs of these areas must be shown not to impinge in any significant way

upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites.

Section 4.1(b) Areas Designated as Most Sensitive

The coastline, all headlands and promontories.

The banks of the rivers;

The shoreline of all lakes;

The skylines of upland areas;

Section 5 – sets out Scenic Routes and Protected Views.

Scenic Route 8 Northwest from Dungarvan to Tooraneena on the R672, Third class road north to Ballymacarbry. Join R671 to Clonmel taking the R678 and turning south for third class road through the Comeraghs.

7.0 EIA Screening

Schedule 5 of the Planning and Development Regulations, 2001 (as amended) transposes Annex I and II of the EIA Directive and sets out prescribed classes of development, for which an environmental impact assessment is required.

The following classes are noted:

Part 2 (3)(i) Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts.

An EIAR accompanies the application.

8.0 European Site Designations

The following proximate SACs and SPAs are noted.

Comeragh Mountains SAC (001952)

Nier Valley Woodlands SAC (000668)

Lower River Suir SAC (002137)

Blackwater River (Cork Waterford) SAC (002170)

Dungarvan Harbour SPA (004032)

Mid-Waterford Coast SPA (004193)

Glendine Wood SAC

9.0 Submissions

9..1 Planning Authority Submissions

Record of Meeting of Waterford City and County Council

Minutes of the Special Meeting of Dungarvan and Lismore District held on 30th January 2024 at which the proposed Coumnagappul Wind Farm was discussed are noted. I note comments of elected members expressing concerns with regard to the scale of the proposal and the resolution of the Council to endorse the recommendation of the Chief Executive to refuse permission.

Planner's report notes:

Location of the site within an areas designated as "Most Sensitive."

Assessment by An Bord Pleanála should fully consider potential cumulative impacts associated with permitted and proposed wind developments in the area and the wider landscape.

Significant number of sites on the Record of monuments and places which are included within or lie in close proximity to the site.

Site is within catchment of Colligan River, Finisk River and Nire River with Finisk forming part of the Blackwater River SAC and the Nire forming part of the Lower River Suir SAC.

Proximity to a number of SPAs and SACs.

Regard to blue dot river sub basins.

Concerns regarding the carrying capacity of the local road network and the adequacy of the local road network to accommodate heavy construction traffic.

Concerns regarding the undergrounding of the grid connection with both direct impacts on construction of the road network and long term maintenance and upgrades to the road network.

Planning Authority strongly rejects the findings and conclusions contained in the EIAR as they relate to the visual impacts on this sensitive upland area, the nature and scale of the impact on the local road network during construction phase and conflicts between the proposal and the adopted County Development Plan policies and objectives in relation to the siting and location of large scale wind energy infrastructure.

In the event that the Board decides to grant permission the Planning Authority requests that at a minimum conditions be applied to include reduction in the scale of the turbines. Conditions to include:

- 25 year permission from day of commissioning
- Ecological monitoring
- Turbines to have maximum tip height 150m
- Noise limits in combination with other permitted wind energy development.
- Equipment and software to mitigate shadow flicker in combination with other permitted wind energy development.
- Transport Management Plan, rectification of road damage.
- Reinstatement programme.
- Archaeological appraisal, monitoring of site development works,
- Clear felling in accordance with forest service guidelines.
- Construction Environment Management Plan.
- Environmental Monitoring.
- Bond to ensure reinstatement of public roads.

- Bond to secure satisfactory reinstatement of the site.
- Special Financial contrition Section 48 2(c) in respect of works to the public road in the vicinity of the site which are undertaken by the Local Authority. Amount to be agreed.
- Financial contribution of €10,000 per MW in accordance with the adopted Development Contribution Scheme.
- Details of proposed community benefit scheme to be submitted for written agreement prior to commencement of development.

The Planning Authority recommends refusal for the following reason

" Notwithstanding the general planning policy support for wind energy at National, Regional and Local policy level, including Policy Objective UTL 13 of the Waterford City and County Development Plan 2022-2028, which seeks to support where appropriate, proposals for renewable energy generation, transmission and distribution and ancillary support infrastructure facilities, in relation to the specific sites which is the subject of this application, that policy goes on to state that all such proposals shall be considered having regard to the Wind Energy Designation Map (Appendix 2 of the Renewable Energy Strategy) and the Waterford Landscape and Seascape Character Assessment which form an integral part of the adopted Development Plan.

The subject site is located in an upland area which is designated as "No Go/Exclusion Area" for wind development and as "most sensitive" in terms of landscape character with very distinctive features with a very low capacity to absorb new development without significant alterations of existing character over an extended area.

In addition, Landscape Policy Objective L02 of the Waterford City and County Development Plan 2022- 2028 states that protection of the landscape and natural assets of the county shall be a priority having regard to the character, integrity, distinctiveness or scenic value of specific areas by ensuring that development proposals are not unduly visually obtrusive in the landscape, in particular, in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units.

The proposed development would be sited on lands that area located within an area where wind farm development is not normally permissible for reasons relating to landscape sensitivity and, accordingly, it is considered that the proposed development would materially contravene policies UTL 13 and L 02 of the Development Plan and would, therefore, be contrary to the proper planning and sustainable development of the area."

9.2 Submissions from Prescribed Bodies

9.2.1 Department of Housing Local Government and Heritage.

A number of concerns are raised with respect to

Loss of Annex I Habitats. Drainage and Hydrology

Ornithology

The main issue relates to the permanent destruction of 7.25ha of dry siliceous heath and 4.49ha of wet heath. These are habitats of ecological value on their own but are particularly important in this location because they are connected to similar qualifying interest (QI) habitats within the directly adjoining Comeragh Mountains SAC and therefore enhance and support these areas.

The greater the area of a habitat the more robust it is and more likely to withstand pressures. It is acknowledged that these habitats have undergone some damage however remain directive listed Annex I habitats of conservation value. These habitats often occur on the site in mosaic with acid grassland and management influences the extent of each.

Some of the proposed development area has previously been surveyed and mapped by the NPWS and is recorded as Annex I wet heath in particularly T1, T2, T4 and T12. Furthermore, turbines T11, T10, T8, T7 and T6 are in an area not covered by the NPWS survey but in the Department's view also contain significant area of Annex 1 habitat in mosaic with other related upland habitats. There may also be degraded habitat such as bracken and encroaching grassland but overall the habitat is strongly linked to Annex I wet and dry heath.

Management of the site has caused some degradation in quality of habitat through grazing regime and inappropriate burning but in the Department's view remains

Annex I heath and could be restored to better condition again through appropriate management. The area is also hydrologically, geologically and geographically linked to the Annex 1 habitats within the adjoining Comeragh Mountains SAC, being effectively an ex-situ extension of the habitats outside the SAC boundary. The connectivitiy and ecological continuity of the Comeragh Mountains will therefore be impacted by removing these habitats. A review of historic areal imagery indicates greater heath cover of the area in past. The proposed development will be in combination with such changes. The Department accepts there is evidence of damaging activities and presence of negative indicator species and absence of some positive indicator species at some sample points surveyed but they are nevertheless gradations in time and management of the same dry and wet heath habitat outlined in Annex I of the Habitats Directive. In addition to the 13.19ha of heath it is likely that 4.49ha of wet grassland and 1.73ha of bracken within the site could, with appropriate management, also be restored to conservation value habitats. It would be of some concern if ecologically inappropriate management of a conservation value habitat leading to some degradation could facilitate or become possible justification for destruction of the habitat entirely by another means. It is hoped that regulation combined with increased public awareness and increased financial incentives (ACRES Comeragh Upland Communities European Innovation Partnership Project EIP[2]) to better manage such upland areas will in time improve ecological conditions. Ecologically rich areas, particularly those attached to existing Natura 2000 sites, such as this area would be among the first choice should it be necessary or desirable to increase the area of land formally identified for conservation in the future.

The vegetation assessment prepared to support the application did record one sample of what they consider Annex 1 quality (Relevé 1) and a greater number of sample points may have presented a different overall picture. The assessment effectively carried out 13 relevés across 110ha (51.8ha dry heath and 58ha of wet heath). The *Guidelines for a National Survey and Conservation Assessment of Upland Vegetation and Habitats in Ireland* recommends 12 monitoring stops for each habitat in areas 50-100ha, therefore this Department considers at least 24 monitoring points would have

[2] ACRES Agri Climate Rural Environmental Scheme – Integral to Ireland's Common Agricultural Policy Strategic Plan aimed at assisting farmers in enhancing biodiversity, climate, air and water quality on their farms.

been more appropriate. The assessment concluded for relevés 3 and 9 that there were no links to Annex 1 even though there were not surveyed due to burning at the time of survey. While inappropriate burning can lead to degradation of habitat, planned burning can also be used as a tool to manage Annex 1 heath. The fact that these relevés were on fire does not exclude them from being Annex 1 habitat. The Department disagrees with conclusions relating to several of the relevé that were carried out, for example the conclusion of no link to Annex I habitat due to the absence of Erica tetralix, when Erica tetralix occurs widely but didn't fall within the selected 2x2m sample points, fails to see the habitat in context. The Department disagrees with similar conclusions in relation to the percentage of bare ground or the presence of negative indicator species without seeing the context of surrounding habitat.

Many areas of habitat with the Comeragh Mountains SAC are also damaged through management practices but these and the proposed development site can be restored to better ecological status through better management, this is detailed in section 1.3 of the Comeragh Mountains SAC Conservation objectives supporting documents. The current assessment of the conservation status of wet and dry heath within the SAC is "Unfavourable – Inadequate." The overall objective of the Habitat Directive, in particular Articles one and two, is to ensure that certain listed species and habitat types, including Annex I habitats, are maintained, or restored, to a favourable conservation status within the EU. This applies across member states and not just inside the Natura 2000 network. In terms of Article 17 Guidance, the area of these habitats is among the three criteria that Ireland is obliged to access and report on. The Favourable Reference Area (FRA) is the total national area that a habitat should cover in order for Area of the habitat to be considered in favourable conservation status. According to the guidance the FRA cannot be smaller than the habitat area at a date of entry into force of the Directive and must be without significant changes in distribution pattern within range. The most recent assessment (2019) determined that both the short term and long term trend in the area of the FRA for Wet heath (4010) in Ireland was decreasing with future prospects listed as poor and summarised overall conservation status as Bad with a decline in the habitat overall and in particular an increase in the area with unfavourable structure and functions. In the case of dry heath (4030) area trends are also decreasing with future prospects determined as poor and

summarised overall conservation status as bad, Therefore, further losses would be incompatible with attaining the FRA.

Regarding drainage and hydrology

Extensive drainage and excavation works, will lead to drying out of habitats well beyond the immediate footprint of works. The proposed extensive road construction 25.43km is likely to have a drying effect over a significant adjoining area which is not quantified in the assessment. Mitigation in relation to drainage concentrates on the prevention of sediment entering watercourses which is important but also of ecological concern is the alteration of the hydrological regime and removal of large volumes of water from peatland habitats which is ecologically detrimental. The importance of re-wetting peatlands to restore habitats and reduce carbon loss has been recognised nationally. The Department does not have specialist hydrological consultation available to independently assess the extent of such impact on adjoining wetland habitats such as blanket bog and wet heath. The Board should fully consider these impact particularly any potential to adversely impact on such habitat within the Comeragh Mountains SAC but also on the FRA for Annex I habitats. Assessment should include consideration of climate change and in particular how predicted longer dry periods in combination with the proposed project could exacerbate drying out water dependent habitats.

Ornithology.

Noting location in largely undisturbed habitats of conservation interest which provide habitat to several bird species of high conservation concern and adjoining larger areas of ecologically important habitat, the site is an attractive area for a subset of the Irish avifauna adapted to upland areas many of which are of conservation concern. Some of these species for example hen harrier and merlin require very large areas of specific habitat to form successful territories and therefore a large development site such as this one, while not forming an entire territory forms an important part of a larger unit. Connected habitats are ecologically more valuable than isolated ones and of particular importance for the species that require large territories. Scale is important in conserving these species and it is important that they

can range over large undisturbed areas and alternate between pieces of habitat which for various reasons (e.g. burning, agricultural activity, forestry works etc) may become temporarily unsuitable but will later be used again. This is demonstrated by the recent prolonged (July-Nov 2023 possibly still present) occupation of an areas outside but close to the proposed site of a wild Golden Eagle. This bird does not carry any artificial tags or markings and is therefore believed to be wild and not part of any release programme. Such a species requires very large undisturbed upland areas. Its presence is considered a reflection of the quality and extent of the habitat. Given the mobility of such species the Department believes the area proposed for development forms part of an area used by the bird. It is entirely possible, even likely that this bird will leave the area, and it is not suggested that the area currently holds a long term resident population, however the occurrence is indicative of the value of the habitat.

If such species are ever to re-establish populations they will require areas such as the greater Comeragh Mountains Area. The presence of the Wild Golden Eagle also overlapped with the presence of two White Tailed Sea Eagles believed to be part of the current reintroduction programme. Eagles would be particularly sensitive to windfarm development and while it is accepted that they were not detected during the surveys of the site they are now a well-known presence and proximity to the development should be considered in the EIAR.

It is apparent from the surveys that a range of both Birds Directive Annex I and Red listed birds of conservation concern Ireland occur in the zone of influence of the development and in Department's view several of these will be adversely affected to varying degrees by the development. The ornithological significance of the loss of a block of upland habitat such as is proposed is difficult to measure in a national context and likely small as a percentage of national populations but is nevertheless an adverse effect on already declining species. The area is clearly within both breeding and wintering territories of hen harrier and merlin both listed on Annex I of the Birds directive and the removal of this significant area of habitat from their range both through habitat destruction and displacement would be a negative impact on them. There is no national population estimate for Merlin in Ireland, but 28-41 pairs are estimated to be present in the SPA network. In the case of the National Hen Harrier survey estimated national population at 108-157 pairs therefore the direct

loss or loss through degradation of occupied territory in combination with other pressures is of concern. The wintering population of annex I species Golden Plover also use the site and negative impact arises through loss of foraging area and other associated factors. Red listed birds of conservation concern in Ireland 2020-2026 Red Grouse, Kestrel, Meadow Pipit and Snipe are present on site and Woodcock may also be present (had appropriate survey been carried out).

Regarding of hen harrier the Department acknowledges the surveys did not detect a nest on site, however the repeated presence of birds during breeding period and in particular the presence of a female harrier during the period, indicates a nest was close and that the area makes up a core portion of hen harrier territory. Similar is true for Kestrel and Merlin. Nests do not need to be within the development site for adverse effects to occur and species, particularly for merlin which often relocate nest sites within suitable territories between breeding seasons, emphasising the importance of the territory rather than the site chosen to nest in any one year.

Regarding Golden Plover, the Department has concerns in relation to the assessment and conclusions drawn. Significant usage of the site was detected. Golden Plover are known to be active at night but no meaningful survey of nocturnal usage was carried out. Collision risk assessment is carried out based on daytime activity in the absence of knowledge regarding night time. Collision risk assessment also based on the exclusion of significant sightings of flocks of birds on the basis that they are above the height that would be the sweep zone of the turbines. Both distance and especially height estimates for birds can be prone to substantial error. No evidence has been provided to demonstrate how such errors have been measured or controlled. Such errors can be reduced through use of technology. Such error is compounded by the use of several different observers, with no documented calibration over different survey periods. Errors in extrapolation can be compounded by other variables such as avoidance rates based on turbine sizes different to those proposed and recording conditions which may not reflect nocturnal or poor visibility conditions such as bad weather often experienced in upland areas or a combination of both. The addition of lighting also further complicates predictions. Lighting on turbines in some circumstances may reduce collision risk from lack of visibility, but in adverse weather conditions night migrating birds congregate around lighted structures. Such birds have lost access to normal orientation cues and tend

to approach lights, become disorientated and fly about the lighted area, thus increasing collision risk. The EIAR notes the issue referencing studies that indicate structures with no lighting are the least attractive but does not resolve concern as lighting remains proposed. As acknowledged within the EIAR little is known about collision risk and bird strike rates in Ireland. Due to insufficient information the Department is not confident of collision rate estimations or proposed monitoring systems for species such as golden plover at this site.

In the case of cryptic species such as woodcock, snipe and red grouse, VP survey are not suitable methods of survey and cannot reflect the populations of these species accurately. Transects or species specific techniques are a more suitable survey method. It is noted that some transects were carried out, however these were limited in application and extent with a greatly disproportionate extent of them in coniferous forestry and along the existing roadway through the site and very little through the core heath and wet grassland parts of the site where more suitable habitat occurs and where most development is proposed. There also was no transect covering the entire eastern portion of the site where five turbines and associated infrastructure are proposed. Specific recognised survey methodologies for these species, (for example survey methodology for red grouse includes transects and playback responses), were apparently not used. It is probable that woodcock is present on or adjoining the site but the surveys carried out did not detect any. Breeding woodcock survey should be carried out between 1st May and 30 June commencing 15 minutes before sunset and finishing 60 minutes after sunset. Two nocturnal surveys were carried out as part of the assessment and one of these (09/06/2020) to some degree adheres to such parameters but the transect was substantially too short to represent the site, away from the most suitable habitats and consisted of one visit instead of three. The second transect was not within the recognised appropriate survey period. The geographically limited two nocturnal transects are not an adequate assessment or reflection of potential long eared owl presence or absence.

On the basis of the foregoing the Department considers that the assessment on the significance of the impact of the development on the key avian receptors is underestimated.

Apart from collision risk and direct removal of habitat, displacement of species including hen harrier and golden plover and also other red listed birds of conservation concern such as snipe and to a lesser extent meadow pipit is of concern. While the extent of habitat displacement may be debated and varies between species, for hen harrier 2-300m is likely with reduced usage up to 500m. Displacement guidance available is qualified based on studies earlier than 2015 when turbines were far smaller. It is likely that displacement distances will be much greater based on 185m high turbine and as a consequence may adversely affect sensitive species identified in surveys over a greater distance than the EIAR recognises. Further sources of displacement will be associated with human activity in this currently large undisturbed area. Human related disturbance distances for hen harrier are considered to be 300-750m for golden plover 200-500m with the upper limit of the disturbance buffer recommended for use. The impact assessment has only used the aera of habitat to be directly removed and replaced with infrastructure and not factored in the displacement that will occur, effectively rendering significant areas of habitat unusable or at best substantially degraded for sensitive avian species. Given the significant amount of infrastructure other than turbines (25.43km of new roads which apart from habitat destruction will have a displacement impact particularly if human presence is regular. Such effective habitat loss through displacement is acknowledged elsewhere in the assessment however not included in the overall quantification of impact.

Assessment references amount of similar habitat elsewhere outside the site and uses this to support assessments of negligible effects but fails to acknowledge the main reason for the decline of most of these species (hence Annex 1 or red listed status) is the decline or degradation of their habitat nationally or internationally. The development proposes to remove or degrade a significant area of such habitat which may be small in the context of the entire habitat occupied by a species nationally but must be seen in the context of declining habitat available to species. Even wide ranging species cannot alternate between disparate fragments of habitat nationally and for species which cannot range far and are habitat type specialists (i.e. can only survive in a specific habitat (e.g. red grouse) the existence of suitable habitat elsewhere is irrelevant as they cannot utilise it unless close to existing habitat. The range of the species is therefore affected by habitat removal or fragmentation. The

potential loss of this habitat must also be seen in the context of proposed loss of similar habitats through proposed windfarm development as Dyrick Hill and Scart Mountain both also within the local ranges of mobile species such as hen harrier, merlin and golden plover.

The southern regional assembly regional spatial and economic strategy (RSES) lists regional policy objectives (RPOs) for this region and RP01 states “Any reference to support for all plans projects activities and development in the RSES should be considered to refer to ‘environmentally sustainable development’ that has no adverse effects on the integrity of European sites and no net loss of biodiversity.”

The Department considers that it has not been established that the proposed project would not cause a net loss of biodiversity. The Department does not accept that the destruction of large areas of habitat directly linked to the habitats for which the adjoining Comeragh Mountains Special Area of Conservation is designated should be considered insignificant.

Department of Housing and Local Government and Heritage

Regarding Archaeology. Noting the submitted Archaeological impact Assessment conditions are recommended including that all mitigation measures set out in Chapter 15 be implemented in full. Provision for archaeological testing and suitably qualified archaeologist to be retained to advise on appropriate exclusion zones. CEMP to include location of all archaeological cultural heritage constraints. Requirement for final Archaeological report.

9.2.2 Office of Public Works

Section 50 consent from the Commissioners of Public Works in Ireland under Section 50 of the Arterial Drainage Act 1945 is required where any new culverts or bridges (or modification of an existing culvert or bridge) to cross watercourses are proposed. Design standard for bridges or culverts is based on flood with an annual exceedance probability of 1% (the 100 year flood.) increased by 20% to cater for the effects of climate change. Bridges or culverts designed to convey design flood without significantly altering the hydraulic characteristics of the watercourse.

Where development occurs in the vicinity of an arterial drainage scheme access (a 10m undeveloped strip next to the channel) is required by the OPW for maintenance purposes.

9.2.3 Irish Aviation Authority (IAA)

Applicant should be required to engage with the Air Navigation Service Provider (ANSO) Air Nav Ireland, DAA Cork Airport and Waterford to undertake a preliminary screening assessment to confirm that the proposed wind farm and the associated cranes that would be utilised during its construction would have no impact on instrument or flight procedures communication and navigation aids or flight checking at either Cork Airport or Waterford Airport.

In the event of permission condition to apply requiring applicant to contact the Irish Aviation Authority to agree aeronautical obstacle warning light scheme for the wind farm development, provide as constructed coordinates in WGS84 format together with ground and tip height elevations at each wind turbine location and notify the authority of intention to commence crane operations with at least 30 days prior to notification of their erection.

9.2.4 Transport Infrastructure Ireland (TII)

Included with submission - a copy of consultation Private Wires and consultation regarding draft revised wind energy development guidelines and copy of TII submission to Department of the Environment Climate and Communications (DECC) Offshore Grid Delivery Model option consultation. Also included is a document relating to a Strategic Housing Development (SHD) housing application.

Submission notes TII support for greening of energy generation noting the need to balance project objectives against the necessity to safeguard the strategic function of the national road network. Reference is made to the Board's decision on Eirgrid's North Connacht project (ABP VA15.313274).

Plan led approach is required for the delivery of national electricity grid connected renewable generation assets and national grid infrastructure. The absence of

coordination presents a risk to national grid development as well as private wires private development proposals.

9.2.5 Uisce Eireann (UE)

There are a number of Uisce Eireann (UE) watermains and pipes along the proposed 22.47 km underground cabling route which will be impacted by the proposed development.

Structures or works over on in close proximity to UE infrastructure that may inhibit access for maintenance or endanger structural or functional integrity of the infrastructure are not permitted. Separation distance shall be in accordance with UE codes of Practice and standard details.

No objection in principle to building under UE infrastructure provided assets are protected during construction and operation phases and that adequate separation distances are provided. UE cannot support proposals to cross above UE assets without sufficient clear and detailed information. Where building near/building over/ diversions of existing UE assets are proposed the associated designs need to be agreed with the UE diversions team, a confirmation of feasibility must be issued by UE before planning permission is granted. An Bord Pleanála should request further information to include confirmation of feasibility to the UE diversions team in order to assess the interactions with public water infrastructure.

9.2.6 Department of Transport

Submission notes the construction of connection to national grid may have effects on the environment and the regional and local road network. Regular liaison recommended with the relevant road Authorities particularly during construction phase and during future maintenance works to minimise the impact on the public road and where a need to deviate from the detailed plans is identified. Compliance with appropriate standards and interalia the Guidelines for managing openings in Public Roads, 2017.

9.2.7 Fáilte Ireland

EIAR provides a list of tourism amenities within 15km however a number of additional amenities facilities are not included and no mapping of facilities relative to proposed windfarm is provided. Comeragh Mountains described as being c5km from the site which is misleading as site is within Comeragh Mountains. No reference to Seefin Top Walk or Seefin and Coumaraglin Mountain Loop walk both c 1km south / southeast. Promoted walks in the Nire Valley all within c4km east of the proposed windfarm.

Site is wholly located within a “no-go area” in the Renewable Energy Strategy.

Landscape and visual impact assessment has noticeably underestimated the likelihood of significant negative impacts on the landscape and visual character of an extensive area of the Comeragh Mountains. The impact extends to lands to the south and to the west including the eastern and southern ranges of the Knockmealdown Mountains. Adverse impact on the high quality landscape value of the numerous recreation amenity and tourism facilities operating across a wide area of the Comeragh Uplands.

9.2.8 An Taisce.

Section 3.3 of the EIAR Strategic Site Selection relies on older iteration of the Waterford County Wind Energy Strategy 2011-2017. Updated RES 2016-2030 and associated wind energy strategy delineates the site within an exclusion zone. Location is not adequately justified. Site is a sensitive landscape where development could change the character of the landscape over a wide area.

Development lies in close proximity to a network of waterbodies namely tributaries of the River Colligan designated as good status and tributaries of the river Nier designated as moderate and good status respectively and at risk of not meeting Water Framework Directive (WFD) requirements. Proposal should be assessed against Article 4 of the WFD to determine whether the project may cause a deterioration of the status of a surface or groundwater body or if it may jeopardise the attainment of good surface or groundwater status or of good ecological potential and good surface and groundwater chemical status. The proposed construction of a

river crossing as part of internal turbine access roads and the grid connection needs to be carefully assessed to ensure that sediment runoff and disturbance to the rivers does not occur during the construction and operational phases.

While most of the sample sites indicated depth of less than 0.5m some areas of deeper peat were found and risks cannot be excluded. Soil stability and landslide risks need to be fully assessed in a peat stability assessment. Figure 11-3 landslide susceptibility shows location of turbines in areas with moderately high to high potential for landslides. Notably proposed borrow pit near T2 intended to facilitate the extraction of 239,580m3 of rock much of which will be used to construct the internal surface access tracks to the turbine sites. Potential ecological impacts of intensive extraction should be fully assessed.

The Board must establish beyond all reasonable doubt that the proposal will not adversely impact any Natura 2000 sites. If uncertainty exists full account should be taken of the precautionary principle and the development should be refused.

9.3 Observations from Third Parties

Third party submissions raise common objections. In view of the commonality of the issues arising, and in order to avoid undue repetition and to enable the identification of salient matters raised, I have summarised the issues under thematic pathways as follows:

Inaccuracies within the application documentation

- Non-technical summary submitted on walking routes is incorrect. The low walking route from Clonmel to Dungarvan covers Milk Hill to Seefin.
- Errors in Chapter 16.6.1.1 (Reference to Bleantasour Mountain ‘to the east’ should read ‘to the west’ Reference to ‘Coumevane Stream’ should read Coumduane Stream.
- Misspelling of Nire Valley as Nier Valley is misleading.

- Application drawings incomplete
- Unsigned and undated letters of consent
- Curious reference to “Harmony Solar” on website.
- ABP inspector’s report on pre application consultation (Ref ABP309259) repeats error regarding proximity of the Comeragh Mountains SAC. 1.7km . The SAC is located just 800m from the T11.
- Application form page 4 refers to Addendum B which is not provided.
- Reference to Patrick Power and Thomas Power of Coumnagappul whereas there are no such residents in Coumnagappul.
- Contradiction with regard to access to met mast.
- Various reference to 6 watercourse crossings and reference to 3 watercourse crossings.
- Reference within Appropriate Assessment (AA) screening to Cork City Development Plan.
- Photomontage in Book 2 incorrectly titled local road at Bohadoon whereas it is the Mauma / Maum road. A protected view and most sensitive to new development.
- T12 is located 2.16km from VP21 not 2.5km
- Reference to the Lower River Shannon SAC on p 91 of the AA screening.
- Mathematical figures inaccurate and lacking rigorous scientific information. 88.0MW per year divided by 4.1MW per household is 2.102households not 52,560 households stated in application. Community benefit would be on average €17,660 per annum not €337,155.
- Contradictory statements regarding wind turbine foundations P9 “circular 25m diameter 4m in depth”. P 28 “reinforced concrete gravity foundations with depth of 3m and diameters approx. 22m”.
- The compilation of documents with little care or professionalism shows a cavalier approach to the data and its integrity. This approach cannot be described as robust or in line with best practice.

Negative impact on biodiversity, ornithological impact

- Site’s rich biodiversity is understated

- Impact on species such as Hen harrier, Golden Eagle, Peregrine Falcon, Merlin, Golden Plover. SSE report 2016 by RSPB Scotland stated that the number of golden plover dropped by 80% at the Gordon Bush windfarm during the first two years of operation.
- Impact on hare, bats.
- Salmon and Brown Trout and Sea Trout in Colligan river ecosystem.
- Impact on Freshwater pearl mussel.
- Impact on horses.
- Brent Goose, Dunlin, Redshank and Turnstone
- Ballymacmague Fen sensitive habitat.
- Discrepancy between numerous statements asserting adherence to the best practice guidance Scottish Natural Heritage in recommended bird survey methods to inform impact assessment of onshore windfarms (2017) and the actual conduct of bird surveys notably:

- Exclusion of Comeragh SAC from zone of interest when scoping the survey
- VP survey to determine flight activity deficient. Viewshed of 500m beyond the turbine was not achieved for all turbines despite frequent statements that this was the case. Of the 1080 survey hours conducted to observe flight activity on site only the data from 828 hours of observation or 76.66% was used in the collision risk model. Only VP1, VP2 and VP3 data as well as final year of VP4. Full subset of VP observations was not input to the model based on comparing flight times as outlined in Appendix 10.2 per species and the original observations as outlined in appendix 10.1 (golden plover, peregrine falcon and snipe.)
- Use of spurious avoidance rate for Golden Plover of 99.8% instead of the standard 98%.
- Breeding and Abundance Survey. Use of walkover hinterland and transect survey methodology instead of species specific survey methodology outlined by SNH which also sets out significantly greater required survey areas and survey effort than undertaken.
- Structure and timing of the nocturnal survey is at odds with guidance for owl surveys as outlined by SNH (2018)- the most likely species to be present.

- Unusual features in observations recorded in relation to movement between VP points (distance of several kilometres within a couple of minutes). A 6 hour non-stop watch. Observation hours undertaken in conditions of poor visibility contrary to guidance in relation to sunrise / sunset.
- Only 87% of total data relating to golden plover is included. Data with regard to peregrine falcon used on CRM is not consistent with the data in observations - Appendix 10.1. Only 46% of total observations within reduced set were included. Snipe 62% of observational data used.
- Avoidance rate as per SNH 2018 guidance is 98% whereas the applicant applied 99.8% citing Gittings, T(2020) part of study included in Ummeras application which does not appear to be a published peer reviewed paper.
- There is a legitimate concern around the data presented and the conclusions drawn from it specifically with regard to the output from collision risk impact modelling and overall assessment of impact on birdlife of the area due to the constrained nature of the breeding and abundance survey. All call into question the integrity completeness and reliability of the data which is the primary input into the collision risk model.

- Distribution and abundance survey areas of concern. Transect routes do not engage with eastern boundary of the site where 6 of the 10 turbines are proposed. Based on the maps all turbines are located on heath however transect surveys are based in grassland and conifer areas and through agricultural land. Only the early part of Transect No 1 appears to be within 100m of heath. The establishment of a distribution survey from a 100m overview from the transect route is a significant departure from SNH 2017 guidance which identifies the survey area for a breeding and distribution survey area of 500m beyond the planning boundary.
- Surveying effort falls significantly short of SNH 2017 guidelines in relation to peregrine, merlin and hen harrier. The use of walkover survey in the north of the site to identify golden plover, merlin or red grouse is outside the guidelines. A separate survey should have been conducted to identify the abundance and breeding of moorland breeding birds. Area should have extended 500m beyond the proposed development site with 4 visits per breeding season.

- Given that hen harriers were recorded in the flight survey, including juvenile birds the use of a drive around survey seems inadequate.
- Survey is significantly less thorough than recommended by SNH (2017) guidance and it is hardly surprising that there was limited success in finding target species identified.
- Nocturnal survey along Transect 1 in the valley in the centre of the proposed site in a track through farmland would not appear to be a likely habitat to encounter nightjar or woodcock. Of the three species identified as target species the most likely to be present was owl. Owl was heard on one occasion at VP3. Breeding survey was not conducted for owls and the use of a transect to identify the presence of owls was conducted outside the period of the year most likely to hear owls.
- Baseline information fails to take accurate account of records on NPWS and National Biodiversity Data Centre websites, E.g. Red Kite. EIAR states not documented in relevant grid squares in the last 15 years whereas recorded on National Biodiversity website 12/05/2021
- Walkover surveys for red grouse timed outside breeding season.
- VP locations not ideally located on elevated areas. Only VP 1-3 operative during all 7 seasons. All located in the valley. VP4 moved 3 times and VP 5 operative for 2 seasons only. Average hours of survey per VP was just 3 hours twice a month during the year.
- The fact that the site is one of the rarest landscapes is minimised in the application by indicating that heath was burnt or that the environment is of low value. The recent arrival of the golden eagle on site demonstrates how important the habitat is. It was observed in this area on over 10 occasions.
- Peregrine Falcons breed at high density within the Comeragh Mountains SAC, given the presence and attractiveness of superb breeding cliffs, and are usually present on those breeding cliffs throughout the year. They sometimes move to the lowlands in harsh weather conditions but usually only briefly. They forage widely over moorland and farmland in the farmland surrounding the Comeraghs especially in the breeding season if they are raising up to four young. Surprising that only eight sightings of peregrines observed during survey work, however the low number of sightings may be linked to the

difficulty of seeing fast flying raptors in mountain areas that are often clouded in mist and low cloud.

- No attempt was made to survey peregrine breeding sites in the Comeragh Mountains within the stated foraging range of 18km.
- No mention of ravens in the ornithology chapter.
- Nesting locations for both peregrine and raven can be made available to the Board on a confidential basis.
- Buzzard collision risk is underestimated. Sensitivity to collision more likely medium to high and magnitude potentially serious given the massive expansion of buzzards population in Ireland. Data underpinning the EIAR conclusions is 20 years old.
- It would not be unreasonable to suggest that in 40 years time (the life span of the windfarm) one or two eagle species currently breeding in Ireland could be breeding in the Comeragh Mountains. The most likely coums where they might breed are Coumshingaun (7km from the windfarm site) or Coum Eag (4.8km to the southeast) both within the zone of influence of the proposed turbine locations. Golden Eagle represents a high collision risk.
- In the case of Peregrine Falcon, Kestrel, Buzzard and Raven and possibly Hen Harrier there is clear and substantive collision risk. EIAR is not reassuring given out of date data on which it is based and as the size, scale and sweep of the turbines proposed are significantly greater than those used in earlier studies. EIAR is insufficient in assessment of impact on breeding birds including raven and peregrine falcon who breed close to the site.
- Immature kite winter to upland areas due to availability of carrion and general lack of disturbance.
- Collision Risk Model has wide margin of error in its calculations. Model does not take account of elevation 445-620m above sea level, frequent cover in low cloud, fog, mist ice snow, heavy rain and the ability of birds to avoid the turbines in such low visibility events. It is not evident which bird species pass through the site at night. Collision risk and displacement risk.
- Attraction of red lights.

- Coumnagappul is significant for hunting /foraging by a range of raptor species. Proposed development would be a serious obstacle and threat through displacement, avoidance or mortality.
- Dipper is not mentioned in Chapter 10 and only mentioned once in Appendix 10-1 table 1. A pair nests annually at Scart Bridge or in the bridge beside it at Aughclashanierin. Records also of them high up in the Coumnagappul Valley and on the River Colligan and in the Coumduane Stream. Also likely along Colligan beside enclosed farmland between unenclosed upland areas of the valley as far as Scart bridge. No mitigation measures outlined with respect to dipper.
- Ongoing status of ornithological studies of concern.

Policy Conflict

- Wind No Go Area within the Waterford County Development Plan.
- Conflict with Upland Communities European Innovation Partnership (EIP) Project and the Acres Scheme.
- Contrary to recreation and mountaineering policy.
- Negative impact on Tourism Strategies
- Negative impact on farms involved in Munster Acres Scheme and Tirlan Sustainability Scheme and sustainable farming actions which are in harmony with the natural environment.

Impact on Water quality.

- The source to nearby farm via Gleann dath Buí and the Gleann Mór streams both originating in the Knockavannia mountain area. Both streams flow north feeding to river Nire.
- Vulnerability of groundwater due to peat cover
- Dispute contention that the Nire and Colligan River will not be negatively impacted upon. Creation of preferential flowpaths, concrete runoff in heavy rainfall.
- Silt fencing will not ensure no risk of run off.

- Proposed Crossing of Colligan river at Kildangan Bridge by way of directional drilling. Notable that Dyrickhill wind farm also proposed crossing at the same location with same method but specified different bore depths.
- Bentonite and its derivatives can contain harmful metals such as arsenic lead and mercury. Potential risk to Colligan River. Threat to Dungarvan Town water supply due to contamination of Ballynamuck aquifer. Applicant has failed to show a definitive construction method with regard to grid connection watercourse crossing.
- Impact on lamprey, Atlantic salmon, European eel, floating river vegetation.
- Aquatic Assessments incomplete B4 and B5 not assessed as landowner should not facilitate access. European eel may be present.

Visual Impact

- Question the independence of the landscape and visual impact assessment
- Visual impact on this sensitive unspoilt rural landscape is downplayed.
- Visual pollution and environmental vandalism in mountain landscape. The Comeraghs an extensive upland area of outstanding natural beauty and spectacular glacial heritage.
- Comeragh drive viewpoints 23, 24, 26 and 27. But no reference to the most scenic stretches of the drive along the Powers the Pot Road under Knockanaffrin between Rathgormack and Ballymacarbry from where T1 and T2 will be clearly seen inappropriately perched on the summit of Milk Hill. Viewing point on Powers the Pot road for example Moanyarha Bog S255 175 has splendid views of Knakanaffiin Ridge and the Nire Valley, both macro features of the Comeraghs.
- Visual impact in mountain zone shouldn't just be assessed from roadside views.
- The Nire Valley. T1 and T2 perched on top of Milk Hill on the southern rim of the valley not acknowledged. The Gap at 466m elevation is highest pass in Waterford. Views will be compromised by the turbines on Milk Hill.
- No viewpoints from some of the highest peaks in the Comeraghs. No VP from western part of Comeragh plateau or from best panoramic locations.

- Walking routes not assessed in visual and landscape impact.

Impact on Cultural Heritage

- VP 19 fails to address historical landmark - location where Eamon De Valera took refuge. VP21 no acknowledgement of cultural historical significance of location of anti treaty IRA executive meeting March 23-25, 1923.
- Notable archaeological features within the boundaries of the proposed development. Under the Valletta Convention 1992, Art 1 Section 3 the archaeology falls under the classification of structures or constructions and is covered by the convention. In Jan 2004, a visit by the head of Geology Dept Trinity College Dr John Graham to nearby location with identical features confirmed that a random sample of these structures were not the result of geological process and were therefore anthropogenic. In Autumn 2013 the magazine earth science journal published a two page article on the features. (Article appended to submission).
- 40-50m west of the site of proposed T2 are a collection of cairns and anomalous stone formations. (Unclassified archaeological features) The site of turbines 7,8,10 and 11 along with their access roads are seriously compromised by the many structures and formations to be found to the east of Coligan River.
- Much archaeology has come to light in the Comeragh Mountains in recent years with much remaining to be discovered. Loss of archaeological heritage makes the site wholly unsuitable for this development.
- A well known cairn and cist tomb on Bleantasour Mountain (between Glenanneane and Knockavannia) vandalised. Locals repaired the cairn but tomb remains in damaged condition.
- Archaeological Monuments 3km to the north at Tooreen which have been compromised by forestry operations however are important for the siting and extent. An internationally important archaeological complex 3-4 km to the south of the site in the remote and relatively undisturbed Araglin Valley has a

number of significant archaeological features and are not mentioned in the EIAR.

- Comeraghs are too important a resource to destroy for future generations
- Burial ground Knockavannia.- location unknown.
- Negative impact on Architectural heritage including Scart Bridge Protected Structure WA751041

Residential and Rural Amenity

- Impact on health and safety.
- Disruption to tranquiity and serenity.
- Impact on vulnerable residents
- Noise Shadow Flicker
- Noise propagation – Uncertainty
- Photomontage viewpoints do not represent the most impacted viewpoints.
- Houses to the south will see all turbines.

Appropriate Assessment

- Dispute finding of NIS which considers Comeragh Mountains SAC to be not within the zone of influence. Statement that the site has no hydrological connectivity to Comeragh Mountains SAC is incorrect as the River Nire flows from Sgillogue Lough in the Comeragh Mountains SAC.
- Dispute reference to site as transitional area whereas site is a constituent part of the Comeraghs.
- Negative impact on Dungarvan SPA.

Ownership Legal Interest

- Turbary rights attached to peatlands. Part of the project (Knockavannia) is in an area described on the land registry as unregistered. Letters of consent are invalid as they are by rights holders (turbary) and cannot give consent for

usage other than for turbary rights. (Reference SI No 40/1951 Turbary Rights Order 1951.)

- L51162 referred to as agricultural track going through unregistered land. The land is part of the Bleantasour Mountain commonage to which a number of local farmers hold rights. No agreement from common holders to facilitate this industrial development.
- Letter of consent not signed by Paddy Coffey of Knockavannia, Ballymacarbry Co Waterford.
- Landowner involved in proposed grid connection route C does not consent with regard to off road sections.
- No consent to underground cable Local Road L5069 Eaglehill.

Land Stability

- T2 T7 T8 T110 and T12 and portions of access road linking these turbines are in areas mapped as having moderately high to high landslide susceptibility. These areas directly corelate with mapped blanket bog deposits. Peat stability assessment is inadequate
- Impact of borrow pit.
- Inadequate consideration to mobilisation of silt and changes to peat stability.
- Significant damage on fragile wet and dry heath and blanket bog landscapes. Construction works and sheer scale of the development could undermine stability of the landscape.

Traffic and road impacts

- Roads inadequate to cater for proposed development. Small stone bridges unsuitable for heavy machinery.
- Negative Impact on Agricultural Contracting business arising from traffic congestion.
- Impact on vulnerable road users

Other matters

- Additional landowners being approached regarding extension. Concerns of project splitting.
- Internal road to be constructed takes a very scenic route from the local road to the Coumnagapul valley. Question whether circuitous route is taken with future expansion in mind.
- Inadequate engagement with the local community.
- Alternative offshore wind generation is far more efficient and a greater resource.
- Submitted information unclear and does not meet 'plain english' requirements. Information is convoluted and acts as a barrier to citizens to interpret and understand.
- Application not available in Irish or other language.
- Limited land resource.
- History of refusals in the area
- Concerns at Board's handling of the application. Third party rights.
- Cumulative Impact - Progressive creep of turbines along mountains. Dyrick Hill wind project, Scart project.
- Hub height of 104m proposed yet Vesta model 162 not manufactured at this height. Plans ambiguous.
- Proposal likely to have net carbon gain due to situation on blanket bog.
- Unauthorised Development carried out on the site. Digging test holes and core drilling and in relation to a mast.
- Matrix of interaction inaccurate
- Devaluation of property. Impact on future housebuilding
- No reference to Kilbrien NS located 4km from the site.
- Two met mast erected without permission. Referral Case RL3419. 211029 application for retention. Unauthorised development. Data collected from unauthorised development met masts should be inadmissible.
- Devaluation of property. Study published 2020 by Kpster H and Droes M "Wind turbines and solar farms drive down house prices". Using detailed housing transactions covering Netherlands since 1985 shows that tall turbines

(over 150m) reduce the value of peoples homes within a 2km orbit. (Kosten and Drows 2020.)

- Site notice not erected on the R672 Clooncogaile Cross Roads.
- No consideration of wireless (satellite) broadband telecommunication signals.
- Cumulative assessment does not include Scart Mountain Wind farm, a 16 turbine proposals by future energy Ireland at pre app consultation stage. PC93.315920.
- Negative Impact on bird population in possession of the Nire Valley Gun club: snipe, woodock, grouse, corn crake, curlew, pheasant and numerous species of song birds. Mountain hares, rabbits, stoats, fox badger fallow and sika dear and many small mammals.
- The only benefit to the local community is to those who have leased land for the purpose of the wind farm installation.
- Mitigation measures stipulated in the application are inadequate should preventative measures fail.
- Wind speed is insufficient to make this project viable. Yearly average of only 4.6m/s at 100m hub height. (Based on data from Met Eireann weather recording station at Ballinamult (7km west). Empower's claimed annual average wind speed of 8.3m/s at 85m mast height is extraordinary and requires investigation. Empower refuse to provide data stating commercial sensitivity. Data should be in the public domain. SEAI map shows the area to be in a medium to low wind power area.
- Data from western forecast stations on the north and east side of the Comeraghs. North and east side of Comeragh much different form gentle protected western slopes.
- EIA surveys focussed on areas easily accessible by vehicle.
- After the proposed windfarm was suggested in 2019 widescale burning of large areas of Glenanneane, Carrigbrack, Knocavannia, Milk Hill and Bleantasour Mountain townlands occurred, particularly in areas where endangered species breed and hunt. Breeding habitats of rare red listed birds were destroyed. Recent activities have degraded the environment
- Cost of decommissioning and other environmental costs may fall to landowners.

- Empower have not provided details of options obtained for road widening on all third party lands.
- Inadequate analysis of carbon losses and gains.
- Alternatives not only confined to fossil fuels. - Nuclear, biomass, biodigestion and offshore wind should be addressed.
- Prospect of a windfarm in the area has resulted in creation of bitter divisions within the community. Community fund has potential to create even greater division, animosity and upset.
- Word Comeragh from Irish Cumarach meaning abounding in hollows and river confluences and Monavullagh is Móin a' Mhullaigh" meaning bog of (or on) the summit.
- Procedural Issues - Required procedures relating to SID are incorrectly applied. No evidence that the Board consulted with the local authority and no consideration of neighbouring county Tipperary.
- Energy Policy is flawed whereby allocation results in frenzy by developers.
- Board cannot grant permission as the mitigation measures proposed are neither complete precise or definitive.
- Kilkeany derelict house within 200m of compound base and substation
- Impact on other ecosystem services including carbon sequestration/storage, water quality, flood prevention, drought alleviation, biodiversity and socio-economic value will be significantly adversely affected.

9.4 Response of the Applicant to Prescribed Bodies and Third Party Submissions.

- IAA requirements with regard to screening to ensure no impact on operations at Cork or Waterford Airport will be complied with.
- OPW requirements for any new culverts or bridges and consent under Section 50 of the Arterial Drainage Act 1945 will be adhered to.
- Uisce Eireann requirement for confirmation of feasibility with regard to impact of cabling route on watermains and pipes currently being progressed.
- Department of Transport requirements to be adhered to. It is noted that submission from TII erroneously refers to SHD residential application.

Third party core issues addressed under grouped headings namely

Policy

Landscape and Visual

Hydrology and Water Quality

Appropriate Assessment

Ornithology

Archaeology

Traffic and Transport

Health & Wellbeing, Noise shadow flicker and property values.

Policy.

- Significant weight should be given to national energy and climate policy over local policy. The Waterford County Council Wind Energy Strategy is irrational and not consistent with regional and national policy.
- From a landscape perspective the site is robust and suitable to accommodate wind turbines.
- Noting that the Board has been refusing permission for a number of developments solely on the grounds that the development materially contravenes a local County Development Plan, it is asserted that this is an incorrect approach as significant other matters should be considered to have equal or more weighting than local spatial policies when it relates to renewable energy development.
- There is overriding public importance to consider national policy considerations, in this instance in the context of the climate crisis.
- As a matter of jurisdiction, the Board has discretion under the Planning and Development Act to grant permission for the proposed development, under Section 37G(6) of the Planning and Development Act 2000, as amended. Noting as identified by Mr Justice Haughton in Element Power v An Bord Pleanála IEHC 550, Section 37G(6) expressly empowers the Board to grant permission even if the development

would materially contravene a development plan. While the Board must have regard to national and local strategy, it is not bound by it.

- Section 15(1) Climate Act obligation of consistency imposes a significantly higher threshold than that contained in section 37(6)(g) of the 2000 Act. Insofar as the Board identifies any conflict between the County Development Plan and the requirements of Section 15(1) then the objectives contained in the latter must be given priority over the former.
- Noting quashing of refusals Croaghaun Wind Farm (ABP 309937[3]) and Cahermurphy Wind Farm (ABP311044[4]) the Board was incorrect to either identify the relevant County Development Plans as representing a "plan led system" or in reasoning from a breach of those plans to a conclusion that the proposed wind farms would be contrary to the proper planning and sustainable development of the area.
- Significant spatial policy formation pending under the Climate Action Plan 2023, in particular a renewable electricity and spatial planning framework is imminent which will set regional MW targets and Regional Renewable Electricity Plans are to be drafted and implemented in 2024.
- Neither the NPF nor the current suite of Regional Spatial and Economic Strategies Plans have been adopted or amended in the context of the Climate Action Plan 2023 and the legally binding obligation to act in a manner consistent with this plan under the climate action and low carbon amendment act 2021.
- Waterford County Development Plan is out of date in respect to the overarching national climate action policy. It is impossible to characterise a breach of the County Development Plan insofar as the proposed development is concerned as a breach of a plan led system where the Plan was adopted without reference to national climate policy.
- The Board is obliged to ensure that EU law is fully effective and must disapply any provision of national legislation that may be contrary to EU law as identified and relied upon by the Board itself. The Wind Energy Map that forms part of the County Development Plan, that effectively sterilises Waterford for the purposes of Wind

[3] Croaghaun WF ABP309937 Board's decision quashed by order of the high court, Remitted Case 318705
[4] Cahermurphy WF -ABP311044 Board's decision quashed by order of the high court. Remitted Case 318525-23.

Energy, is not compatible with Article 3 of the Regulation 2022/2557 of the RED III Directive. The presumption that such developments are in the overriding public interest and must be accorded priority is completely incompatible with the purported sterilisation of the county. However, it is not necessary for the Board to take this step as per Element Power v An Bord Pleanála, the County development Pan is simply one of the factors to which regard must be had with many other factors to consider and have regard to also.

- By reason of the nature of the proposed development, i.e. renewable energy, significant weight must be given to the provisions outlined in section 37(G)(2)(g) of the Planning and Development Act 2000 (as amended), which includes the provisions of the Climate Act 2021 and the Climate Action Plan 2023. Where the Board is weighing up competing policy objectives and/or considering this planning application in the context of Section 37(G)(2) of the Planning and Development Act 2000 (as amended) it must consider overarching legally binding, emissions reduction objective, and act in a manner that is consistent with the delivery of this target.
- It is respectfully submitted that Coumnagappul Wind Farm if permitted will be in a position to make a significant contribution to the meeting of the targets prior to 2030.
- It is submitted that the policy framework and in particular the obligation to act consistently with the Board's obligations for the purposes of the Climate Acts 2015-2021 raises a near presumption in favour of a grant of permission, that should only be displaced by the most pressing counter considerations under the rubric of either EIA or AA.
- Council Regulation 2022/2557 requires that the Board must take its starting assumption that Coumnagappul Wind Farm is of overriding public interest and contributes to public health and safety. Although the Board retains a discretion, the threshold for refusal of a grant of planning permission is therefore extremely high.
- Significant increase in mandatory targets for renewable energy in the EU as set out in the RED III directive. Climate Action Plan 2024 stresses and makes abundantly clear that the rate of required renewable deployment is unparallelled and must be circa eight times faster in the period 2024-2030 than the historical average.

- Adoption of the 2022-2028 Plan was in advance of the adoption of legally binding sectoral emissions ceilings and in advance of Climate Action Plan 2023 which included further increased targets for onshore deployment in Ireland.
- It is submitted that the wind energy map was developed in an ad hoc basis, devoid of any evidence base or consistent approach to constraints. Transitional farmed and forested foothill landscapes have proven suitable to wind energy because they have low population densities, good wind speeds and broadscale landform and land use patterns that can accommodate wind turbines.
- A comparison of the previous and current wind energy strategy shows that extensive areas of the landscape within the current 'no-go areas' were 'preferred areas' and 'open to consideration areas' in the previous Waterford County Development Plan. Classification of the entire uplands and surrounding foothills with 'most sensitive' classification and corresponding designation as 'no go area' is considered over simplistic and inaccurate.
- While some aspects of the Comeragh Mountains, most notably the most elevated uplands situated along the main Comeragh Mountain Ridgeline, possess qualities of unspoilt remoteness, the site and central study area are typically influenced by working transitional land uses.
- The Wind energy map is an absolute outlier in the policy framework.

Landscape and Visual

- Regarding submission by Fáilte Ireland and perceived impacts on Comeragh Mountains – the applicant refers to findings of visitor attitudes perception on the landscape and assessment of visual effects as set out in Chapter 16 of the EIAR.
- Significance of visual effects ranges from 'substantial-moderate' to 'imperceptible' with the most notable impacts occurring within the central study area.
- 185m tip height turbines are not out of scale or context in transitional landscape context that is heavily influenced by large scale landscape features such as the Comeragh, Monavullagh and Knockmealdown Mountains. The scale is well assimilated in regard to broad underlying land uses such as extensive areas of moorland and large blocks of conifer forestry.

- The design approach is consistent with the Wind Energy Development Guidelines 2016, 4xtip height setback is achieved. Nearest turbine is 820m from the nearest residential receptor.
- ZTV mapping highlights that more than half of the scenic designations (static views and routes) will afford no visibility of the proposed turbines, (Fig 2) Nearest scenic route is 2.4km west of the nearest turbine, and there will be clear visibility of the proposed development from various parts of the scenic routes within the central and wider study area especially where scenic routes and views are located along elevated terrain.
- Scenic route S8. “Northwest from Dungarvan to Tooraneena on the R672. Third class north to Ballymacarbry, Join R671 to Clonmel taking the R678 and turbine south for a third class route through the Comeraghs.” It is one of the most extensive scenic routes that passes through the study area and is located just under 2.5km west of the nearest proposed turbine at its nearest point. Due to the expansive nature of this scenic route designation, it is represented by five viewpoints including VP3, VP9, VP16, VP22 and VP26. Sections of the route also form part of the Comeragh Mountain drive and Sean Kelly cycle routes. The most notable visual impacts along this route are likely to occur within the central study area. The nearest and most visually prominent views afforded of the proposed development from this scenic route are represented by VP16 from which turbines will present as prominent features and at a notable scale. Significance of visual impact was deemed moderate at VP16, which has the highest significance of visual impact along scenic route S8. The significance of visual impact at all other representative views along the scenic route S8 was deemed to be slight or less due to the viewing distances from the site and in some instances the partially screened nature of the proposed development.
- Overall, it is not considered that there will be significant visual effects at scenic route and scenic view designations throughout the study area, nor will there be significant visual effects and linear amenity routes within the central and wider study area.
- Regarding accuracy of photomontages, these are developed in accordance with Nature Scot Guidelines and guidance set by the British Landscape Institute 2011 – Advice Note 01/11.

- Landscape and visual impact assessment as presented in Chapter 16 of the EIAR is a robust assessment of the potential effects of the proposed development and is in accordance with the requirements of the Wind Energy Guidelines 2006 and draft revised Guidelines 2019.
- The applicant stands over the assessment presented with the significance of visual effects ranging from 'Substantial moderate' to 'imperceptible.'

Hydrology and Water Quality

- Chapter 12 Hydrology and Water Quality states "The surface hydrological environment of the proposed development and its downstream catchments are considered to be of high sensitivity given that both the Colligan and Nire catchments have a high WDF status objective /are part of the blue dot programme. The impact assessment and all prescribed mitigation is premised on the legal requirement to meet the objectives of the WFD by ensuring that the biological, physico-chemical and hydro morphological quality elements for high status waters as prescribed in the European Communities Environmental Objective (Surface Waters) Regulations 2009 as amended are not placed in jeopardy by the proposed development.
- Mitigation hierarchy is applied. Turbine foundations and road sited a minimum distance of 75m from any watercourse and 15m from any drain (with the exception of where bridge/culvert crossings are required). Water protection measures inherent to the design, mitigation measures also set out for the protection of water quality Section 12.12 of chapter 12 Hydrology and Water Quality. Mitigation measures prescribed in relation to use of concrete, control of sediment runoff and management and monitoring of local hydrology.
- The objectives of the WFD and associated ecological objectives for surface waters have been fully considered in the EIAR as demonstrated though site selection and assessment of alternative and the mitigation measures prescribed in the EIAR.

Peat Stability

- Regarding peat stability assessment, GSI quaternary sediments mapping shows location within a mix of blanket peat, till derived from Devonian sandstone, alluvium

deposits associated with the Colligan River and outcropping rock. One turbine location (T4) is located within an area mapped as bedrock outcrop or subcrop. Eight turbine locations T01, T02, T06, T07, T08 T10, T11 and T12 are located within areas mapped as blanket peat and one turbine location T05 is located within areas mapped as Till derived from Devonian sandstones.

- Areas of deeper peat were avoided in site layout and site infrastructure followed natural land contours such that it is sympathetic to the existing site topography. Peat only accounts for 17.5% of the total volume of spoil to be excavated on site (excluding rock excavation at the borrow pit). There is no uncertainty about the risk of a peat slide. The wind farm site is considered to be at low risk of peat failure in accordance with the Scottish Executive Best Practice Guide for Proposed Electricity Generation Developments (2017) as peat deposits at the site are <0.5m in depth. As such peat stability assessment is not warranted.
- The landslide susceptibility assigned by GSI for the site directly correlates with mapped blanket peat deposits, however, field observations at these locations recorded slope angles ranging from 6^{o} to 5^{o} and peat depths of between 0.2m and 0.3m with no evidence of historic slope instability observed. There are no historical records of landslide activity within 1km of the site on the GSI database.
- A geotechnical assessment was undertaken using findings from the site walkover surveys and intrusive ground investigations which sets out the imperceptible risk with respect to peat instability.

Appropriate Assessment

- The European sites which may potentially be significantly affected by the proposed development were identified using the ‘source-pathway-receptor’ conceptual model. The assessment determined that there was no potential for significant effects for the Comeragh Mountains SAC 001952 due to the absence of pathway for effect.
- The potential for the proposed development (in the absence of mitigation) to adversely affect the integrity of the Lower River Suir SAC (002137) the Blackwater River (Cork/Waterford) cSAC (002170), Dungarvan Harbour SPA (004032) and Mid

Waterford Coast SPA (004193) was assessed in the Natura Impact Statement and mitigation measures prescribed to ensure no potential for adverse effect.

- The site is not located within an SAC and as such the development lands are not subject to conservation measures under Article 6(1) nor afforded strict protection under Article 6(2).
- Detailed assessment concluded beyond scientific doubt that there are no Annex I habitats within the site. The applicant does not agree with the Department's assertion that the wet heath and dry siliceous heath habitats within the proposed development site correlate to habitats of a quality /conservation value which would align with the definitions for the 4010 Northern Atlantic wet heath with Erica tetralix and 4030 European dry heath habitats provided for in the Interpretation Manual of European Union Habitats.
- It is noted that the Department recognises the habitat degradation in the area and that historically there has been greater heath cover in the area. It would appear that the Department's mapping for these habitats is significantly outdated and compiled from various desk and field study sources which date from between 1998 to 2015.
- The habitat classification of the site and its environs as set out in the EIAR is based on a comprehensive programme of surveys and assessments carried out by competent experts in accordance with best practice and guidance including a series of botanical surveys over a three year period from 2020-2022. On all survey occasions there was evidence of extensive uncontrolled burning and sheep overgrazing on the subject lands.
- Heath habitats within the site are not of particular note or value relative to the condition criteria set out in Perrin et al, 2014 given the cover of non-native species, the absence of Erica tetralix over extensive areas, signs of burning, exposing peat areas of exposed bare ground and areas of extensive cover of bracken. Additional relevé surveys carried out within and beyond the site boundary on 7th September 2021 in order to further understand the broader habitat quality. The results of these relevé surveys also indicated a paucity of healthy heath habitat in the locality to meet the condition criteria set out in Perrin for Annex I habitats of favourable status. The habitats within the site and its environs do not correlate to habitats of a quality

/conservation value which would align with the definitions for Anex I habitats 4010 Northern Atlantic wet heath with Erica tetralix and 4030 European dry heath.

- Conservation objectives supporting document for Comeragh Mountains SAC (NPWS Nov 2021) recognises that the structure and function of heath habitat within the SAC is unfavourable – bad due to the same pressures observed within the site.
- Notwithstanding the clear assertion, supported by evidence, that the habitats that will be affected by the proposed development do not represent Annex I habitat condition, a clear distinction should be observed in relation to the level of protection provided to Annex I listed habitats occurring inside and outside of SAC boundaries. The level of protection outside Natura 2000 network should not be exaggerated to a status beyond the limit of the law and the purpose and intention of the Habitats Directive. Concept of shadow protection under the Habitats Directive has been considered by the courts Sweetman and Another v An Bord Pleanála and others (No 1) [2016] IEHC 277. The court rejected the argument that any lands which host priority habitat must automatically be afforded protection under the Habitats Directive.
- Disagree with the Department's statement that the heath habitat that has been degraded by burning and overgrazing will be restored to better condition, aligning to Annex I indicators. On the contrary, in accordance with the requirements of the EIA Directive and PDA 2000 the applicant has assessed the 'future baseline' and the 'do nothing scenario' i.e. the likely evolution of the baseline in the absence of the proposed development and this assessment has concluded that the further deterioration of habitat within and around the site is likely due to continued - pressures already identified as impacting habitat quality. Management measures (GLAS and REPS schemes) that have been adopted in the area have not been successful in protecting or restoring these habitats to date as evidenced in Department's own conservation objectives supporting document showing a progressive reduction in habitat extent of Annex I habitats within the SAC. Account should be taken of the benefits that the proposed development will bring to the potential restoration of Annex I habitat.
- Disagree with the Department's suggestion that it has not been established that the proposed project would not cause a net loss of biodiversity. The loss of heath habitat associated with the proposed development is not considered significant even locally

due to the baseline quality of the habitat. Biodiversity enhancement areas will be controlled and actively managed to encourage restoration of heath habitat. Community Development Fund terms and conditions require that a minimum of 40% of the funds be paid for not for profit community enterprises whose primary focus is promotion of initiatives towards the delivery of UN sustainable development goals.

- The Department has stated in their submission that the wind farm site is hydrologically, geologically and geographically linked to the Annex I habitats within the adjoining Comeragh Mountains SAC, being effectively an ex situ extension of the habitats outside the SAC boundary. Location within the same hydrological area, geological formation or physical locality does not make them linked from an ecological connectivitiy perspective. The site is in the foothills of the Comeragh Mountains. The Colligan river is within the site and originates within the foothills. The river does not originate from the lakes (Oligotrophic waters) which are qualifying interests of the SAC nor does it support the floating river vegetation communities representative of 'Watercourses of plain to montane levels with Ranunculion fluitantis and Callitricho Batrachion vegetation [3260]. Other than these QIs the SAC is not designated for any habitats or species which have attributes associated with river habitats. The proposed development will not have an effect on the existing drainage or hydrology of the site. As shown in table 2-2 of the AA screening the Comeragh Mountains SAC does not overlap with any of the actions or aspects of the proposed development and cannot be directly affected by the development.
- Having regard to the geospatial scale of the potential biophysical changes to the environment from the proposed development as shown in table 2-12 of the AA screening NIS the Comeragh SAC is not located within the area of the potential impacts such that it might be indirectly affected by aspects of the project. It is located beyond the zone of influence of the area of potential dust emissions, beyond the areas of habitat loss or disturbance and beyond locations of potential discharges to water. The Comeragh Mountains SAC does not host fauna that can move to the project area and then suffer mortality or other impact.
- Notwithstanding that the habitats outside the Comeragh Mountain SAC are 'similar qualifying interest habitats' of the SAC, these habitats cannot be viewed as an extension of the SAC and the Appropriate Assessment process extends to these

habitats only insofar as they are necessary to the conservation of the habitat types and species listed for the protected area" as per case C-461/17 Holohan and others v An Bord Pleanála.

- The potential impacts of the development as set out in table 2-12 of the AA Screening /NIS are fully outside the boundary of the Comeragh Mountains SAC and will not have any implications for the connectivity or ecological continuity of the SAC such that conservation objectives of the SAC could be affected. It is unclear as to how the Department deems that the removal of heath habitat located approximately 700m from the SAC boundary will have a bearing on the distribution of habitat within the SAC or on the species composition within the SAC or how this habitat located outside of the SAC is necessary to the conservation of the habitats or species for which the SAC is designated.

- Regarding third party submissions it is noted that The Comeragh Mountains has not been identified as a special protection area for birds since the programme for designation has been in place and is not designated for the protection of Annex I birds or the EU Directive. The Comeragh mountains are designated as a Special Area of Conservation SAC. AA screening confirms no likelihood of significant effects on the Comeragh Mountains SAC in light of the site's conservation objectives.

- Potential for effects on Freshwater pearl mussel has been assessed in accordance with the latest relevant reports. The screening report using the Source-pathway-receptor model process identifies that the turbine delivery route (TDR) is within the same sub catchment as the Lower River Suir SAC and is therefore potentially hydrologically linked. Similarly, the grid connection route (GCR) and TDR are within the catchment of a tributary of the River Finisk which flows into the Blackwater River (Cork / Waterford) SAC (002170). The Suir and the Blackwater rivers are designated for the protection of freshwater pearl mussel. There is no tangible hydrological pathway for effect for pearl mussel (Table 4-2 NIS) on the basis that the proposed works within the Suir catchment, along the turbine delivery route which are located adjacent to the transitional waters of the River Suir at Bellview Port are in a distinct waterbody sub-catchment (and waterbody type) from the location of pearl mussel, which is within the Clodiagh Catchment. Similarly the pearl mussel populations associated with the Blackwater River are within the Owentaraglin and Allow

catchments, which are distinct waterbody catchments from the River Finisk. The absence of a pathway in the source pathway receptor (SPR) model determines no potential for adverse effects on the Freshwater Pearl Mussel.

- Table 6.1 using the recommended approach in the guidelines which is to adopt the checklist of questions to ensure that short term activities or long term plans or project do not damage Margaritifera populations.
- Potential interactions with the lower river Suir SAC include:

  Turbine Delivery Route (TDR). Bellview port located adjacent to the transitional (estuarine) waters of the Lower River Suir Estuary. There is a requirement for accommodation works (laying of load bearing surface) at the container yard to protect the rail link and at the junction with the N29. These works are approximately 55m from the Lower Suir Estuary at their closest point. Additional accommodation works will include the temporary relocation of containers to facilitate vehicle movement.

  Section of road within windfarm site ca 1.6km in length located within the northern face of Milk Hill which is within the NIER_020 waterbody sub catchment, which is part of the Lower River Suir SAC.

  The proposed on-site borrow pit will be located on the boundary of the NIER_010 sub catchment.

  The freshwater pearl mussel populations in the Lower River Suir SAC occur within the Clodiagh River catchment located approximately 6.5km east of the proposed wind farm site, on the opposite side of the Comeragh Mountain range and in an entirely different catchment to the Nier.

  Potential interaction with Blackwater River (Cork/Waterford) SAC:

  Small stream (IE_SW_18FO20300) which is seasonally dry and is a tributary of the river Finsk (FINISK_020) is temporarily culverted. The Finisk ultimately flows to the estuarine waters of the lower Blackwater M Estuary/ Youghal Harbour which is part of the Blackwater River (Cork/Waterford) SAC. The freshwater pearl mussel populations in the Blackwater River (Cork/Waterford) SAC occur within the Blackwater main channel and the River Allow the nearest location approximately

2km west of the proposed temporary culvert location in an entirely different catchment to the Finisk,

Note extensive surveys to inform aquatic ecology assessment completed in 2020 including freshwater pearl mussel survey in the Nire, Finisk and Colligan Rivers.

Freshwater pearl mussel is absent from Colligan catchment. The small size of the tributaries and high energy and unstable nature of the Nier main channel makes this catchment unsuitable for freshwater pearl mussel. No evidence of this species in the Nier catchment. The small size of tributaries in this section of the Finisk make them unsuitable for freshwater pearl mussel. Survey of section of the Finisk where the habitat is most suitable for species (though water quality unsuitable) found no evidence of freshwater pearl mussel.

Table 6-3 checklist of questions that should be addressed to ensure that plans or projects do not damage Margaritifera populations. Shows no potential for the proposed development to damage Margaritifera populations or to impact on the criteria which are the structure and function necessary to support freshwater pearl mussel in the Lower River Suir SAC and the Blackwater River (Cork Waterford) SAC.

Drainage and Hydrology

- The drainage design for the proposed development is based on SUDS principles as per CIRIA Suds Manual for sustainable drainage design and in accordance with NatureScot (2019) Guidance – Good practice during wind farm construction (4th edition published 2019)
- Refute the Department's assertions the drainage design for the proposed development will not cause "alteration of the hydrological regime and removal of large volumes of water from peatland habitats."
- In relation to potential for hydrogeological connectivity between the proposed development and Comeragh Mountains SAC Table 11-12 in Chapter 11 Soils, Geology and Hydrogeology sets out the depth of groundwater strike encountered during site investigation. Many of the 4m deep trial pits did not encounter groundwater. From examination of the borehole profiles, it is evident that the water

ingress is associated with soil volume water as opposed to water in the bedrock. Competent bearing strata is typically encountered at the site at between 2m and 4m. As such the requirement for extensive excavation is limited for the purpose of construction of turbine foundations. The potential for drawdown of water will therefore be localised and would not extend to the SAC which is circa 700m away.

Ornithology.

- Regarding effects of habitat removal in particular for merlin, kestrel and hen harrier, it is noted that habitats are quite disturbed by agricultural practices and are of poor quality in relation to habitat conservation condition.
- The site is not an important part of a larger territory unit and does not support important numbers of bird species of high conservation concern. Ornithological surveys conducted between Summer 2019 and summer 2022 provide a robust picture of bird activity in the area.
- Hen Harrier was recorded during both summer and winter season on a total of 17 occasions. 12 sightings across four consecutive summer bird survey seasons. Of these 9 occurred during hen harrier breeding season (April-August) and were recorded across summer 2019, summer 2021 and summer 2022. No sighting of hen harrier in winter 2019/20 and a total of 5 sightings across winter 2020/21 and 2021/22 seasons combined. A total of 130 seconds of hen harrier flight time occurred within the flight activity survey area in the rotor sweep zone during the 1,080 hours of Vantage Point (VP) surveys carried out between 2019 and 2022. This equates to hen harrier activity within the rotor swepth zone for only 0.0033% of the 3.5year survey period.
- Merlin was recorded on 8 occasions during the survey period. 3 sightings of merlin across four consecutive summer bird survey seasons (2019-2022 inclusive) two of which occurred during the merlin breeding season (April-July inclusive). Breeding season sightings occurred in summer 2019. There were no breeding season records of merlin in 2020, 2021 or 2022. There were a total of 5 winter season sightings of merlin across the 3 consecutive winter seasons. A total of 180 seconds of flight time occurred within the flight activity survey area in the rotor sweep zone during the 1080

hours of VP surveys carried out between 2019 and 2022. This equates to merlin activity within the rotor swepth zone for only 0.005% of the 3.5 year survey period.

- Kestrel. The most frequently recorded raptor species. A total of 79 summer sightings recorded between 2019-2022, the majority of which occurred during the kestrel breeding seasons. Kestrel was confirmed nesting on site during surveys in summer 2020 (south of VP1) as outlined in Section 3.1.1.4 of the ornithology report. A total of 4,151 seconds was logged in the flight activity survey in the rotor sweep zone. This equates to kestrel activity within the rotor swepth zone for only 0.1% of the 3.5year survey period.
- Overall levels of raptor activity recorded during VP surveys including for hen harrier, merlin and kestrel in particular were not considered high, especially in the context of the numbers of sightings of these species relative to the length of time over which vp surveys were undertaken (3.5 consecutive years).
- The low levels of raptor activity recorded correlates with the habitat condition at the proposed development site and its environs. Location within the foothills of the Comeragh mountains where landscape is transitional towards agricultural usage, and habitats are subject to a high degree of disturbance and degradation through burning and overgrazing.
- The assessment of significance of effects on avifauna as presented in Chapter 10 of the EIAR has been carried out using best practice guidance (Percival 2003). In terms of the effects of direct habitat loss Table 10.5 identifies that the overall significance of the effects of habitat loss for hen harrier, kestrel and merlin will be high. For displacement during construction Table 10.6 the significance of effects for these species ranges from ‘medium’ to ‘high.’ For disturbance and barrier effects during wind farm operation, table 10.8 significance ranges from ‘low’ to ‘high.’
- Mitigation measures are prescribed in Section 10.7 of Chapter 10 of the EIAR aimed at reducing the disturbance effects on birds. Biodiversity Enhancement and Management plan has particular focus on enhancement of nearby agricultural lands for raptor species. Lands selected provide continuity of existing heath and grassland habitats in adjacent lands thereby potentially extending the territory of raptor species. The creation of meadow grassland to provide habitat for hunting barn owl and kestrel

and for ground nesting birds and includes provision of kestrel nest boxes, the inclusion of broadleaf planting and creation of heath habitat.

- Regarding occupation of the area by Golden Eagle (and white tailed eagle) it is noted that there are no historic or recent records reported on NBDC online database within these hectads for golden eagle or white tailed eagle. It is noted that there are records for white tailed eagle in the wider environment (fig 6.2) with most of these records relating to the years 2018 and 2019. Throughout he 3.5year ornithological survey period (April 2019-September 2022) there were no sightings of either golden eagle and white tailed sea eagle. The proposed site is therefore not an important habitat for these species and there are no nest sites nearby.
- Collision risk it is not significant for white tailed eagle or golden eagle. There are no known eagle nest sites within at least 15km of the proposed development site. Evidently the site and wider environment is neither a key foraging area nor located on a commuting route to a key foraging area for eagle species.
- The applicant will commit to carrying out inspections for and removing dead sheep in the wind farm area as carrion is a major foraging resource for eagle and the most likely reason that one might enter the wind farm site. Overall it is reasonable to conclude that risk to white tailed eagle and golden eagle from the proposed Coumnagappul wind farm is negligible.
- Regarding the robustness of Collision Risk Model (CRM) is and in particular how nocturnal movement of golden plover is addressed, while it is recognised that the viewshed coverage for the proposed development does not cover the entirety of the 500m buffer, the completeness of the CRM has not been affected on the following basis:
    - The CRM has been calculated based on 3.5 years of data (significantly over 2 yrs recommended in the guidelines).
    - The ornithologists who undertook bird activity surveys for the proposed development are experienced and competent in particular at surveys for windfarm developments for which the estimation of flight height and distance is an integral part of the survey requirement. As such the potential for inaccuracies of position for flight line observations is low.

- The entire flight risk volume/flight risk window has been fully captured in the bird flight activity viewsheds for the proposed development and as such the data interrogated through the CRM is robust and complete. CRM calculation is based on the proportion of time that a bird occupies the risk area (flight risk volume/flight risk window) and includes a correction factor to account for the area of the 500m boundary that was captured by the viewsheds. As such the CRM method has an inbuilt process to account for viewshed coverage.
- The height band used in the CRM for the calculation of flight risk volume/flight risk window at 200m is greater than the height of the turbines 185m. As such the CRM has captured bird flights that are beyond the potential collision height of the turbines and as such is inherently precautionary.
- The flight risk volume/flight risk window covers fully the largest possible layout all the alternative layouts and ancillary structures and works as required by SNH guidelines.
- The CRM has been prepared in accordance with SNH best practice guidelines and is based on complete and accurate data which extends beyond the recommended 2 year survey period and covers the full flight risk volume / flight risk window.

- Using professional judgement in conjunction with the published sources nocturnal golden plover flight activity was addressed.
- Regarding proposed monthly fatality searches to quantify bird collision at the site this is in accordance with best practice (Fijn et al 2012 and Grunkorn 2011) in terms of search area (minimum radius hub height 81m) and monitoring interval (monthly). Monitoring frequency may be altered in response to carcass removal trials which will continue for the duration of fatality searches. The results of the post construction monitoring programme will be submitted annually to the competent authority and NPWS and dependent on the results the frequency of monitoring requirements will be agreed with NPWS. As a minimum monthly surveys will be conducted during years 1, 2,3, 5,10 and 15 post construction. The applicant is prepared to adopt a more frequent monitoring as the Department sees fit in light of annual reporting.
- In relation to nocturnal species such as woodcock and owl, targeted nocturnal surveys were undertaken within the site on 9th June and 16th July 2020. The survey

methodology employed in relation to nocturnal surveys is described in Section 2.3.2.2 of the MWP Ornithology report in Appendix 10.1 of the Coumnagappul Wind Farm EIAR. The purpose of the nocturnal surveys was to determine the presence/absence of key nocturnal species at the site, such as woodcock and long eared owl, selected on the basis of the desktop study, which identified previous records for both species within the wider area.

- The nocturnal transect route encompassed a variety of open and closed habitats, including forestry, farmland and heath, representative of the habitats that pertain in the wider site and including potentially suitable habitat for both woodcock and long eared owl to establish the presence / absence of these species within the site. The area of forestry within the centre of the site adjacent to the existing farm track, surveyed as part of the 2020 nocturnal surveys, comprises potentially suitable habitat for breeding woodcock; however was considered to be sub-optimal by virtue of the limited size, being approximately 4.5ha in area, and no woodcock were recorded during nocturnal surveys. The nocturnal surveys undertaken in June and July 2020 were of suitable timing, duration and location to have indicated presence of breeding woodcock on site. The 2020 surveys undertaken are considered to have been adequate to determine whether the site supported breeding woodcock. Woodcock were not recorded during any of the bird surveys over the course of the 3.5year consecutive bird survey period. It is concluded that the site does not comprise important habitat for breeding woodcock.
- With regard to long eared owl the nocturnal survey visits undertaken in June and July 2020 fell within the breeding season for long-eared owl as per Hardy *et al* (2009) corresponded with the recommended visit schedule to check for young and count fledged young. Survey visits also correspond to timing outlined in SNH (2017) best practice guidance. Long eared owl were not recorded during the targeted nocturnal surveys in 2020. Long eared owl was not recorded during any other bird surveys undertaken over the course of the 3.5 year consecutive bird survey period, apart from one incidental record in summer 2019 of a juvenile calling from forestry outside and to the south of the site, at a remove of 0.9km from the nearest turbines (T10 and T11). It is apparent from the survey results that the proposed development site does not comprise important habitat for breeding long-eared owl.

- Regarding the appropriateness of bird transect routes and distribution and abundance survey area relative to representative habitats, a total of 29 monthly transect surveys (16 summer and 13 winter) undertaken over the course of the 3.5 year bird survey period (April 2019-September 2022, inclusive). The 2019 and 2020 summer and winter transects utilised transect route 1 which was located in the middle of the central valley within the site and passed through /by a variety of habitats, including areas of wet heath and wet grassland, and within areas of dry siliicius heath within approximately 100m of the transect route at its southern end. These heath and/or wet heath grassland habitats comprise suitable habitat for species such as snipe and red grouse, as identified by the Department in their submission. The 2021 and 2022 summer and winter transects (Transect 2 to 4) expanded the extent of site coverage in line with an evolving site layout and encompassed a variety of both open and closed habitats in the north-west corner of the site. While transect 2 to 4 were primarily located in forestry, they also encompassed wet grassland and considerable areas of wet heath, in particular at their eastern extents, where transects 2 to 4 all extend eastwards into expansive wet heath associated with the environs of Turbine 1 and Turbine 4. This can be seen in figure 7 of Section 2,3,2,1 of the MWP Ornithology report Appendix 10 of EIAR and with reference to habitat Map. (Fig 9.6 Appendix IV). In addition to the general transect surveys targeted walkover surveys for upland breeding species including snipe and red grouse were carried out in early June and early to mid July 2020 and 2022. Targeted walkover survey route was selected on the basis of potential suitable habitat for species such as red grouse and snipe, and other upland breeding species and was informed by the provisional site layout. The route selected encompassed extensive areas of wet heath, wet grassland and dry silicious heath in the northern half of the site. Selection of the route and the extent of site coverage for this survey was constrained by extensive upland burning to which parts of the site were subjected on an annual basis.
- Table 6-2 shows an overview of representative habitat types covered by distribution and abundance surveys showing that they encompassed a wide variety of habitats representative of the mix of both open and closed habitats occurring within the site, including heath which accounts for the habitat of the majority of turbine locations.

- In terms of distribution and abundance surveys, results for snipe and red grouse were virtually absent. There was one record of snipe during the general monthly transect surveys. The record comprised four snipes recorded during Transect 1 in February 2021 and was the only record of snipe recorded during the 29 monthly transect surveys. Snipe were not recorded during targeted walkover surveys of extensive areas of heath and wet grassland habitat in either 2020 or 2022. Red grouse were not recorded at any stage during the distribution and abundance surveys. Two incidental records of red grouse heard calling during the 3.5 year bird survey period.
- The distribution and abundance surveys undertaken over the 3.5 year bird survey period were of suitable timing and location to have indicated presence of snipe and red grouse on site. It is apparent from the survey results that the proposed development site does not comprise important habitat for breeding snipe and red grouse.
- The hinterland survey undertaken in 2020 targeted presence /absence of raptors within a 2km radius surrounding the northern part of the site encompassing a mix of lowland farming and more upland heath and afforested habitats which were considered to be representative of the overall site. All roads within this area were driven and suitable habitats surveyed from appropriate vantage points.
- The suite of distribution and abundance surveys undertaken at the site across a 3.5years survey period are considered to have adequately captured the avian baseline ecology of the proposed development site during the survey period so as to inform a robust assessment of the development.

Archaeology

- Regarding archaeology it is noted that there are no records of monuments and places sites within the development site. The Archaeological survey of Ireland has classified the two recorded archaeological sites (WA014-042---and WA014-044---) located within the site boundary as redundant records as they have concluded that neither are archaeological in origin. The wind farm layout was informed by the archaeological desktop studies and fieldwork and was designed to avoid the locations of all known or potential archaeological monuments and other identified

cultural heritage constraints within the site and its environs. The EIAR has concluded no potential for significant effects on archaeology.

- Regarding Impact on Scart Bridge, grid option passing Scart Bridge was discounted. Met mast will be accessed via Scart Bridge during construction operation and decommissioning phases. Met mast works will be carried out by small crew requiring 4x4 or all terrain vehicles with trailers or flat-bed lorry. Works will be completed within approximately 7 days. No works to Scart Bridge are required for this purpose and the vehicles to be used are not of an unusual load or size. Access to met mast is via dedicated access road. The power source for the permanent met mast will be taken from the ESB overhead line along the local road and will be an underground cable following the access road to the wet mast and will connect to an electrical kiosk which will be installed within the met mast site. As such the access and electrical supply to the met mast will be fully independent of the wind farm site.

Traffic and Transport

- Disagree that the proposal would have significant adverse impact on road users and road condition. Windfarm will have one main site entrance used for both construction and operation. A traffic management coordinator will be appointed for the project and there will be an objective to maintain the strategic capacity and safety of the N29, N25 and N72 carriageways at all times.
- Detailed design will be carried out with full stakeholder engagement.
- All HGV construction traffic can be adequately facilitated as set out in the EIAR without increased adverse impact on the local road network. Works will result in a less than 1 % temporary increase in traffic volumes on the N25 and approximately 1.3% increase in traffic volumes on the N72. The R672 and unclassified roads near Seapark (main access) Knockarana and Ballyconnery will see a more significant temporary increase in traffic volumes over the course of construction phase of circa 2.05%, 214%, 66% and 77%, respectively.
- As concluded in the EIA the negative or adverse effects on the receiving environment associated with the construction works at the main wind farm site are considered to be short term in duration and moderate in significance without

appropriate mitigation, which reduce to short term in duration and slight in significance following mitigation in the form of a traffic management plan.

- Commitment given that the condition of the local road will be repaired to the same if not better condition post construction activity.

Health and Wellbeing, Shadow Flicker, Noise and Property Value

- Regarding health and wellbeing, it is noted that there is currently no published scientific evidence to link wind turbines positively to adverse health effects. The proposed development complies with the current 2006 wind energy guidelines and draft 2019 guidelines of a 4x tip height set back (740m) from the nearest residential dwelling with the nearest dwelling being located 820m away.
- Regarding shadow flicker based on thresholds set out in Wind Energy Development Guidelines 2006, the predicted maximum theoretical hours per day of shadow flicker exceeds 30 minutes at 8 receptors. When considering total theoretical hours per year 9 receptors are predicted to exceed the 2006 guidelines threshold of more than 30 hours per year. The applicant is committed to minimising the potential for shadow flicker to occur and the shadow flicker assessment will inform the shadow flicker control measures designed for each turbine. The Applicant will install a shadow flicker impact control system at T1, T2 and T11 prior to the operation of turbines. Shadow flicker control modules will be used to ensure that a near zero level of shadow flicker is achieved, allowing for the reaction time of the shadow flicker control modules and also allowing for a short period of time for the turbine blades to slow down to a stop.
- Noise impact assessment shows adherence to the Wind Energy Guidelines 2006. Slight increase in noise levels during the construction and decommissioning phase.
- It is a reasonable assumption based on the available international literature, that on balance the provision of a wind farm at the proposed location would not impact on the property values in the area in the long term. Property valuation is dynamic with varying factors that cannot be solely based on the proximity of renewable

infrastructure. Once windfarm development is operational property prices tend to acclimate.

- Acknowledge that Table 3-2 of traffic management plan omitted Kilbrien National school however the school was fully assessed in the EIAR.

- Regarding carbon losses and gains analysis, Chapter 6 of the EIAR, based on the Scottish Windfarm Carbon Assessment tool, during the manufacturing and transportation of turbines and construction and decommissioning of the turbines 59,286-70,498 tonnes of CO2 will be lost to the atmosphere. This is based on the assessment of the Vestas (Model V162 6.0-7.2MW) the lower range of 6.0MW and the upper range of 7.2MW were both considered for the assessment and the results for each presented. This represents 1.85-1.87% of the total amount of CO2 emissions that will be offset by the proposed development. Overall, it is estimated that 3,176,680-3,814,600 tonnes of CO2 will be displaced over the proposed forty year lifetime of the wind farm i.e 79,417-95,365 tonnes of Co2 per annum, which assists in realising the ambitious goals of the climate action plan 2023. For the proposed development with 10 no turbines assuming a turbine power rating of 6.0-7.2MW and operational period of 40 years, the payback time for the manufacture, construction and decommissioning phases (including carbon losses from soil, felling of forestry etc) of the proposed development is estimated at approximately 1.1years. A total of 5.4hectares of new forestry will be replanted in accordance with the Forestry Act 2014 at the alternative site to compensate the loss of forestry at the site which will offset 2,851 tonnes of Co2 lost due to the felling of forestry.

- Regarding impact on groundwater and private wells, the dewatering of the foundation excavations is not expected to cause interference with domestic wells in the area due to large offset distances to known wells, relatively shallow depths of excavation and temporary short term nature of dewatering. To monitor groundwater during construction phase groundwater monitoring wells will be installed between areas of deeper excavations and sensitive groundwater receptors such as areas of shallow bedrock. The wells will be used to monitor groundwater levels and quality to assess any potential impacts during the construction works. Silt fencing to be carried out under the second rung of mitigation hierarchy. Mitigation be avoidance has been adopted in development design including appropriate setback distances from

watercourses. Monitoring measures included in the EIAR such that any potential for sedimentation is identified early. Monitoring is to be continual during instream works.

- Regarding community consultation, engagement for the proposed development began in 2019 with initial discussions with near neighbours and dwellings within 2km. (44no). Engagement was subsequently widened to dwellings within 3km (108no). Three public information evenings, three interactive webinars, and continuous project website updates and circulation of 7 no newsletters. A virtual consultation room, the appointment of a community liaison officer and dedicated phone number, a feature the project website allowing the submission of views or individual house calls and emails to stakeholders. Table 5.3 of chapter 5 shows the timeline of public consultation which comprised seven stages over a four year period. It is acknowledged that the Covid 19 pandemic curtailed the number of in person events which could be held between the years of 2020 through to 2022. In person events were supplemented with a number of webinars. Location of in person events in different locations were intended to facilitate the dispersed needs of the local community.
- The renewable energy project is an important part of Waterford County Council's contribution to lowering SO2 levels and in meeting statutory renewable energy targets. Having regard to national energy policy and the policies set out in the Waterford County development Plan which supports wind energy development in the county the proposed development is in accordance with the proper planning and sustinabale development of the area.

10.0 Planning Assessment

10.1 I have read the entire contents of the file, visited the site and surroundings, and have had particular regard to European, national and local policy in respect of the wind farm development. I have also had regard to all the submissions contained on file including the submissions of the various third-party observers, the prescribed bodies and the submissions from Waterford County Council.

10.2 All three following sections of this report (Planning Assessment, EIAR Assessment and the Appropriate Assessment) should be read in conjunction so as to enable holistic analysis and to avoid unnecessary repetition under each of the sections.

10.3 Planning Assessment

10.3.1 I consider the following issues are pertinent in determining the current application before the Board:

- Principle of Development & Planning Policy
- Legal and Procedural and Other Matters
- Landscape and visual impact

I note that impact on biodiversity and ornithology are also key issues to be considered in terms of the planning assessment. In order to avoid undue repetition, I would refer the Board to the relevant sections of the Environmental Impact Assessment below outlining the considerations on these aspects.

10.4 Principle of Development & Planning Policy

10.4.1National Policy recognises the need to urgently move towards a low carbon and climate resilient society with a sustainable renewable energy supply and associated grid infrastructure provision. Ireland is committed to achieving climate neutrality no later than 2050 with a 51% reduction in greenhouse gas emissions by 2030. These legally binding objectives are set out in the Climate Action and Low Carbon Development (Amendment) Act of 2021.

10.4.2The Climate Action Plan, 2024 (the third annual update to Ireland's Climate Action Plan 2019) follows the introduction in 2022 of economy wide carbon budgets and sectoral emissions ceilings states that large scale deployment of renewables will be critical to decarbonising the power sector. The Plan sets out a roadmap for taking decisive action to halve our emissions by 2030 and reach net zero no later than 2050. Climate Action Plan 2024 restates the key national target of 9GW for onshore wind by 2030.

10.4.3Transitioning to a low carbon and climate resilient society is a National Strategic Outcome of the Project Ireland 2040 National Planning Framework. Reflecting this, NPO1 seeks to enhance the competitiveness of rural areas by supporting innovation and diversification of the rural economy into new sectors and services including those addressing climate change and sustainability. NPO 54 seeks to reduce carbon footprint by integrating climate into the planning system in support of national targets for climate policy mitigation and adaption objectives as well as targets for greenhouse gas emission reduction. NPO 55 will seek to "promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050."

10.4.4.At a regional level, the Regional Spatial & Economic Strategy for the Southern Region 2040 recognises and supports opportunities for wind as a major source of renewable energy. RP01 requires that "any reference to support for all plans projects and development in the RSES should be considered to refer to environmentally sustainable development that has no adverse effects on the integrity of the European sites and no net loss of biodiversity. RPO99 supports sustainable development of wind energy at appropriate locations and related grid infrastructure in compliance with the Wind Energy Guidelines.

10.4.5 At local level Policy Objective UTL 13 of the Waterford City and County Development Plan 2022-2028 seeks to promote and facilitate a culture of adopting energy efficiency/ renewable energy technologies and energy conservation and seeks to reduce dependency on fossil fuels. UTL 13 furthermore seeks to facilitate and encourage, proposals for renewable energy generation, transmission and distribution developed fully in accordance with the Waterford Renewable Energy Strategy (RES), the wind energy designation map (Appendix 2 of the RES), the Waterford Landscape and Seascape Character Assessment undertaken to inform this Development Plan, and the National Wind Energy Guidelines, or any subsequent update/ review of these.

10.4.6I note as per the wind energy designation map of the Waterford Renewable Energy Strategy (Appendix 7 of the operative development plan), that the site is located in an area identified as an ‘exclusion zone’ or a ‘no go’ area for new wind energy developments, therefore the proposal is not acceptable in principle at this location and would materially contravene policy objective UTL 13 of the operative development plan as it would not be in accordance with the Waterford Renewable Energy Strategy (RES).

10.4.7The first party outlines that the site was chosen as a result of a feasibility study which analysed the constraints of the site, the surrounding environmental and other material factors pertinent to the previous Waterford City and County Development Plan 2011-2017 where the site location now (in the current Waterford City and County Development Plan 2022-2028) designated as an “exclusion” is in sharp contrast to previous “open to consideration” designation.

10.4.8 In terms of the designation and understanding the policy evolution, I note that as per Map A8.3 of the Landscape and Seascape Character Assessment, the proposed development is within an area considered to be ‘Most Sensitive.’ For development within a ‘Most Sensitive’ area to be considered for permission, development in or in the environs of these areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites. Policy Objective L02 of the development plan seeks ‘To protect the landscape and natural assets of the County by ensuring that proposed developments do not detrimentally impact on the character, integrity, distinctiveness or scenic value of their area and ensuring that such proposals are not unduly visually obtrusive in the landscape, in particular, in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units’. Having regard to the landscape and seascape character assessment and Policy Objective L02, I have concerns in relation to the ability of this landscape area to absorb a

windfarm development of the scale and nature proposed. This is addressed in 10.6 below.

10.4.9 To focus on renewable energy policy level, the divergence of the proposal with the development plan in terms of the location within a no go /exclusion area is a key issue in this case and is raised by the Planning Authority, prescribed bodies and third party observers. The submissions recommend refusal on the basis of location within an exclusion zone and also cite conflict with agri-environmental policies and tourism / recreation strategies. The first party in response asserts that the Board should adopt a near "presumption in favour" of a grant of permission on the basis of overriding public interest in the context of inter alia the Climate Action Plan 2024 and Climate Act 2001, Renewable Energy Directive (Red II). The applicant also notes the Board's powers to grant permission under Section 37G(6) of the Planning and Development Act, even if the development constitutes a material contravention of the Development Plan. The applicant considers the development plan to be irrational and an absolute outlier in the policy framework. It is outlined that the previous plan placed the development within a preferred area "considered suitable for wind farm development and should normally be granted planning permission unless specific local planning circumstances would support a decision to refuse permission in the context of the development plan" (County Development Plan2011-2017).

10.4.10 Whilst I acknowledge the apparent *volte face* in terms of the policy context, I note that the operative development plan was prepared with due regard to current national and regional climate action and planning policy, and was subject to evaluation by the Office of the Planning Regulator (OPR) for compliance with said policy. Indeed, I note a press release from the OPR dated July 2022 entitled "New County Development Plan a clear roadmap for sustainable growth". This document which is available the OPR website states that "the regulator praised the council for its clear commitment to supporting renewable national energy targets under the Climate Action Plan 2021. The Plan also contains a robust renewable energy strategy, which provides for measurable renewable energy targets, demonstrates the

local authority's clear commitment to supporting renewable energy targets under the Climate Action Plan 2021".

10.4.11I note recent case law which would support the view that the policies and provisions of the development plan would take precedent over national policy. In the case of *Brophy v. An Bord Pleanála [2015 IEHC 433]* Baker J rejected the argument that where there is a conflict between the development plan and national policy, expressed in the Ministerial Guidelines, the latter should prevail. A similar view was held in *Murtagh v An Bord Pleanála* (unreported High Court March 29th, 2023), which notes that the primacy of the development plan extends to cases where there is a conflict between its provisions and a policy of the NPF. The Development Plan is a key public policy document shaped by the local democratic process and clearly a decision by the Board to materially contravene the development plan policy would clearly only be made based on a robust argument and clearly developed rationale. I do not consider that the applicant has provided sufficient evidence to support a material contravention in this case. A refusal of permission would not militate against the wider ability for planning consent to be secured for wind energy proposals in County Waterford subject to the principles of proper planning and sustainable development and consistent with development plan policy and objectives.

10.4.12Having regard to the wording of policy objective UTL 13, which indicates renewable energy is to be '…developed fully in accordance with the Waterford Renewable Energy Strategy (RES), the wind energy designation map (Appendix 2 of the RES), the Waterford Landscape and Seascape Character Assessment (LSCA) undertaken to inform this Development Plan…', and where the development falls within an area identified as 'Exclusion Zone' on the RES Wind Energy Strategy Maps, and where the site is within a Most Sensitive area on the LSCA, I am of the view that to permit this development would be a material contravention of Policy Objective UTL 13 and would be contrary to the proper planning and sustainable development of the area. I consider that the proposed development should be refused on this basis.

10.5 Legal, Procedural and Other Matters

10.5.1 A number of the third parties raise issues of a legal and procedural nature which include :

Project Splitting

Ownership / Insufficient legal interest

Inadequate public consultation

Unauthorised development

Other matters

10.5.2 On the allegation of project splitting, also known as salami slicing, it is contended that this arises in the context of other landowners in the area having been approached regarding future wind energy proposals. Concerns are raised also in relation to cumulative effect of other proposed projects in the area. I note that the definition and the undesirable outcome of project splitting relates to the splitting of large scale developments into smaller applications in order to create subthreshold Environmental Impact Assessment (EIA) development proposals thereby circumventing the requirement to carry out EIA. I note that as the applicant has carried out a comprehensive EIA therefore there has been no attempt to circumvent the EIA process. Furthermore the EIAR addresses the cumulative impact assessment of the proposed development in combination with permitted and proposed projects within the study area. Whilst I acknowledge that the context is not static and other projects will emerge and evolve over time, I consider that the application has endeavoured to assess the cumulative impact based on available information as far as is practicably possible and I am satisfied that the information provided enables the Board to carry out a full comprehensive and robust assessment of cumulative impact.

10.5.3 As regards the issue of ownership and the question of sufficient legal interest to carry out the development, I have noted the third party submissions regarding the

unregistered land which forms part of the site. It is contended that the letters of consent provided with regard to same are by turbary rights holders and that any such consent can only refer to the turbary rights and that such consent confers no right to use or interfere with the land beyond this use. It is contended that a number of farmers have rights over the L51162 through Bleantasour Mountain commonage and not all consent to the necessary access. Further specific examples of the absence of necessary consent with respect to grid connection route are also detailed. The applicant did not specifically respond to the issues raised with regard to legal interest.

10.5.4 I acknowledge the complexity of landownership and easement rights in this upland context, and I consider that it is not a matter for the Board to adjudicate on such matters. I note that all matters raised are essentially civil matters between the parties and are not strictly matters for determination within the scope of planning legislation. In this regard I would refer the parties to Section 34(13) of the Planning and Development Act 2000, as amended as follows: "*A person shall not be entitled solely by reason of a permission under this section to carry out any development."*

10.5.5 Regarding public consultation a number of third parties have argued that no meaningful consultation took place with the local community. It was further asserted that the submitted information and analysis is unclear, does not meet 'plain english' requirements and hence acts as a barrier to citizen interpretation.

10.5.6 I note the provisions and advice set out in the Department of the Environment's "Wind Energy Development Guidelines 2006" under Section 4.4 titled 'Public Consultation with the Local Community' as follows:

"Planning authorities should encourage developers to engage in public consultation with the local community. While it is not a mandatory requirement, it is strongly recommended that the developer of a wind energy project should engage in active consultation and dialogue with the local community at an early stage in the planning process, ideally prior to submitting a planning application."

The guidelines explore the consultation process at all stages of the project and set out best practice guidance on pre-application public consultation in Appendix 2. It is noted that the provision of a good flow of information to the public about a proposed wind energy development prior to formal application can avoid conflict.

10.5.7 In their response submissions on the matter the first party acknowledges that the Covid 19 pandemic curtailed the number of in person events between the years 2020-2022, however the use of interactive webinars, a virtual consultation room and circulation of newsletters sought to engage and inform the public on an ongoing basis. Community consultation has been ongoing from the beginning of the detailed design and environmental assessment phases of the proposed development in 2019. Initial focus was on near neighbours and dwellings within 2km, and this was widened to 3km following feedback from Waterford County council. The detailed community consultation report is included in appendix 5.2 and summary of community consultation is provided in table 5.3.

10.5.8 Whilst I acknowledge the difficulties posed by the covid pandemic restrictions and complex nature of the development, having considered the information provided in the EIAR, including the Non-Technical Summary, I am satisfied that the level of consultation undertaken had regard to the relevant guidance for wind farms and meets the statutory obligations and is acceptable in this regard. Regarding consultation and notification procedures I note that as is evidenced in the wide ranging third party submissions members of the public clearly actively engaged in the planning process, gained a good understanding of the issues arising and effectively communicated their concerns.

10.5.9 Regarding concerns raised in respect of the application of Strategic Infrastructure Development procedures by An Bord Pleanála, regarding consultation with prescribed bodies I note that the Bord in pre-application consultations, provided a list of recommended prescribed bodies considered relevant for the purposes of Section 37E(3)(c) of the Act which included Waterford City and County Council. As summarised as Section 9 above Waterford City and County Council submitted a

detailed analysis of the proposed development including the minutes of the Special meeting of Dungarvan and Lismore District of 30th January 2024 at which the proposed development was discussed and recommendation to refuse was endorsed. Regarding neighbouring Tipperary County Council, it is noted that the site is entirely within the functional area of Waterford City and County Council.

10.5.10 Regarding the assertion that data collected from met mast prior to its authorisation by way of retrospective application should be inadmissible and that punitive action should be taken in respect of unauthorised development. I note that enforcement is a matter for the local authority and planning law provides for retention permissions to allow for regularisation of planning status.

10.5.11 Regarding the quality of information provided, the observers noted a number of inaccuracies or inconsistencies within the application documentation, thus questioning the robustness of approach. I note that given the level of documentation submitted, it would be impossible to guarantee accuracy or completeness and errors whether typos or other are inevitable. It is my view however that that the application as made does not preclude the Board from making a decision on the development as proposed on its planning merit.

10.5.12 Regarding the detail of proposed turbines I note that this assessment is based on the submitted detailed dimensions as submitted. As regards the details submitted I consider that the level of detail is in accordance with the requirements of the Planning and development Regulations 2001, as amended, and the extent and nature of the development is clearly set out.

10.6 **Landscape and Visual Impact**

10.6.1 A number of observers raise concerns about the landscape and visual impact of the proposal contending that the proposed development would be entirely obtrusive in this upland setting. Concerns are raised regarding the impact on tourism and recreational amenities in the area. Waterford City and County Council in its

submission strongly recommends refusal on visual grounds noting that the site is within an upland landscape designated as ‘most sensitive’ with very distinctive features and with a very low capacity to absorb new development without significant alterations of existing character over an extended area. It is asserted that the proposal would contravene policy Objective L02 of the County Development Plan which states that protection of the landscape and natural assets of the county shall be a priority having regard to the character, integrity, distinctiveness or scenic value of specific areas by ensuring that development proposals are not unduly visually obtrusive in the landscape, in particular in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units.”

10.6.2 Fáilte Ireland in its submission considers that the landscape and visual assessment within the application and EIAR is noticeably underestimated the likelihood of significant negative impacts on the landscape and visual character of an extensive area of the Comeragh Mountains. An Taisce also outlined concerns regarding potential for the development to change the character of the landscape over a wide area given the sensitivity of the landscape.

10.6.3 I note the detailed assessment of visual impact outlined within the EIAR which concludes that the proposed development will not result in significant visual impacts at surrounding receptors. I note that this is further considered at section 11.15 below. Having considered the detail I am inclined to conclude that the visual impact is understated. I would not agree with the conclusions within the EIAR with regard to the proposed development having a sub dominant visual presence or not appearing out of place in scale or function. Having considered the notable scenic amenity of the landscape, the numerous designated scenic routes and “most sensitive” landscape designation within the Waterford County Development Plan 2022-2028 I consider that that the proposal would affect the integrity of the character of this area and would therefore materially contravene policy LO2 of the operative development plan and would therefore be contrary to the proper planning and sustainable development of the area.

11.0 Environmental Impact Assessment

11.1 Statutory Provisions

11.1.1 This section of the report consists an Environmental Impact Assessment of the proposed development. The proposed development comprises a wind farm of 10 no turbines with an output capacity ranging from 60MW to 72MW depending on power rating employed. Schedule 5, Part 2, class 3(i) of the Planning and Development Regulations, 2001, requires EIA for 'Installations for the harnessing of wind power for energy production (wind farms) with more than 5 turbines or having a total output greater than 5 megawatts'. It is noted that the proposal also includes elements requiring EIA as set out in Schedule 5 of Part 2.

10 Infrastructure Projects

(dd) All private roads which would exceed 2000m in length".

The proposed development includes for 25.43 km of new internal tracks.

The proposed development therefore requires EIA.

EIA Structure

11.2 Compliance with legislation

11.2.1 The application falls within the scope of the amending 2015 EIA Directive (Directive 2014/52/EU). In terms of content and structure the EIAR, by Fehily Timoney Consultants in Engineering Environmental Science and Planning, is set out in grouped format in 4 volumes as follows:

Volume 1 Non-Technical Summary

Volume 2 Main Report

Volume 3 Appendices Part 1 and Part 2

Appendix 16.2 Book 1 and Book 2 Photomontage Booklet

Volume 4 EIAR Figure Index Sheet

Schedule of Commitments.

11.2.2 The EIAR provides a description of the project (windfarm, grid connection route (GCR) and turbine delivery route), comprising information on the site, design, size and other relevant features of the proposed development. It identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health ; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it considers the interaction between the factors referred to in points (a) to (d).

11.2.3 It provides an adequate description of forecasting methods and evidence used to identify and assess the significant effects on the environment. It also provides a description of measures envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects. The mitigation measures are presented in each chapter and are summarised in the Schedule of Commitments document. Where proposed, monitoring arrangements are also outlined. The vulnerability of the project to risks of major accidents and or natural disasters is addressed at 2.8. In relation to difficulties in compiling the required information, it is outlined at 1.9 that no difficulties were encountered in the preparation of the EIAR. At Chapter 3 a description of the main alternatives studied by the developer and the alternative layouts considered is provided and the reasons are set out for the preferred choice.

11.2.4 I am satisfied that the information provided in the EIAR is generally up to date, adequately identifies and describes the direct and indirect and cumulative effects of the proposed development on the environment and complies with article 94 of the Planning and Development Regulations 2001, as amended.

11.2.5 I note the details of the project team members, their qualifications and experience provided at Table 1.1 and Curricula Vitae at Appendix 1.2 of the EIAR. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality.

11.2.6 I am satisfied that the information provided is reasonable and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the project on the environment, taking into account current knowledge and methods of assessment. I am also satisfied that the information contained in the EIAR complies with the provisions of Articles 3, 5 and Annex (IV) of EU Directive 2014/52/EU amending Directive 2011/92/EU and Article 94 of the Planning and Development Regulations 2001, as amended.

Section 94 (a) Information to be contained in an EIAR (Schedule 6, paragraph 1)	
A description of the proposed development comprising information on the site, design, size and other relevant features of the proposed development (including the additional information referred to under section 94(b).	A description of the proposed development is contained in Chapter 2 of the EIAR including details on the location, site, design and size of the development, site infrastructure, arrangements for access and construction methodology, spoil and waste to be generated. In each technical chapter the EIAR details are provided on use of natural resources and the production of emissions and/or waste (where relevant).
A description of the likely significant effects on the environment of the proposed development (including the additional information referred to under section 94(b).	A description of the likely significant effects of the development on the environment is provided in the technical chapters, and associated documentation, of the EIAR. Technical chapters reflect the environmental parameters set out in Article 94. As set out below, I have some concerns that the significance of environmental effects with regard to biodiversity, ornithology and visual and landscape effects has been understated / underestimated within the EIAR.
A description of the features, if any, of the proposed development and the measures, if any, envisaged to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment of the development (including the additional	The proposed development includes embedded mitigation measures and measures to address potential adverse effects identified in the technical studies. These, and arrangements for monitoring, are summarised in Appendix 17.1 (Schedule of Commitments), Appendix 2.1 (CEMP) and Appendix 9.1 (Biodiversity and Habitat Management Plan).

information referred to under section 94(b).	While mitigation measures are largely capable of offsetting significant adverse effects identified in the EIAR as set out below I have concerns with regard to the ability or likely success of measures to offset significant adverse effects in relation to biodiversity, ornithology and landscape and visual effects.
A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the proposed development on the environment (including the additional information referred to under section 94(b).	A description of the alternatives considered is contained in Chapter 3 of the EIAR. The alternatives considered include, "do nothing," alternative location, alternative renewable energy technology, alternative turbine numbers, alternative layout and design, alternative construction methods, alternative transport routes and site access, alternative grid connection routes and alternative mitigation measures. The main reasons for opting for the current proposal were based on minimising environmental effects while providing significant renewable electricity to the national grid, in line with national energy and climate policy. I consider that the applicant has undertaken a study of reasonable alternatives in assessing the proposed development and has outlined the main reasons for opting for the current proposal before the Board. In doing so the applicant has taken into account the potential impacts on the environment.
Section 94(b) Additional information, relevant to the specific characteristics of the development and to the environmental features likely to be affected (Schedule 6, Paragraph 2).	
A description of the baseline environment and likely evolution in the absence of the development.	In each technical chapter the EIAR details are provided on the existing baseline environment and a 'do nothing' scenario is considered.
A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required	The methodology employed in carrying out the EIA, including the forecasting methods is clearly set out, in each of the individual chapters assessing the environmental effects. The applicant has indicated at 1.9 that no difficulties were encountered in the preparation of the EIAR.

information, and the main uncertainties involved	I note the concerns raised in relation to forecasting methods with regard to biodiversity, ornithology and visual and landscape impact.
A description of the expected significant adverse effects on the environment of the proposed development deriving from its vulnerability to risks of major accidents and/or disasters which are relevant to it.	This issue is dealt with at 2.8 and in the CEMP which includes Emergency Response Plan (ERP) which provides details of procedures to be adopted in the event of an emergency relating to health and safety or environmental protection. No significant effects associated with major industrial accidents are anticipated as the site is not connected with or in close proximity to any SEVESO site. Fire risk is addressed. Risks with regard to peat stability is addressed in Chapter 11 Flood Risk Assessment is addressed in Chapter 12. The risks are generally reasonably assessed. I have some concerns with regard to the issue of peat stability which requires more detailed assessment.
A summary of the information in non-technical language.	This EIAR information non-technical summary is provided within Volume I. I have read this document, and I am satisfied that the document is concise and comprehensive and is written in a language that is easily understood by a lay member of the public.
Sources used for the description and the assessments used in the report	The sources used to inform the description and the assessment of the potential environmental impact are set out within each chapter and are generally appropriate and sufficient. I note concerns have been raised in respect of biodiversity, ornithology, landscape and visual effects which are further detailed below.
A list of the experts who contributed to the preparation of the report	The issue of various experts who contributed to the report is addressed within Chapter 1 at Table 1.1 and Appendix 1.2 and generally within the introductory section of each of the chapters with details of the individuals expertise and demonstrating the competence of the person in preparation of the individual chapters within the EIAR.

11.2.7I have carried out an examination of the information presented by the applicant, including the EIAR and the submissions made during the course of the application. A summary of the submissions made by the prescribed bodies and observers, during the course of the application have been set out in section 6.0 of this report. The main issues raised specific to EIA relate to:

Visual impact

Material impacts

Water quality

Residential amenity impacts

Impact on biodiversity

Impact on ornithology

These issues are addressed below under the relevant headings and as appropriate, in the reasoned conclusion and recommendation.

11.3 Consideration of Alternatives

11.3.1Article 5(1)(d) of the 2014 EIA Directive requires: that an EIAR contain (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment." The EIAR addresses the matter of alternatives in Chapter 3 of the EIAR in terms of the "do nothing" option, alternative location, alternative renewable energy technology, alternative turbine numbers, alternative layout and design, alternative construction methods, alternative transport routes and site access alternative grid connection routes and alternative mitigation measures.

11.3.2In a do nothing scenario the site would remain in use as agriculture and forestry and the prospect of sustainable energy creation by wind resource would be lost at this site. Wider socio economic benefits would also not arise. Table 3.1 provides a comparison of potential residual environmental effects arising from the proposed development versus the do nothing scenario.

11.3.3Alternative sites considered included Derrncullig,Co Kerry. Killognaveen Co Kerry Knockmanagh Co Kerry and Dyrickhil Co Waterford, all of which are considered to be viable sites for wind energy development. It is noted that while the current proposal was deemed suitable it does not preclude other sites within EM Power's portfolio being brought forward for consideration.

11.3.4It is noted that the site specific assessment carried out in 2018 based on criteria then prevailing including location within an "open to consideration" zone in the County Development Plan Wind Energy Strategy. As noted above the Current Waterford County Development Plan Wind Energy Strategy 2022-2028 designates the site as an 'exclusion zone'. Table 3.2 of the EIAR provides a comparator in terms of environmental effects concluding that Coumnagappul was selected as a location with relatively low potential for environmental effects due to, for instance proximity to grid connection, low housing density, good natural screening, limited potential for effects on existing land use and limited potential for cumulative effects with other wind energy development.

11.3.5 Regarding Alternative Renewable Energy Technologies, solar energy is considered. It is outlined that the site is sub optimal for solar energy development given that the average annual radiation and associated PV power potential for the site is mapped as low and the technical constraints in developing solar panels on steep topography would be prohibitive.

11.3.6Regarding alternative turbine numbers, layout and design it is noted that the development was subject to revision and refinement and developed as a collaborative process to avoid significant environmental effects while maximising the wind resource. A comparison of potential residual effects of mitigation by design is outlined at table 3.4. Alternative turbine scales and layouts developed as an iterative design process with the final design iteration chosen as a 10 turbine array and a 185m tip height which it is asserted provides or the greatest amount of energy

production while avoiding potential significant effects on the receiving environment and achieving appropriate setback from dwellings and sensitive environmental receptors. Table 3.6 sets out to summarise potential residual effects of 5 design iterations considered.

11.3.7 Regarding alternative construction methods site specific data has informed likely construction methods. Regarding alternative transport routes and site access this was considered in relation to turbine components, general construction related traffic and site access locations. The port of Waterford was selected as port of entry as it is located closer to the site with connection via national road infrastructure reducing requirement for third party land take and or remediation work on the turbine delivery route. Alternative access routes considered and access from the west off the L5119 was determined to be the optimal route. Four alternative grid connection routes are noted all consisting of underground connection. The 110kv grid connection feasibility study is presented in Appendix 3.1 and a comparison of potential environmental effects of each option is shown in table 3.7. Option D was identified as the preferred route option as it has minimal number of bridges along the route, has the least interaction with the natural environment in terms of drains/culverts watercourse crossings. While there are several archaeological features along the route they are mainly ring forts and enclosures on which there is little potential for effects.

11.3.8 Regarding alternative mitigation measures, mitigation by avoidance is central to the approach. The avoidance of ecologically sensitive areas of the site reduces the potential for environmental effects. Best practice design and mitigation measures seek to reduce risks.

11.3.9 I note that some of the third party observers assert that the consideration of alternatives is inadequate citing particularly alternative renewable energy sources. Having reviewed and assessed the EIAR I consider that the process of site selection, consideration of alternative layouts, configurations and technologies followed a comprehensive process. It is clearly outlined how the proposed development evolved and how it was adjusted to take into consideration environmental effects. On balance

I consider that the requirements in terms of reasonable alternatives have been satisfactorily discharged and the requirements of the EIA Directive in this regard have been met.

11.4 Vulnerability to risks of major accidents and/or disasters

11.4.1 Article 3(2) of the Directive requires a consideration of the vulnerability of the project to risks of major accidents and/or disaster that are relevant to the project concerned. This is addressed at chapter 2.8 of the EIAR and in individual topic chapters for instance with regard to flooding (chapter 12) and peat stability (chapter 11). Risk of flooding is deemed to be low. The CEMP includes an emergency response plan ERP providing details of procedures to be adopted in the event of an emergency relating to health and safety or environmental protection.

11.4.2 The potential risk of peat instability is addressed in chapter 11 of the EIAR. The risk is deemed very unlikely. Land slippage contingency measures (excessive movement or onset of peat slide) are included within the CEMP. I have some concerns with regard to peat stability analysis and this issue is further outlined at 11.6 below. The risk of contamination during construction operation and decommissioning is unlikely having regard to mitigation measures as set out in the CEMP. The risk of industrial accident / fire is unlikely and would have limited consequences. No potential for significant in combination or cumulative mitigation effects associated with the potential for impact by major accidents and or disasters. I consider that there are unlikely to be any significant effects deriving from major accidents and or disasters.

11.5 Consultation

11.5.1 A number of third parties consider the consultation to be inadequate. Chapter 5 of the EIAR outlines the EIA scoping and consultation outlining that public consultation was facilitated over four years. Public consultation meetings were online and in person and advertised on the project website and also in local newspapers and representatives and invitations set by post to nearby dwellings. Project information

newsletters were also distributed and a dedicated email address, phone number and postal address provided with circulated materials so members of the public could directly contact the project team. A project website https://coumnagappulwindfarmsid.ie/ remains available with information and material to inform the public.

I note the provisions and advice set out in the Department of the Environment's "Wind Energy Development Guidelines 2006" under Section 4.4 titled 'Public Consultation with the Local Community' as follows:

"Planning authorities should encourage developers to engage in public consultation with the local community. While it is not a mandatory requirement, it is strongly recommended that the developer of a wind energy project should engage in active consultation and dialogue with the local community at an early stage in the planning process, ideally prior to submitting a planning application."

The guidelines explore the consultation process at all stages of the project and set out best practice guidance on pre application public consultation in Appendix 2. It is noted that the provision of a good flow of information to the public about a proposed wind energy development prior to formal application can avoid conflict.

11.5.2 A summary of the community engagement main conversation themes is provided in Appendix 5.2 Coumnagappul Community Consultation Report. It is stated that community inputs influenced the evolution of the design of the proposed development. I acknowledge the difficulties posed in terms of ensuring meaningful and participative community engagement given the rural location and the complex nature of the development. Having considered the information provided in the EIAR, I am satisfied that the level of consultation undertaken had regard to the relevant guidance for wind farms and meets the statutory obligations and is acceptable in this regard.

11.6 Likely Significant Effects on the Environment

11.6.1 This section of the EIA identifies, describes and assesses the potential direct indirect and cumulative effects of the project under each of the environmental factors referred to in Article 3(1) of the Directive as follows:

- (a) Population and human health
- (b) Biodiversity, with particular attention to the species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC
- (c) Land, soil, water, air and climate
- (d) Material assets, cultural heritage and the landscape;
- The interaction between the factors referred to in points (a) to (d).

I will address the environmental factors in the following chronology:

Population and Human Health

Biodiversity

Ornithology

Land, Soil and Geology

Water – Hydrology and Hydrogeology

Air and Climate

Noise and Vibration

Material Assets

Cultural Heritage

Landscape and Visual Impact

Utilities, Telecommunication & Aviation, Traffic & Transport

Interactions of the Foregoing

Reasoned Conclusion

11.7 Population and Human Health

11.7.1 Chapter 6 of the EIAR addresses the potential effects of the proposed development on population and human health while Chapter 13 address Shadow Flicker. Other environmental factors with the potential to impact on population and human health, such as air quality, noise, traffic and transport, landscape and visual impacts soil and water are addressed in the respective relevant chapters of the EIAR and are further addressed below.

11.7.2 The EIAR study area relates to the site, the grid connection route (GCR) and turbine delivery route (TDR) and the methodology for assessment is clearly set out. The assessment of potential impacts is considered for the construction, operational and decommissioning phases of the project as well as residual and cumulative impacts.

11.7.3 The baseline environment is described in terms of population and settlement patterns, employment and economic activity, land use, recreation amenity and tourism and human health and safety. In terms of overview, the location of the site is a rural area with generally stable populations between 2006 and 2016. Land use in the vicinity is dominated by forestry and agriculture. The nearest settlements of Dungarvan and Clonmel are 16.7km and 14km respectively from the site. There are no buildings within 4 times tip height of the proposed wind turbines while there are 40 properties within 2km of the turbine array. The closest residential property is circa 820m from T10 and 1.2km south of T12. (Fig 2.5. Volume IV). The closest schools are Kilbrien NS 3.6km south and St Mary's NS 3.8km west. There are three operational wind farms, 1 permitted wind farm and one proposed wind farm (Dyrick Hill recently refused by the Board) within 20km.

11.7.4 Land use on the site comprises heathland and pastureland. Two recorded archaeological sites within the site have been classified as redundant records by Archaeological society of Ireland. A further 28 archaeological sites are noted within 1km of the site boundary. The grid connection route comprising underground cabling between the proposed on site substation and existing Dungarvan substation. Cable works will include existing watercourse and drain crossings and the installation of 30 no precast joint bays. One horizontal directional drilling (HDD) crossing is required.

11.7.5 Large components of the wind farm construction will be transported via the turbine delivery route TDR including the N29, N25, N72 R672 and L5119. The TDR is confined to the public road corridor with the exception of locations where temporary accommodation works will be required to facilitate oversized loads.

11.7.6 As regards tourism the most significant tourism and recreation activities in proximity to the site relates to hiking and scenic trails associated with the Comeragh Mountains and Nire Valley. A number of tourism and recreational amenities located within 15km of the site are set out including walking/hiking cycling, glamping, clay pigeon shooting, eco camping, animal sanctuary, fly fishing, equestrian activity, mountain climbing and sports grounds. As regards human health and safety analysis of health statistics found general health status of persons living in the study area 'very good' or 'good' aligning broadly with national and county figures. No evidence of slope instability or flood events on the site. Uncontrolled burning of areas of heath habitat is noted.

11.7.7 A description of the likely effects of the development on population and settlement patterns, employment and economic activity, land use, recreation amenity and tourism and human health and safety including potential for the development to cause accidents and or natural disasters and the vulnerability of the project to potential disasters/accidents is outlined in relation to construction phase, operational phase and decommissioning. In relation to cumulative effects, 20km distance was chosen as the zone of influence.

11.7.8 In relation to likely effects, during the construction stage a slight short term increase in population is likely giving rise to short term neutral impact. Construction works on grid route will be undertaken on a rolling basis with short sections of road closure over an approximately 18-24 month period giving rise to some level of disruption and inconvenience. Given the transient nature a temporary neutral impact is anticipated.

Potential impacts during windfarm construction and delivery will give rise to delay and disruption however mitigation will apply to ensure no permanent impact.

11.7.9 Regarding operational impacts on socio economics it is expected that the operational phase could create 14.4 – 28.8 long term jobs (operation maintenance, back office support and indirect jobs). Decommissioning phase impacts will be similar to those during construction. An estimate of between 102 and 122 jobs could be created during the construction operation and maintenance phases of the development. Rates and development contributions will contribute significant funds to Waterford City and County Council. A community benefit scheme is proposed which will be distributed to the local community and which will have a significant positive effect on socio economic profile of the study area. An average of €337,155 per annum is anticipated based on the production of 68MW per year.

11.7.10 Regarding impact on property values it noted that that there have been no empirical studies carried out in Ireland on this issue. Based on available international literature (Lawrence Berkley National Laboratory for the US Department of Energy US -2009, 2013, Centre for Economics and Business Research commissioned by Renewable UK 2014, Heblich et Al Scotland 2016), it is noted that findings indicate that wind farms have not impacted property values. On balance it is concluded that the provision of the Coumnagappul wind farm will not impact on property values in the local area.

11.7.11 Shadow flicker is addressed in chapter 13 of the EIAR. A study area of 1,620m from each of the 10 wind turbines is selected based on ten times the maximum rotor diameter 162m for the Vestas V162 turbine. The assessment considers all potential shadow flicker sensitive receptors identified within the study area, including habitable residential dwellings. Receptor locations are detailed on Figure 13.1 Volume IV[5] and presented in tabulated format in Appendix 13.1 Volume III. Predictions of shadow flicker effects were undertaken using industry standard software package ReSoft

[5] I note that figures 13.1 and 13.2 are not included in the Board's hard copy file but appear on digital file and in dedicated website https:///coumnagappulwindfarmsid.ie

WindFarm. A total of 15 receptors are identified within the 1,620m shadow flicker study area the closest receptor being 820m from a turbine. Appendix 13.1 contains the model input data for all receptors including window details. Modelling parameters and assumptions are detailed. The shadow flicker model calculates the total theoretical occurrence of shadow flicker for all receptors per year based on a theoretical worst case scenario assuming clear sky, that turbines are always aligned face-on to each window and that there is a clear and undisturbed line of sight between the windows and the turbines (except where this is prevented due to topography). In reality actual shadow flicker events will only be possible for some of the time. Historical weather data was used to provide a correction factor to ensure more realistic prediction however the levels of shadow flicker remain a conservative estimate. There is potential for shadow flicker to occur at 12 of the 15 receptors considered within the study area. The predicted maximum theoretical hours per day of shadow flicker exceeds 30 minutes at 8 receptors. (Table 13.3). There is no potential for cumulative shadow flicker effect with the existing Tierney turbine (5.1km west of the closest proposed turbine).

11.7.12 Regarding impact on land use the clear felling of forestry 5.4ha will be under felling licence and an equivalent area will be replanted. The installation of grid connection and turbine delivery will give rise to temporary effects on land use. Operational effects on agricultural land use and practice are not significant. There is no evidence of harmful link between the effect of windfarms on grazing livestock. The proposal includes the creation of internal access track of 25.4km largely new road infrastructure. The biodiversity enhancement plan will seek to manage and improve higher value habitats.

11.7.13 Regarding impacts on tourism and recreation it is asserted that while the proposed wind farm would represent and intensification of such development in the local landscape context within up to 5km, the development will be well assimilated without undue conflicts of scale with underlying landform and land use patterns. The magnitude of impact is deemed to be high-medium within the site and its immediate environs (c1km) reducing to medium for the remainder of the central study area.

Beyond 5km the magnitude of landscape impact is deemed to reduce to low and negligible at increasing distances as the wind farm becomes a proportionately small and integrated component of the overall landscape fabric. Research with regard to windfarm and tourism trends in Scotland noted no detrimental impact on the tourism sector. Fáilte Ireland Research (2008 updated 2012) found that energy projects in a rural area can have both negative and positive impact with temporary periodic or even seasonal impacts occurring during construction or operational periods. 2022 public attitudes monitor document produced by wind energy Ireland provided findings indicating favourable attitudes to wind farms.

11.7.14 The hiking, amenity and walking trails associated with the Comeragh Mountains are the most proximate tourist attraction to the proposed wind farm. It is asserted that while the proposed windfarm will represent an intensification of development in the local landscape context particularly within up to 5km, the scale is well assimilated into the landscape.

11.7.15 Regarding health and safety, the construction phase of the project has potential for temporary significant negative impact if unmitigated. Construction safety protocols and traffic management measures will ensure no significant effect. Potential impact from major accidents and natural disasters have been examined in relation to flooding, fire, major instances involving dangerous substances, catastrophic events and landslides. There is limited potential for major accidents or natural disasters to occur at the site. Emergency protocols will be in place. Regarding potential health and safety impact from cables and electromagnetic interference the electric and magnetic fields associated with the proposed cable fully complies with International Commission on Non Ionising Radiation Protection (ICNIRP) and EU guidelines on exposure. It is outlined that a literature review regarding the potential impact of operational wind farms on human health concluded that there is no scientific consensus to support an association between negative health impacts and responsible wind turbine development. Residual impact on human health is expected to be imperceptible.

11.7.16 The operation of the Coumnagapul wind farm will result in the net displacement of c46,358 tonnes of CO2 per annum which would otherwise be emitted through the burning of fossil fuels. In the do nothing scenario the existing land use on site would continue and the opportunity to harness the wind energy capacity on the site would be lost. The opportunity for employment related to construction operation and decommissioning would be lost as would development contributions, rates and community benefit fund.

11.7.17 As regards cumulative effects existing permitted and proposed windfarms within a 20km distance were considered as well as smaller developments within 500m of the site. Developments in the vicinity of the site, GCR and TDR tend to be small scale one off housing and agricultural developments and would give rise to an imperceptible cumulative impact with construction and operation of the proposed wind farm in relation to population human health and material assets.

11.7.18 The cumulative effect of existing permitted and proposed windfarms on land use in the area, by way of the introduction of additional renewable energy land use and an intensification of development within the landscape context is noted. This is considered to be non significant to slight long term negative on agricultural land availability in the area. Cumulative effects of the proposed windfarm in combination with permitted and proposed developments if developed concurrently would give rise to a degree of benefit in terms of the local businesses particularly in the village of Ballymacarbry and the nearby towns of Dungarvan and Clonmel. The combined electricity generating capacity would have a long terms significant positive impact on national renewable energy resources as well as reduction in requirement for use of non-renewable fossil fuels.

11.7.19 Mitigation Measures in relation to population and human health are set out at 6.8. Mitigation measures for land use are primarily related to preliminary design stage including mitigation by avoidance and design. Construction and decommissioning works will be planned and controlled in accordance with a construction and environmental management plan CEMP (Appendix 2.1 Volume 3). Mitigation

measures in relation to human health and safety is set out in relation to safety protocols and methodologies as outlined in the CEMP. Operational safety measures are outlined. The measures referred to are typically standard good construction /operational practices.

11.7.20 Regarding shadow flicker it is proposed to install a shadow flicker impact control system at turbines 1, 2, and 11 as these have the potential to cause shadow flicker on nearby properties. These measures will be applied to ensure that near zero shadow flicker effects occur, allowing for the reaction time of the shadow flicker control modules and also allowing for a short period of time for the turbine blades to slow to a stop.

11.7.21 Regarding noise this is addressed in Chapter 8 Noise and Vibration and is assessed separately at 11.12 below. Predicted noise levels during construction and decommissioning phase are not significant, are short term and are within recommended threshold values subject to proposed mitigation. There is potential for elevated noise levels due to grid connection works resulting in temporary significant effect however these works will be for short duration at any particular property. Where works are to occur over an extended period at a given location a temporary barrier or screen will be used to reduce noise level below noise limit. Regarding operational phase the predicted noise meets daytime and nighttime noise limits derived using the Wind Energy Guidelines 2006.

11.7.22 Regarding traffic and transport subject to implementation of the traffic management plan residual impact will be short term imperceptible negative.

Assessment of Population and Human Health Chapter

11.7.23 I have examined analysed and evaluated Chapter 2 of the EIAR associated documentation and submissions on file in respect of the effects of the proposed development on population and human health. I am satisfied that the applicant has

presented a good understanding of the baseline environment, and that the key impacts in respect of the likely effects on population and human health have been identified and assessed. I consider that the key direct and indirect effects arising will be short term effects on people living, working and travelling on the public road network in the area of the site during construction by way of noise, dust additional traffic and short term road closures. At all stages direct and indirect positive effects will arise in terms of local economic effects. During operation potential noise, shadow flicker, and the impacts on landscape character and visual effects on residential amenity will have greatest impact on receptors close to the site. The community benefit fund will have long term positive effect.

11.7.24 Mitigation measures typically comprise standard good practice and or operational practices, which if implemented will largely offset predicted significant effects. I note concerns with regard to the ability to offset landscape and visual effects and this is addressed in detail under landscape 11.15 below. Regarding operational noise, this is addressed at 11.13 below. I conclude that on the basis of the information presented, which provides a conservative analysis, the predicted noise levels and criterion for assessment, I am satisfied that operational noise impact will not give rise to be significant adverse effect on residential amenity.

11.7.25 Regarding shadow flicker (Chapter 13) predictions were undertaken using industry standard software package ReSoft Windfarm. Shadow flicker is assessed for all sensitive properties within 10 rotor diameters of the proposed development. The modelling exercise carried out to identify the likely extent of shadow flicker is conservative in that it assumes worst case conditions. In practice effects of shadow flicker will be less due to natural screening, dwelling orientation. There is potential for shadow flicker to occur at 12 of the 15 receptors within 10 rotor diameters (1,620m). The predicted maximum theoretical hours per day of shadow flicker exceeds 30minutes at 8 receptors. Mitigation proposed involves the installation of a shadow flicker control system at turbines 1, 2 and 11 which will ensure a near zero level of shadow flicker. I am satisfied that the issue of shadow flicker can be effectively mitigated, and significant impacts do not arise.

11.7.26 Regarding devaluation of property I consider that on the basis of evidence submitted it is equally likely that the perception of greater or lesser value due to proximity to wind farm development will occur. Rates and development contributions will provide significant funds to Waterford City and County Council. The applicant proposes a community development fund in accordance with the terms of the renewable energy supply scheme which will provide benefits to the local community. It is anticipated that an average of €337,55 per annum to the local community for the first 15 years of operation which will provide a long term positive effect. Regarding health and wellbeing the applicant has outlined extensive research which concludes that exposure to wind farms does not trigger adverse health affects. On balance I consider that the proposed development is not likely to have significant adverse health effects.

11.7.27 Having regard to the foregoing, it is considered the main significant direct and indirect effects on population and human health are short term, direct and indirect negative effects arising from the construction phase on residential amenity and use of the public road, and longer-term the potential for noise, shadow flicker and landscape and visual effects, in particular for residents in proximity to the wind farm site, and with open views of it. Effects will be mitigated by distance, implementation of standard good construction practices, management of construction traffic, distance of turbines from residential dwellings, intervening vegetation, and controlled operation of wind turbines in accordance with the defined parameters. Short term positive effects will arise for the local economy during construction and longer term positive effects for the local community with the community benefit fund. Landscape and visual impacts will remain.

11.8 Biodiversity.

11.8.1 Chapter 9 of the EIAR addresses biodiversity. A Natura Impact Statement was also submitted with the application and the implications of the proposed development for

Natura 2000 sites is addressed in the Appropriate Assessment at 12.0 below. The assessment of biodiversity effects within the EIAR outlines legislation and policy at European and National Level. The methodology of appraisal is devised in accordance with relevant guidance and industry best practice and involved desk study, scoping and consultation, and field surveys. Detailed botanical surveys and habitat classification were carried out on 27th. 28th July 2020 and 7th and 9th September 2021 and 7th June 2022. During the walkover surveys areas of potential suitable habitat for marsh fritillary butterfly[6] were identified within the site. Targeted larval web surveys for the species were undertaken within these areas on 8th September 2021 within the optimal period (August-September) on dry day with no rain and little wind. Mammal surveys were undertaken on 27th and 28th July 2020 and revisited on 7th and 8th September 2021.

11.8.2 The mammal survey covered the entire development footprint and surrounding suitable habitats in the application boundary. Bat surveys were completed within the study area (wind farm site plus 275m buffer) during 2020. Surveys encompassed preliminary roost assessments, summer roost inspections, activity surveys, and static detector surveys. Otter surveys were conducted as part of the aquatic ecology surveys which were completed in 2020. Aquatic ecology surveys included walkover surveys, catchment wide electro fishing, white clawed crayfish surveys, freshwater pearl mussel survey and biological water quality surveys. Observations of other species and groups including Herpetofauna and invertebrates were recorded.

11.8.3 Regarding survey limitations, seasonal factors that affect distribution patterns and habits of species were taken into account when conducting the surveys. The potential for the site to support populations of conservation importance that may not have been recorded during field surveys due to seasonal absence or nocturnal/cryptic habits was assessed. No limitations in the scope, scale or context of the assessment of habitats and species have been identified. Regarding bat survey and analysis limitations were noted (species identification louder frequency

[6] Marsh Fritillary Butterfly – the only insect Annex II listed species, categorised as inadequate status in Department of Culture Heritage and Gaeltacht The Status of EU Protected Habitats and Species in Ireland, 2019.

echolocation calls, under recording, failure of static detector CG8 during summer survey period).

11.8.4 Ecological resource evaluation is outlined in terms of assessment of effect significance, effect type and magnitude, cumulative effects and residual effect following mitigation.

11.8.5 The baseline environment is described in detail. There are five SACs and two SPAs within the 15km of the proposed Coumnagappul wind farm.

- Comeragh Mountains SAC,(.76km to nearest turbine 3.56km GCR 2.67 TDR accommodation works),
- Nier Valley Woodlands SAC (2.9km to nearest turbine, 3.81km to GCR, 500m TDR accommodation works),
- Lower River Suir SAC (4.29km nearest turbine, 4.24km GCR, A section of internal access road is within upper reaches of the Nier-020 sub catchment which flows to the SAC),
- Blackwater River Cork Waterford SAC (5.48km to closest turbine, 1.6km to GCR, 1.48km to TDR accommodation works),
- Glendine Wood SAC (11.06km to nearest turbine, 4.37km to GCR and 132m to TDR accommodation works,
- Dungarvan Harbour SPA (12,74km to closest turbine, 0.67km to GCR and 360m to TDR accommodation works). Dungarvan Harbour (Ramsar 839) is located 12.74km south.
- Mid Waterford Cost SPA (15.17km to closest turbine, 9.83 GCR 3.35TDR accommodation works).

Regarding National Sites within the potential zone of influence, these include Comeragh Mountains pNHA, Nier Valley Woodlands pNHA, Toor Wood pNHA,

Glenboy Wood pNHA, Dungarvan Harbour pNHA, Kilsheelin Lake pNHA, Stradbally Woods pNHA, and Marlfield Lake pNHA.

11.8.6 Regarding rare and protected flora the site is within ordnance survey national grid 10km squares S20 and S21. These 10km grid squares were searched for records of plant species through the National Biodiversity Data Centre (NBDC) website. Data on rare/protected species recorded on 10km grid squares within a 5km radius of the site was obtained from NPWS (S10, S11, S20 S21 s30 &S31). The 1km grid squares overlapping the GCR were also searched and there are no records of rare flora within these grid squares. Table 9.8 provides details of rare and protected plant species found within 10km grid squares S10, S11, S20, S21, S30 and S31. Records for five species are within S20 and S21 which overlap the proposed site and habitats suitable for 5 species occur within the boundary. No rare or protected flora were found within the site the GCR or TDR during surveys. There are no Flora Protection Order (FPO) bryophyte sites at the site. Regarding invasive species none were recorded within the windfarm site or turbine delivery route, two schedule III listed species were recorded along the grid connection route but outside the works area.

11.8.7 A mixture of habitat types occur within the windfarm site, wet heath HH3 habitats composed of predominantly grasses and sedges forming a large portion. Dense Bracken HD1 and Dry siliceous heath HH1 are also present on the slopes. Agricultural land, comprising improved agricultural grassland GA1 Scrub WS1 and Wet grassland GS4 dominates the lowlands. Conifer plantation dominates the western side of the site. An eroding upland river FW1 flows through the site, Hedgerows WL1, Treelines WL2 and Drainage Ditches FD4 onsite with slopes being open and field boundaries largely restricted to lowland fields. Other habitats present include mixed broadleaved woodland WD1, conifer plantations WD 4 and buildings and artificial surfaces BL3. A habitat map is provided at Fig 9.5 Volume IV. In terms of direct habitat loss turbine locations T02 and T05 are within wetland grassland habitat, assessed as locally important higher value. T06, T07, T08 and T10 are located within dry siliceous heath habitat, which is assessed as locally important lower value. Turbine locations T01, T04 and T12 are within wet heath habitat

assessed as higher value locally important (but degrading to lower value locally important in areas of burning). Turbine location T11 is within habitat dominated by bracken and assessed as locally important higher value.

11.8.8 The grid connection originates within the windfarm site and traverses plantation forestry before exiting the site to join and unnamed local road. Walkover survey found no flora listed on FPO or as threatened on the Irish Red list. The dominant habitat along the roads is buildings and artificial surfaces BL3 represented by road surfaces, however road verges contain dry meadows and grass verges GS2 which would be traversed by grid connection. Other habitats including Hedgerows WL1 and Treelines WL2. Improved agricultural grassland GA1 amenity grassland GA2 wet grassland GS4 conifer plantation WD4 Scrub WS1 arable lands BC1, Tilled lands BC3, Earth banks BL2 and buildings and artificial surfaces BL3. The GCR intersects upland rivers FW1 at two points (Ballynaguilkee Lower and an unnamed tributary of the Skeheens Stream) and Lowland Rivers FW2 at one point (Colligan River).

11.8.9 Regarding Turbine Delivery Route TDR no flora listed on the flora protection order (FPO) or listed as threatened on the Irish Red List were recorded during site walkovers.

11.8.10 Regarding Terrestrial mammal species eight protected mammal species recorded within the 10km grid square for the main windfarm site namely Badger, Pygmy shrew, Red squirrel, Otter, Irish Hare, Irish Stoat, Pine Marten and hedgehog. White fallow deer and sika deer have been recorded within the 10km grid squares for the main windfarm site and are protected under the wildlife acts, they are also listed as invasive species. Red Fox were also recorded in grid squares R41 and R51. Badger and otter have been recorded within a 1km grid square overlapping the main windfarm site. The closest otter record is along the Colligan River c185m downstream and south of the main windfarm. Seven protected mammals species were recorded within 1km grid squares overlapping grid connection namely badger, pygmy shrew, red squirrel, otter, Irish hare, pine marten and hedgehog.

11.8.11 Eleven species of invasive mammal recorded within the 10km grid squares overlapping the main windfarm site, namely American mink, bank vole, grey squirrel, European rabbit, brown rat, fallow deer, feral ferret, great white-toothed shrew, sikka deer and wild boar. Seven invasive mammal species were noted within 1km grid squares overlapping grid connection namely bank vole, grey squirrel, European rabbit, brown rat, fallow deer, greater white toothed shrew and Siberian chipmunk.

11.8.12 A total of three terrestrial (non-volant) mammals were identified within the study area during surveys namely red fox, wood mouse and fallow deer (invasive species). An otter spraint was observed in the Finisk river circa 2.3km downstream of the GCR crossing point. Otter are likely to use the Colligan river that runs through the centre of the site for foraging and commuting and have been recorded downstream.

11.8.13 Regarding bats three Bat Conservation Ireland (BCI) records indicate three known bat roosts within 10km namely soprano pipistrelle recorded roosting 5.4km northwest, brown long eared bat roosting 5.6 km to the southeast and daubenton's bat 8.3km east. Six of the known species of bat have been recorded within 10km. There are no known records of lesser horseshoe roosts within a 2.5km buffer. The Bat Landscape Association Model[7] suggests the windfarm site is of low to moderate suitability for bats. The site and environs are of moderate suitability for common pipistrelle, soprano pipistrelle and leisler's bat, low to moderate suitability for daubentons bat and natterers bat and low suitability for whiskered bat, nathusius pipistrelle and lesser horseshoe bat. Three bat activity surveys carried out in 2020 are presented in table 9-15.

11.8.14 Roost surveys found that no trees within the site or within 300m were confirmed as having bat roosts and no trees of moderate or high potential. Agricultural buildings to the southwest of the site (located in excess of 500m from the nearest turbine) are

[7] (Lundy et al 2011). Landscape Conservation for Irish bats and species specific roosting coharacteristics. Bat conservation Ireland.

considered the most likely roost location. Static detector surveys detected eight species of bats over the three survey periods. The most commonly recorded was common pipistrelle followed by leisler's bat with lower levels of activity of soprano pipistrelle, brown long eared bat, daubenton's bat, nathusius pipistrelle, natterer's bat and whiskered bat. Brown long eared bat is present on site but the species is quiet and sometimes hunts without echolocating therefore it may be under-recorded by static detectors. Ecobat analysis show the site to represent varying bat activity categories from low to high.

11.8.15 Regarding aquatic ecology the windfarm site is in the Colligan-Mahon (all turbines) and Suir catchment (section of access track). The main site is drained by the River Colligan and its tributaries which enter Dungarvan Harbour. The portion within the Suir catchment is drained by the Nire River which joins the Suir which enters Waterford Harbour. The GCR is within the Colligan Mahon catchment and also traverses the Blackwater (Munster) catchment. The TDR is located within the Colligan Mahon and Suir catchments. Aquatic desk top surveys indicate the catchments support salmonid species, lamprey species and European eel. There are no known records of freshwater pearl mussel and white clawed crayfish in the Colligan, Nier or Finisk rivers. Otter records were available for the Colligan catchment at multiple locations including a record circa 0.5km south of the windfarm site.

11.8.16 Fish surveys in the study area observed seven species of fish in total namely lamprey, European eel, brown trout, sea trout, Atlantic salmon, three spined stickleback and flounder. Assessment of aquatic ecology surveys concluded that freshwater pearl mussel are absent from Colligan catchment, Nier catchment and Finisk catchment.

11.8.17 Regarding biological water quality good water quality with Q4 was found at all four sites assessed on the main channel of the Colligan. The Coumduane stream to which the southern part of the site drains is also Q4. The upper stretch of the Lalisheen stream to which some of the western part of the site drains was assessed

as being unsatisfactory moderate ecological condition (Q3-4). A small tributary of this stream could be impacted by the cable route at Bryan's crossroads. The Lalisheen stream was assigned Q4 good condition while the Knockanopwer stream was found to be in unsatisfactory moderate ecological condition (Q3-4). Impacts by livestock access to the Glounmore Stream have resulted in moderate quality (Q304) and siltation. The water quality in the Nier main channel is good (Q4) The tributaries in the Finisk have too little flow to apply the Q scheme methodology. Biological water quality was assessed at one site on the main channel of the Finish and assigned Q3-4 indicating moderate ecological condition.

11.8.18 No aquatic flora communities with Annex 1 habitat "watercourses of plain to montane levels with the Ranunculion fluitantis and callitricho batrachion vegetation were present at any of the survey sites. No invasive species were found within the windfarm site. Two invasive plant species (Himalayan balsam and Japanese knotweed) were noted in the lower reaches of the Colligan and in proximity to Kildangan Bridge (N72) where a cable route crossing is proposed. Regarding amphibians and reptiles common frog and common lizard were recorded within the 10km grid squares overlapping the site. The endangered wall butterfly has been recorded within grid square S21 while vulnerable marsh fritillary and vulnerable dark green fritillary have been recorded within grid square S21 and S20. The near threatened small heath was also recorded within S20 and S21.

11.8.19 Tables 9-25 habitats, 9.26 fauna (excluding avifauna) and 9-27 aquatic ecology sets out the key ecological receptors relating to habitats, fauna and aquatic ecological resources and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts of National Roads Scheme (NRA 2009) with rationale outlining the basis for their inclusion or exclusion as key receptor. The EIAR includes an appraisal of the likely significant effects, either alone or in combination with other plans or projects on European sites and sites of national importance. The key findings of the AA screening and NIS are incorporated into the EIAR.

11.8.20 In terms of predicting potential impacts on biodiversity, there are no direct impacts to any designated sites. During the construction phase the potential for likely significant effects to aquatic conservation interests for the Dungarvan Harbour SPA, Lower River Suir SAC, Blackwater River Cork Waterford SAC and Mid Waterford Coast SPA from emissions to water (sediment/hydrocarbons) at construction stage cannot be ruled out and this is assessed in the NIS. Regarding Dungarvan pNHA (00663) located 12.79km south of the closest turbine and within the Colligan sub catchment. Its features of interest for the site include wetlands and waterbirds and potential hydrological effects, alteration of plant habitat and food availability for waterbirds via hydrological changes are noted. Due to the distance outside foraging range no other indirect effects are predicted. Hydrological effects with regard to grid connection are predicted. No effects are predicted for pNHAs or NHAs with regard to TDR.

11.8.21 Table 9.28 sets out the habitat loss within the main windfarm site. In terms of direct habitat loss with regard to key ecological receptors the proposal will result in the loss of 0.1ha of dense bracken/scrub mosaic (HD1/WS1), 7.25ha of Dry siliceous heath (HH1) and 5.94ha of wet heath HH3. The total area of habitat loss is 25.57ha. It is stated within the EIAR that there is no loss of Annex 1 linked wet heath with the heath onsite heavily burned and grazed. Woodland loss applies to conifer plantation (5.4ha). Approximately 150m of stone wall/hedgerows will be lost within the development footprint of the site with an additional 100m at TDR Pol 26. The upper reaches of the Skeehans river are intersected by an access track at the entrance to the site. The river at this point flows over a concrete ford. It is proposed to remove the concrete on the river bed and replace with gravels / boulders and install an open bottomed box culvert. This results in small scale localised enhancement of fisheries value. Upland eroding river represented by the River Colligan is intersected by a section of proposed access track, however, in-stream habitat loss will not occur at this location as the bridge will not directly affect the stream bed. The crossing at this location will be a clear span bridge, the footings of which will be setback from the riverbank. No impact arises therefore in terms of loss of aquatic /riparian habitat.

11.8.22 Regarding indirect impact the deposition of dust could affect adjacent terrestrial habitats by inhibiting plant growth and contributing to sediment load in watercourses. Regarding dewatering of excavations for turbine base construction this could result in the drying out of surrounding habitats including wet heath and wet grassland. Regarding indirect impacts on habitats from grid connection the potential spread of invasive species is noted. The proposed crossing methodology for unnamed tributary of the Skeheens Stream is horizontal directional drilling (HDD) which will avoid instream works and avoid direct impacts on upland / eroding rivers. Habitat loss associated with TDR is limited to laying of temporary hardcore along road verges and grassed areas, trimming of vegetation, hedgerow cutting and tree trimming.

11.8.23 Regarding mammals no mammal resting or breeding places were recorded within the development boundary or adjacent lands. An otter spraint was observed in the Finisk river c 2.3km downstream of the grid connection route crossing point. The relatively small scale loss of habitat at the wind farm will not result in a significant negative impact on the distribution of local protected mammal fauna including pygmy shrew, Irish hare, Irish stoat and hedgehog. No effects on mammals (excluding bats) are envisaged as a result of habitat loss along GCR or TDR.

11.8.24 Indirect impacts during the construction phase would include temporary disturbance. Short term significant effect on badger is noted at a local scale. Indirect effect on otter through transport of pollutants and or contaminants downstream which would affect aquatic animals such as salmonids on which otter depend. Regarding bats, construction phase impacts including disturbance to roost site, loss or fragmentation of habitat, disturbance to foraging bats and lighting impact are noted. Direct effects on roosting bats are highly unlikely within conifer habitat type. No direct effect to roosting bats arising from GCR and TDR.

11.8.25 Regarding indirect impacts on bats disturbance of roosting or foraging bats through lighting impacts is considered. It is noted that the species using the site, leisler's bat, soprano pipistrelle and common pipistrelle, are less sensitive to light pollution. The removal of scrub along the Colligan stream for watercourse crossing will result in

reduction in the quality of foraging habitat. Regarding grid connection and turbine delivery route there is potential disturbance from works.

11.8.26 Regarding aquatic ecology the potential for increase in suspended solids loading of watercourses and water quality and surface water quality changes are noted. Suspended solids even in small quantities can have serious effect on the spawning sites of salmonids. Engineering works in the vicinity of streams and at stream crossings can also directly impact on physical habitat for example nursery areas for fisheries. Obstruction to upstream movement of fish particularly salmon or trout can arise through construction of culverts. Increased erosion, loss of sediment and increased nutrient release gives rise to potential eutrophication lowering the capacity of streams to support fish and invertebrate fauna. Potential direct construction phase effects on aquatic ecology in the absence of mitigation are assessed as significant, short term reversible in the local context.

11.8.27 Indirect effects on receiving watercourses and habitats arising from accidental release of silt laden runoff, accidental spillage of cement or hydrocarbons affecting water quality are noted. Waste from on site toilets and wash facilities could negatively impact negatively on aquatic ecology. Engineering works causing run off of sediments or increase in level of nutrients also would affect water quality. Potential for machinery to result as a vector for introducing or dispersing non native species is assessed as being significant negative short term and in the local context.

11.8.28 GCR and TDR potential for direct impacts on aquatic ecology in the absence of mitigation are assessed as being significant negative short term and reversible in the local context. Indirect impacts are assessed as being slight negative short term and in the local contexts.

11.8.29 Regarding other species common frog and lizard may be directly affected through habitat loss during construction though this is not likely given the presence of similar habitats not affected by the proposed development. Unmitigated impact on water

quality could be significant. Some invertebrate habitat will be directly lost through land take across various habitats.

11.8.30 Regarding the operational phase it is asserted that the proposed development at operational stage, individually or in combination with other plans or projects would not be likely to have a significant effect on any European site. With regard to Dungarvan pNHA waterbirds are the key consideration in terms of potential effects on during operation phase. Due to low levels of these species recorded within the study area over the two years of surveys and the site being outside the core range of the SCI species, any operational barrier effect to migrating birds will be imperceptible and not significant. No impacts arise from TDR during operational phase. Regarding habitats and flora the maintenance of bat buffers will require halting succession to scrub and woodland instead maintaining short sward grassland and heath habitats. This is in keeping with current land use whereby these areas are subject to sheep grazing. Regarding mammals the level of maintenance associated with operational phase will be infrequent and disturbance minimal. A long term imperceptible reversible impact is noted.

11.8.31 Regarding bat species potential impact operational impacts considered arising from collision mortality, barotrauma and other injuries, loss or damage to commuting and foraging habitat, loss of or damage to roosts and displacement of individuals or populations. Assessment is based on Scottish Natural Heritage (SNH) 2021 guidance for conducting risk assessment for bats species occurring on windfarms The potential for aviation obstruction lighting to attract bats is also considered. Impacts on bats prior to mitigation are predicted to be long term significant impacts on a local level and reversible.

11.8.32Regarding aquatic ecology operational risks are assessed as being imperceptible negative temporary and in the local context. Effects during operational phase from GCR and TDR on aquatic ecology are unlikely.

11.8.33 Regarding the decommissioning phase no direct or indirect effects on pNHAs or NHAs within the zone of influence. Dungarvan Harbour SPA is assessed as part of Natura Impact Statement. Impacts are similar to those arising during the construction phase although the magnitude of effect of decommissioning is reduced.

11.8.34 Regarding cumulative impacts on biodiversity, consideration is given to existing and permitted / proposed windfarms within 20km. If Coumnagappul windfarm and the granted Knocknamona windfarm 17.6km to the west of the site are constructed at the same time, there could be potential for cumulative effects on the aquatic receiving environment of Dungarvan Harbour. No cumulative impacts with regard to large scale housing developments within 20km. Solar developments within 20km are all located within a different sub catchment and no cumulative hydrological effects area envisaged. With regard to farming and forestry the main potential impact would be an increase in nutrient levels of local watercourses.

11.8.35 The cumulative assessment in the NIS identified potential for cumulative impact on the Lower River Suir SAC, Blackwater River Cork SAC and Dungarvan Harbour SPA/pNHA. Cumulative impacts on habitats and flora with regard to other sources of landtake, potential spread of invasive species, mammal breeding or resting sites. Cumulative impact on bats with regard to displacement, abandonment of young and mortality. Regarding aquatic ecology potential cumulative pressures arise where windfarm construction and agricultural activities and drainage maintenance, forestry activities works occur at the same time. The Knockanamona windfarm 17.2km west is also in the River Colligan catchment but its connected river the Brickey River and enters Dungarvan at a different point to the Colligan. Cumulative effects on aquatic ecology in the absence of mitigation would be limited to Dungarvan Harbour. The proposed Dyrick Hill windfarm is located in a different catchment, Blackwater (Munster) catchment therefore cumulative impacts on aquatic ecology are considered negligible.

11.8.36 Regarding mitigation measures for biodiversity key mitigation by avoidance and design measures include limitation of hard standing area, avoidance of direct

impacts on designated sites, undergrounding of cables, grid connections selected to minimise land take of potentially sensitive habitats, provision of adequate buffers, and avoidance if instream works. A project ecologist /clerk of works will be employed during the construction phase to ensure that all mitigation measures are implemented. Works will be restricted to the immediate footprint of the development. Hedgerows removed / disturbed as part of TDR to be reinstated. Measures to halt the spread of non -species will be implemented. A preconstruction mammal survey will be carried out to confirm survey findings in the EIAR. The project ecologist will survey areas of vegetation removal, tree felling prior to and during works as required to reconfirm finding. Where wildlife resting places newly recorded the planning authority will be updated and consulted and relevant guidelines will be followed.

11.8.37 Construction operations will occur predominantly during daylight hours. Mitigation measures with regard to badger, pine marten and red squirrel are outlined. With regard to bats a buffer zone around turbines has been provided for in the design. Other mitigation measures include supervision of vegetation clearance, habitat retention and clearance, lighting restrictions. Mitigation measures with regard to aquatic ecology are outlined within the CEMP. Regarding other species, in the event of construction during breeding season of common frog (January – midsummer) a pre-construction amphibian survey will be carried out and translocation under licence will be carried out where necessary.

11.8.38 Mitigation during operation will include measures to ensure no contamination of water bodies due to siltation or contaminated runoff, monitoring of invasive species and treatment where required. Feathering of blades during low wind speeds and increased cut in speed (during bat activity season of where weather conditions are optimal for bat) is proposed to mitigate impact in respect of bat collision. A focused curtailment regime is proposed from year four of operation. This includes the use of the SCADA operating system or equivalent to only pause/feather the blades below a specified wind speed and above a specified temperature within specified time periods. Post construction surveys will be undertaken for the first three years to confirm if blanket curtailment restrictions can be amended in line with post

construction activity levels. Monitoring curtailment is proposed. Flashing red aviation obstruction lights are proposed on perimeter turbines subject to IAA approval. Tree free buffer zones around turbines will be managed and maintained during the operational lifetime of the development. Success of the implemented mitigation measures for bats will be monitored for a period of no less than three years post construction. Bird and bat mortality monitoring programme will be implemented in line with methodology outlined following best practice.

11.8.39 Regarding aquatic ecology the operational windfarm will have a negligible effect on aquatic ecological interests. Maintenance will not have any significant impacts on the hydrological regime. Localised water quality impacts as a result of construction phase will be reduced by undertaking sensitive elements outside the salmonid closed season and protection of water quality following implementation of water management measures.

11.8.40 Mitigation during decommissioning will be similar to those during construction phase but will be of reduced magnitude. Enhancement measures are proposed to increase the biodiversity value of the site. (Biodiversity Enhancement and Management Plan) Appendix 9.1 Volume III.

11.8.41 Regarding vulnerability to major accidents or disasters sources of pollution on site during construction phase are limited. Limited storage of hydrocarbons, chemicals and wastes is proposed. Release of sediment and pollutants into watercourses which could negatively impact on aquatic habitats and species. Potential vulnerabilities relevant to the project include flooding fire, major incidents involving dangerous substances, catastrophic events and landslides. Potential susceptibility to natural disaster is considered negligible. Potential for related effects on biodiversity and the environment arising from fire of pollution is considered negligible.

11.8.42 Regarding residual ecological Impacts, there will be a permanent loss of habitat due to the footprint of the development. Mitigation measures in relation to hydrology and

water quality and use of HDD at grid connection watercourse crossing will ensure no significant loss of aquatic habitat of higher value. With the application of mitigation measures as outlined the impacts of the proposed development grid connection route and turbine delivery route will be minimised for other habitats to an acceptable level during construction, operation and decommissioning resulting in no significant residual effects. Regarding mammals measures to protect red squirrel and pine marten include restricting felling operations to outside their breeding periods and pre-felling surveys where this cannot be facilitated. Preclearance vegetation checks to protect badger, Irish stoat, Irish hare, pygmy shrew and hedgehog will be carried out by an ecologist. Permanent loss of grassland and plantation woodland habitats which could be used by foraging and breeding mammals for shelter/breeding will occur. The implementation of mitigation will reduce residual impacts during construction operation and decommissioning phases to long term imperceptible negative reversible impacts in the local context. Habitats used by protected mammal species within the development footprint and felling areas represent a small amount of the total available within the study area and in the wider context.

11.8.43 Regarding Bats the overall suitability of the site is deemed to be of low to moderate suitability for bats. The site and environs are of moderate suitability for common pipistrelle, soprano pipistrelle and leisler's bat, low to moderate suitability for daubenton's bat and Natterer's bat, and of low suitability for whiskered bat, nathusius pipistrelle and lesser horseshoe bat being outside the distribution range for lesser horseshoe bat. A total of eight bat species were recorded during the 2020-2021 surveys showing a high level of bat activity within the site. The turbines have been sited within areas of expected lower activity. Mitigation will reduce risk of fatality from collision and/or barotrauma events to foraging and /or commuting high risk species such as pipistrelle and leisler's. The residual impact of the proposed development, grid connection route and turbine delivery route on local bat populations with implemented mitigation measures is considered to be a not significant -slight residual negative reversible impact in the local context during construction operation and decommissioning with the favourable conservation status of bat species being unaffected.

11.8.44 Regarding aquatic ecology the watercourses on site are small streams with sensitive ecological receptors notably salmonid species. The Grid Connection route traverses sensitive ecological areas near salmonid and lamprey nursery and spawning habitat. Effects will be reduced to an imperceptible negative effect during construction, operation and decommissioning phases with the mitigation measures regarding hydrology and water quality siltation and runoff of suspended solids. The proposed development will not cause any WFD waterbody to deteriorate and will not prevent or jeopardise any WFD waterbody meeting the biological and chemical characteristics for good status under the WFD. Regarding other species residual effects are assessed as not significant reversible residual impacts in the local context. With the implementation of detailed mitigation measures there will be no significant residual impacts for the site GCR and TDR on biodiversity.

Assessment of biodiversity chapter

11.8.45 I have examined analysed and evaluated chapter 9 of the EIAR Biodiversity. I consider that the potential impacts of the proposed development on the biodiversity of the site have been comprehensively assessed. Methods of appraisal are set out based on detailed botanical surveys, mammal surveys, bat and otter survey and aquatic ecology surveys. The surveys and assessments have been carried out in accordance with best practice and by competent experts. I consider that the nature and scope of the surveys are generally robust, proportionate and reasonable. I consider that the impact of the development on a number of receiving habitats and species on the site have been reduced by avoidance and design and where identified effected mitigation measures are incorporated.

11.8.46 I consider however that a number of key impacts in respect of likely effects on biodiversity, as a consequence of the development have been understated. In terms of direct habitat loss, the proposed development involves the permanent destruction of 7.25ha of dry siliceous heath and 5.94ha of wet heath. It is outlined within the EIS that the heath habitat on site is in poor condition due to burning and grazing such that it is therefore of limited biodiversity value. This is contradicted by the DHLGH and a number of observers.

11.8.47 The submission from the DHLGH notes that whilst these habitats have undergone damage, they remain habitat directive listed Annex I habitats of conservation value. The DHLGH notes that heathland habitats often occur in mosaic with acid grassland and management influences the extent of each. It is noted that previous surveys and mapping of the area by the NPWS recorded location of T1 T2 T3 and T12 as Annex I heath while T11, T09. T8, T7 and T6 (are in an area not covered by the survey) in the Department's view contain significant areas of Annex I habitat in mosaic with other related upland habitats. The Department acknowledges the degradation in quality of habitat due to grazing regime and inappropriate burning however it is of the view that it remains Annex I heath that could be restored to better condition again through appropriate management. The link to Annex I habitats within the Comeragh Mountains SAC is also noted as is the potential for 4.49 ha of wet grassland and 1.73ha of bracken within the site, subject to appropriate management, to be restored to conservation value habitat.

11.8.48 The DHLGH noted that Relevé 1 recorded one sample of Annex I quality (Annex I Habitat – North Atlantic wet heaths with Erica tetralix (4010). This relevé was located on the slope to the west of the site between conifer forestry and the hilltop near T4. I note that the DHLGH suggest that in accordance with relevant guidelines for national survey and conservation assessment of upland vegetation and habitats in Ireland (Perrin et al 2014[8]) at least 11 additional relevé surveys should have been carried out. Further limitations in the submitted vegetation assessment samples are noted including that relevé surveys 3 and 9 were not surveyed due to burning at time of survey. (Relevé surveys 12, 17 18 and 20 also were not surveyed due to steep access which contradicts the statement within the EIAR that there were no limitations in the scope scale or context of the assessment). The DHLGH also takes issue with conclusions drawn with regard to quality of heath habitat based on absence of Erica tetralix within sample points and in relation to percentage of bare ground or presence of negative indicator species without seeing the context of the surrounding habitat.

[8] Perrin PM, Barron SJ, Roche JR, O Hanrahan B (2014) Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland, Version 2.0 Irish Wildlife Manuals No 79. National Parks and Wildlife Service, Department of Arts Heritage and the Gaeltacht, Dublin.

11.8.49 Whilst the applicant in response to the submission of the DHLGH asserted that the Department's mapping is outdated and maintained that relevé surveys indicate a paucity of healthy heath habitat in the locality to meet the condition criteria set out in Perrin for Anex I habitats of favourable status. The applicant further notes that the conservation objectives supporting document for the Comeragh Mountains SAC recognises that the structure and function of heath habitat within the SAC is unfavourable-bad due to "inadequate cover of desirable species including cross leaved heath (Erica tetralix), ericoid species and mosses and lickens, and inappropriate burning." The applicant further sets out the arguments regarding the distinction in the level of protection provided to Annex I listed habitats occurring inside and outside of SAC boundaries and the concept of 'shadow protection.' Furthermore, the applicant requests that the Board take account of the potential benefits that the proposed development will bring in terms of restoration of Annex I habitat as provided in the biodiversity enhancement and management plan (BEMP) as well as climate adaption effort.

11.8.50 The alteration / loss of this upland area which provides habitats of significance to a number of species of birds of high conservation value including hen harrier and merlin, golden eagle and white tailed sea eagle is also raised in the submission of the DHLGH and the context of cumulative fragmentation of ecologically valuable habitats is noted.

11.8.51 While mitigation of habitat loss is proposed via restoration habitat, I consider that the permanent removal of existing quality habitat has not been justified. The Planning and Development Act, 2000, as amended, in section 171A(b), requires the Board to consider the likely direct and indirect effects of developments on biodiversity, with particular attention to the species and habitats protected under the Habitats and Birds Directive. Further, the under Article 27(4)(b) of the European Communities (Birds and Natural Habitats) Regulations 2011 to 2021(transposing the Habitats and Birds Directives into national legislation), requires public authorities to take steps to avoid pollution or deterioration of habitats that occur outside of protected areas.

Article 27(4) of the EC Birds and Natural Habitats Regulations requires:

"4. In respect of the protection areas referred to in paragraphs 1 and 2, Member States shall take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds, in so far as these would be significant having regard to the objectives of this Article. Outside these protection areas, Member States shall also strive to avoid pollution or deterioration of habitats."

11.8.52 In this instance, the loss of Annex I habitats, while not within a protected SAC/SPA, directly contradicts this requirement. The Annex I habitat proposed for removal supports a variety of Annex I birds' species, operating as it does as part of a wider landscape of ecological value. I note the Department's comments highlighting the significance of scale and connected habitats in terms of conserving these species and they can range over large undisturbed areas and alternate between areas of suitable habitat which for various reasons may become temporarily unsuitable but will at a later stage be used again.

11.8.53 While the applicant argues that improvements to the existing habitat will arise and deterioration in the quality of heath habitats due to inappropriate management, burning and overgrazing will cease, I do not consider that this constitutes a justification for habitat destruction. Having regard to the quality of the habitat on site question, its importance nationally and internationally, its role in supporting very high conservation value bird species under threat, as well as high, medium and low value species, and having regard to the submission of the DHLGH, I am not satisfied that the Habitat Management Plan will sufficiently address the direct and residual impacts of this development. I recommend that permission be refused for the development given its impact on an Annex I habitat.

11.8.54 I have considered all of the written submissions made in relation to biodiversity and the relevant contents of the file including the EIAR. I am not satisfied that the potential for significant adverse impacts on the Annex I Dry Heath and wet heath habitat can be avoided, managed and/or mitigated by measures that form part of the

proposed scheme, therefore I consider that the proposed development would have unacceptable direct impacts on biodiversity.

11.9 Ornithology

11.9.1 Chapter 10 of the EIAR relates to ornithology and is supported by a number of appendices in Volume 3 including appendix 10.1 Ornithology Report and 10.2 Collision Risk Model. The methodology is outlined including desktop survey, consultations and site survey. In terms of limitations, it is acknowledged that the timing of the red grouse surveys undertaken in 2020 and 2022 resulted in the start of the red grouse breeding season (April to early May) being missed. A precautionary approach is therefore advised in relation to 2020 and 2022 survey findings.

11.9.2 In terms of identifying target species field surveys comprised vantage point (VP) watches and targeted distribution and abundance surveys. Target species were selected based on SNH guidance (SNH 2017) including Annex I listed species, red listed birds of conservation concern and regularly occurring migratory species, those at risk from disturbance and displacement. VP watches undertaken over 3.5 years at five VPs (Winter 19/20, winter 20/21, winter 21/22, summer 2019. Summer 2020, summer 2021 and summer 2022.) Transect surveys, hinterland surveys (Summer 2020), nocturnal surveys – for woodcock, nightjar and owl (summer 2020), Merlin, red grouse and golden plover surveys (summer 2020). Avifauna resources were evaluated as to whether they constitute key receptors following NRA guidance. In terms of identifying the zone of influence (ZoI) for the site an initial search area of 15km was selected on the basis of guidance (DEHLG 2020), in addition to any sites further afield with potential ecological links. The ZoI for GCR and TDR is defined by a 500m buffer around the TDR Nodes and GCR alignment and sites with hydrological or ecological links.

11.9.3 In relation to European sites there are two SPAs within the potential ZoI namely Dungarvan Harbour SPA and Mid Waterford Coast SPA. Based on information provided in SNH 2016 on the core foraging ranges for the SCIs (Table 3 of Appendix 10.1), connectivity between the SPA sites and the proposed development is unlikely. However, the maximum foraging range for golden plover and peregrine SCIs of Dungarvan Harbour SPA and mid Waterford coast SPA overlaps the site. An Appropriate Assessment Screening report and natura impact statement assesses the likely significant effects of the proposed development either alone or in combination with other plans or projects on European sites (SACs and SPAs). Refer to Appropriate Assessment below.

11.9.4 Regarding sites of national importance there are three pNHAs where birds are a feature of interest within the potential zone of influence of the proposed development. Three is one Ramsar site within the potential ZoI namely Dungarvan Harbour. From desktop study of NPWS and NBDC records a combined total of 105 species, regardless of conservation status or date, were recorded in the 10km grid squares S20 and S21 which overlaps the study area (listed in table 714). Of these species' chough, kingfisher, nightjar, red kite, spotted crake, teal and yellowhammer are considered to be historical records as they have not been documented in the grid square in the last 15 years. A total of 16 that are on the current Birds of Conservation Concern in Ireland (BoCCI) red list (curlew, golden plover, grey wagtail, kestrel, lapwing, meadow pipit, nightjar, red grouse, red kite, redwing, ring ouzel, snipe, stock pigeon, swift, woodcock and yellowhammer) and 22 are on the BoCCI amber list (black headed gull, chough, cormorant, goldcrest, greenfinch, hen harrier, herring gull, house martin, house sparrow, kingfisher, linnet, mallard, merlin, sand martin, skylark, spotted crake, spotted flycatcher, starling, swallow, teal, wheatear and willow warbler). Six of the species (golden plover, hen harrier, little egret, merlin, nightjar and peregrine are further listed on Annex 1 of the EU Birds Directive. Four are species which are not rare (Red or Amber listed) or protected under Annex I (habitats directive) but have been included as they are indicator /keystone species and/or may be sensitive to wind farm development; namely buzzard, grey heron, moorhen and sparrowhawk. Pheasant is the only invasive species recorded in the 10km grid square.

11.9.5 During the 2019/2020 season, eight target species were recorded within the flight activity study area. Of these three species were red listed (kestrel, golden plover, snipe) two species were amber listed (merlin, lesser black backed gull) and three were green listed (peregrine falcon, buzzard, sparrowhawk). Merlin, peregrine falcon and golden plover are also listed under Annex I of the EU Birds Directive. During the winter 2020/2021 season, eight target species were recorded within the flight survey areas. Of these three species were red listed (kestrel, golden plover, snipe) two species were amber listed (hen harrier, merlin) and three were green listed (peregrine falcon, buzzard, sparrowhawk). During Winter 2021/2022 season, eight target species were recorded within the flight activity area. Of these three red listed (kestrel golden plover and snipe), two amber listed (hen harrier, merlin) and three were green listed (peregrine falcon, buzzard, sparrowhawk).

11.9.6 During the summer 2019 season, nine target species were recorded within the flight activity survey area. Two red listed(kestrel, snipe), three amber listed (hen harrier, merlin, lesser black backed gull) and four green listed (buzzard, sparrowhawk, grey heron, long-eared owl). During summer 2020, 12 target species were recorded. Three red listed (kestrel, golden plover, snipe) five amber listed (hen harrier, merlin, herring gull, lesser black backed gull, ringed plover), and four green listed (peregrine falcon, buzzard, sparrowhawk, great black backed gull). During the summer 2021 season, eight target species were recorded. Three red listed (kestrel snipe red grouse), four amber listed (hen harrier, herring gull, lesser black backed gull, mallard), and one green-listed (buzzard). During summer 2022 four target species were recorded within the flight activity survey area. Two red listed (kestrel, golden plover) one amber listed (hen harrier) and one green listed (buzzard).

11.9.7 Sixteen non target species were recorded during VP surveys. Four red listed (grey wagtail, meadow pipit, stock dove, swift) and 12 amber listed (goldcrest, house martin, house sparrow, linnet, sand martin, skylark, spotted flycatcher, starling, swallow, tree sparrow, wheatear and willow warbler).

11.9.8 During hinterland surveys conducted during summer 2020, birds of prey were active in the site while there were no large assemblages of waders recorded. During the first hinterland survey buzzard were recorded in flight three times and kestrel once. During the second hinterland survey sparrowhawk was recorded in flight once and buzzard twice.

11.9.9 Winter and Breeding surveys involved transect surveys for all species over three winters and three summers and captured the baseline of avian species using the site as well as their abundance and seasonal visitors of the winter (i.e. redwing) and summer months (i.e. cuckoo and swallow). Over the entire survey period a total of 56 bird species were recoded. Of the 56 species two are Annex I listed (hen harrier and peregrine falcon) five are red listed (grey wagtail, kestrel meadow pipit, redwing and stock dove) and 13 are amber listed (goldcrest, greenfinch, hen harrier, herring gull, house martin, house sparrow, lesser black backed gull, linnet, skylark, starling, swallow, wheatear and willow warbler). The remaining 38 species are green listed.

11.9.10 In nocturnal surveys carried out in summer 2020 no nightjar, woodcock or owls were recorded. On both nights of surveying snipe was observed displaying.

11.9.11 Key receptors for assessment are selected based on NRA guidance (NRA 2009). The overall importance or sensitivity evaluation for each key receptor is taken from guidance such as Percival 2007. Table 10-4 sets out the key receptors selected for assessment. The potential likely significant impact of wind turbines on birds may be considered as possible loss or deterioration of habitats, disturbance or displacement of birds, direct collision with turbines.

The four **‘Very High’ sensitivity** species recorded within the project study area are:

- Golden plover (red-listed, annex I);
- Hen harrier (amber-listed, annex I);
- Merlin (amber-listed, annex I);
- Peregrine (green-listed, annex I);

Birds of 'High Sensitivity'

- Grey wagtail (red-listed);
- Kestrel (red-listed);
- Meadow pipit (red-listed);
- Red grouse (red-listed);
- Redwing (red-listed);
- Snipe (red-listed);
- Stock dove (red-listed);
- Swift (red-listed).

Medium' sensitivity (16 species):

- Goldcrest (amber-listed);
- Greenfinch (amber-listed);
- Herring gull (amber-listed);
- House martin (amber-listed);
- House sparrow (amber-listed);
- Lesser black-backed gull (amber-listed);
- Linnet (amber-listed);
- Mallard (amber-listed);
- Ringed plover (amber listed)
- Sand martin (amber-listed);
- Skylark (amber-listed);
- Spotted flycatcher (amber-listed);
- Starling (amber-listed);
- Swallow (amber-listed);
- Tree Sparrow (amber listed);
- Wheatear (amber-listed);

• Willow warbler (amber-listed).

'Low' sensitivity species

• Buzzard (green-listed);

• Great Black-backed gull (green-listed);

• Sparrowhawk (green-listed)

11.9.12 Regarding the construction phase, likely significant direct and indirect effects arise through the construction of site tracks, turbine foundations and hardstandings, substation compound, temporary site compound and excavation of on site borrow pit and tree felling which will result in habitat damage and loss. The proposal involves long term removal of wet heath (5.94ha), dry siliceous heath (7.25ha), conifer plantation (5.4ha), improved agricultural land (0.11ha), dense bracken 1.73ha, dense bracken scrub mosaic (0.10ha) and exposed siliceous rocks (0.56ha). Additional works along the TDR will result in removal of trees and trimming of branches along the corridor of the route. It is outlined that the loss of habitat due to construction has the potential to affect some passerines in terms of reduced feeding and nesting opportunities. It is not expected that the proposal will cause a reduction in the baseline population of passerines as the area of nesting/foraging habitat lost will be imperceptible to slight. The effect of habitat loss will be a permanent imperceptible to not significant effect in a local context which is reversible. The trimming of vegetation along with removal of scrub or tree felling during the nesting season could result in a localised temporary significant reversible effect to nesting birds.

11.9.13 Table 10-5 summarises the direct effect of habitat loss on key receptor target species without mitigation. With regard to the 'very high' sensitivity species, I note golden plover the overall significance is high, the loss of wintering and or foraging habitat is predicted to be a long term slight effect locally and a long term imperceptible to slight effect at county level. With regard to the 'very high' sensitivity hen harrier the overall significance is high, loss of breeding and or foraging habitat will be a long term slight to moderate effect based on a lack of breeding on site and

low number of sightings (1 in total). With regard to 'very high' sensitivity merlin, the overall significance is high, loss of breeding and or foraging will be a long term slight effect based on low number of sightings and loss of 3.4% of suitable habitat. The 'very high' sensitivity peregrine overall significance low - loss of breeding and or foraging habitat will be a long term imperceptible to slight effect based on lack of suitable breeding habitat and low number of sightings.

11.9.14 Table 10.6 sets out the indirect construction effects on key receptor species. With regard to golden plover the overall significance is very high. Disturbance and or displacement will be a short term significant effect at a local level if works were carried out within the commonage area during the winter period. Outside of this area and period it will result in a short term imperceptible effect. With regard to hen harrier magnitude is low and overall significance medium, disturbance and or displacement will be a short term slight effect. With regard to merlin overall significance is high disturbance and or displacement will be a short term slight to moderate effect. With regard to Peregrine overall significance is low disturbance and or displacement will be a short term slight effect.

11.9.15 With regard to the operational phase, collision risk the primary cause of direct effect. Indirect displacement of birds by the presence of turbines is also a consideration. The collision risk model (Appendix 10.2) presents the results of collision risk modelling based on VP survey data and using Scottish Natural Heritage Collision Risk (SNH 2000). Target species recorded during vp surveys include black-headed gull, brent goose, buzzard, cormorant, golden plover, great black backed gull, green sandpiper, grey heron, hen harrier, herring gull, kestrel, lapwing, lesser black-backed gull, mallard, merlin, osprey, peregrine, red kite, snipe, sparrowhawk, stock dove, swift and teal.

11.9.16 Sixteen species were selected for collision risk modelling: buzzard, golden plover, hen harrier, herring gull, kestrel, lapwing, lesser black-backed gull, mallard, merlin, osprey, peregrine, red kite, snipe, sparrowhawk, stock dove, and swift. These species were selected because they were recorded within the 500m buffers of the proposed turbines (the flight activity survey area) and at rotor swept heights, and are

of conservation concern: i.e., they are red or amber-listed in Birds of Conservation Concern Ireland 2020-2026 (Gilbert et al., 2021), and/or are listed on Annex I of the Birds Directive (2009/147/EC) or green-listed and sensitive to wind farm developments (i.e., buzzard). For all the other species recorded but not included for collision risk modelling, the effective collision risk can be assumed to be zero. Collision risk to resident passerines is not considered likely to be a significant issue as their flight activity is generally well below rotor blade height and the impact of collision risk will be long term imperceptible reversible effect. Potential risk to non-passerine target species is summarised in Table 10-7 and significance of unmitigated effects rated. I note with regard to golden plover the overall significance without mitigation is considered low -long term negligible effect. Hen harrier – a low, long term imperceptible overall significance. With regard to merlin a very low overall significance and long term imperceptible effect. For peregrine overall significance is very low and a long term imperceptible effect.

11.9.17 The displacement of birds is not considered to be a significant effect however the placement of turbines in the commonage area poses a significant risk of displacing Annex 1 protected golden plover. This species commonly winters in upland heath areas which are becoming increasingly at risk from both wind farm development and afforestation. Regarding barrier effect this is presented in table 10-8. With regard to golden plover the overall significance is medium, hen harrier - medium, merlin – low and peregrine medium.

11.9.18 The decommissioning phase poses similar risks to potential effects arising in the construction phase however the magnitude of effect is normally reduced as infrastructure is in situ.

11.9.19 Regarding cumulative effects with regard to the permitted Knocknamona Windfarm the golden plover is the most relevant target species requiring cumulative analysis. Dyrick Hill will likely have a cumulative impact on golden plover in terms of land take and displacement/disturbance. Also in terms of collision risk, it would increase the predicted collision rate of 0.136 per annum to 6.346 per annum which increases the

county local population loss by 0.18% (0.004%increases to 0.184% per annum). For kestrel, the cumulative impact would increase the predicted collision rate of 0.230 per annum to 2.95per annum. Cumulative effects during construction phase would be a long term imperceptible cumulative effect. Cumulative effects during operation include collision, ongoing disturbance/displacement and barrier effect. Cumulative collision risk on avian receptors is considered negligible however for golden plover it is predicted to be a long term slight cumulative effect. With regard to Kestrel as the predicted collision rate of kestrel at Dyrick hill is greater than one per year this warrants further thought in terms of cumulative impact. The cumulative impact from both windfarms is 2.95 predicted collisions per year (0.0037% of national population).

11.9.20 Regarding mitigation by avoidance and design this is incorporated into the proposed layout. A number of measures are set out for the construction phase. An ecological Clerk of Works will oversee works for the duration of construction phase to ensure that all mitigation measures are implemented. Construction mitigation measures include:

- Construction will be undertaken outside of the bird breeding season (March 1st to August 31st inclusive) to avoid impact on nesting birds.
- Construction operations will take place during the hours of daylight to minimise disturbances to roosting birds, or active nocturnal bird species.
- Toolbox talks will be undertaken with construction staff on disturbance to key species during construction.
- Re-instated hedgerows will be planted with locally sourced native species. This will result in habitat enhancement for local species of conservation importance such as meadow pipit.
- A re-confirmatory survey (March/April) will be conducted of the proposed turbine locations to assess any evidence of target species activity or occupation of new territories (e.g. in the case of breeding snipe). Should any nesting locations be recorded, works at these locations will be restricted to

outside the breeding season (March 1st to August 31st inclusive) or until chicks are deemed to have fledged (following monitoring).

- The use of “white lights” on the turbines will not occur as these can attract night flying birds such as migrants, and insects, which in turn can attract bats. Certain turbines will be illuminated with medium intensity fixed red obstacle lights of 2000 candelas where required by the IAA. Lighting will be fitted with baffles to ensure that the light is directed skywards and will not be discernible from the ground.

11.9.21 In the operational phase mitigation will include post construction monitoring programme to confirm the efficacy of the mitigation measures. Fatality monitoring (during years 1,2,3,5,10 and 15), flight activity survey, monthly wildfowl census, breeding bird survey and breeding wader survey.

11.9.22 Regarding residual effects it noted that a comprehensive monitoring programme following construction will monitor the degree of barrier effect if any and any bird fatalities. It is stated that with the implementation of mitigation, the proposed development will have a slight imperceptible reversible residual effect and in the local context on birds.

Assessment of Ornithology

11.9.23 The EIAR and appendices set out extensive survey data in respect of bird population within and surrounding the site. A detailed analysis is provided of the significance of bird species recorded within the study area noting in particular species of importance at various levels (national, county, local, higher value). The potential impacts of the proposed development on each of the key environmental receptor species with regard to habitat loss, disturbance and displacement and collision risk was assessed during construction and operational phase and at decommissioning phase. The identification of key ornithological receptors and assessment of effects follows a precautionary approach. It is concluded within the

EIAR that with the implementation of mitigation, the proposed development will have a slight imperceptible reversible residual effect and in the local context on birds.

11.9.24 The cumulative impacts is also assessed with other existing and proposed windfarms within a 20km radius. It is noted that golden plover is the most relevant target species requiring cumulative analysis with regard to land take and displacement / disturbance. In terms of collision risk cumulative impact would increase collision rate of 0.136per annum to 6.346per annum which increases the county local population loss by 0.18% (0.004% increases to 0.184%) per annum. For kestrel cumulative impact would increase predicted collision rate of 0.230 per annum to 2.95 per annum.

11.9.25 I note the submissions of the DHLGH outlining concern with regard to implications for several species of high conservation concern. It is noted that hen harrier and merlin in particular require very large areas of specific habitat to form successful territories and it is noted that the site forms part of a larger unit where connected habitats are ecologically valuable than isolated ones. Noting the presence of a wild golden eagle close to the proposed site July-November 2023 and two white tailed sea eagles believed to be part of the current reintroduction programme, this is a reflection of the quality of the habitat. The Department recommended that these species while not detected during surveys of the site should have been considered in the EIAR.

11.9.26 The DHLGH also expressed concern for Annex I and red listed birds of conservation concern occurring in the zone of influence. The ornithological significance of the loss of a block of upland habitat such as is proposed is an adverse effect on already declining species. Given location within both breeding and wintering territories of hen harrier and merlin (Annex I species) the removal of a significant area of habitat from their range through habitat destruction and displacement would be a negative impact on them. It is noted that there is no national population estimate of merlin in Ireland, but 28-41 pairs are estimated to be present in the SPA network. The national hen harrier survey estimated national

population at 108-157 pairs. The direct loss or loss through degradation of occupied territory in combination with other pressures is of concern. The wintering population of Annex I species golden plover also use the site and negative impact arises through loss of foraging area and associated factors. Other red listed species of concern present of the site red grouse, kestrel, meadow pipit and snipe are present on site and woodcock may also be present. In relation to hen harrier, kestrel and merlin the repeated presence of birds during the breeding period indicates a nest is close and the area makes up a core portion of territory for these species. Regarding golden plover the department notes that the lack of survey of nocturnal usage and considers that the collision risk assessment is deficient in this regard. It is also stated that the exclusion of significant sightings of flocks of birds on the basis that they are above the sweep zone height is precarious as distance and height estimates are prone to substantial error. Such margin of error is compounded by use of several different observers with no documented calibration over different survey periods. Other variables are noted including avoidance rates based on turbine sizes different to those proposed and failure to capture nocturnal or poor visibility conditions such as bad weather often experienced in upland areas. Lighting which may in some circumstances reduce collision risk may in adverse conditions attract night migrating birds thereby increasing collision risk. The DHLGH considers that insufficient information has been provided to back up collision rate estimations and monitoring systems for species such as golden plover.

11.9.27 Regarding cryptic species such as woodcock, snipe and red grouse, the DHLGH notes that VP surveys are not appropriate and is critical of the limited nature of transects, with a greater proportion of them in coniferous forestry and along the existing roadway through the site and little through the more suitable core heath and wet grassland. No transect covering the eastern portion of the site. Nocturnal surveys were also not in accordance with best practice parameters. On this basis the DHLGH considers that the significance of impact on key avian receptors is underestimated.

11.9.28 Regarding displacement it is asserted that this is underestimated with regard to human disturbance. Degradation of habitat must be seen in the context of declining habitat available to species and the issue of fragmentation needs to be considered.

11.9.29 I also note the observer submissions which mirror a number of concerns raised by the DHLGH. Criticism is levelled at the apparent contradictions within the EIAR with regard to statement of adherence to recommended bird survey methods (SNH 2017) and actual survey methods, for example length of observation hours, observation conditions, structure and timing of surveys. The use of the avoidance rate for golden plover of 99.8% as opposed to 98% default is questioned. Methodologies in breeding and abundance surveys relying on hinterland and transect survey rather than species specific. The integrity, completeness and reliability of the input data to the collision risk model is called into question. The failure to address the eastern extent of the site in transect routes is also questioned and implications with regard to peregrine, merlin and hen harrier, nightjar and woodcock and owl. The collision risk with regard to red grouse, buzzard, kestrel and raven is substantive. It is also contended that the EIAR is deficient in terms of failure to address raven and dipper.

11.9.30 In the applicant's response to the submissions, it is asserted that the habitats on site are disturbed by agricultural practices and are of poor quality in relation to habitat conservation condition. It is stated that the site is not an important part of a larger territory and does not support important numbers of bird species of conservation concern. It is asserted that ornithological surveys carried out between summer 2019 and summer 2022 provide a robust picture of bird activity in the area. Levels of raptor activity within the site including hen harrier, merlin and kestrel are low reflecting the habitat condition and level of disturbance. It is outlined that mitigation measures including biodiversity enhancement and management plan focus on enhancement of nearby agricultural lands for raptor species thereby providing continuity of existing heath and grassland habitats. Regarding collision risk for white tailed eagle or golden eagle it is asserted that collision risk is negligible, based on the contention that there are no known eagle nest sites within at least 15km. The applicant commits to carrying out inspections and removing dead sheep

as carrion is a major foraging resource and mist likely reason that one would enter the site.

11.9.31 Regarding the robustness of the collision risk model it is acknowledged that viewshed coverage does not cover the entirety of the 500m buffer however completeness of the model is not affected on the basis of duration of survey (3.5year data input where 2year is recommended SNH2017) experience and competence of ornithologists who undertook surveys, a correction factor it is noted that the model is based on identification of flight risk volume/ flight risk window' (area/layout of windfarm multiplied by height of turbine). Bird occupancy within flight risk volume/window (birds present multiplied by time spent in flight risk volume/window). Application of an avoidance rate takes account of the likely degree of successful avoidance. Thus, only activity within the flight risk volume is accounted for in the model. It is also stated that a correction factor is included to account for the area of the 500m boundary that was captured. I have reviewed Appendix A of appendix 10,2 Collision risk model which provides an example CRM calculation, and which refers to the 500m buffer therefore the correction factor is not evident.

11.9.32 With regard to nocturnal movement of golden plover the applicant outlines the basis for nocturnal golden plover activity classification based on professional judgement and recent studies on collision risk modelling for offshore windfarms (Band B 2012a and b) and Garthe S and Huppop O (2003). I note that nocturnal golden plover activity was assigned a subjective ranking of 2 (where scale of 1 is hardly any nocturnal flight activity to 5 (much nocturnal flight activity). With regard to white tailed eagle and golden eagle it is outlined that there were not sighting of either during the 3.5year survey period and the site is not an important habitat for them noting also low level of raptor activity and collision risk is negligible.

11.9.33 With regard to the assessment of Golden Plover I would echo the concerns of the DHLGH and a number of observers regarding exclusion of significant sightings of flocks of birds on the basis that they are above turbine sweep zone height having regard to the potential for error and recording by several different observers and

absence of nocturnal usage survey. The impact of poor visibility bad weather and the addition of lighting on avoidance rates has also not been adequately addressed in terms of the collision risk. Further concern with regard to survey methods with regard to cryptic species and the limited use of transect surveys. Whilst the applicant has submitted that representative habitat types have been well covered by distribution and abundance surveys (Table 6-2 of response to submissions document) the evident limitation with regard to the eastern part of the site is of concern.

11.9. It is submitted by the DHLGH that the displacement impact (from windfarm infrastructure and human activity) on sensitive species has been underestimated and the potential adverse impact must be seen in the context of declining habitats and species.

11.9.35I consider that based on the evidence the proposed development has potential for significant impacts on key avian receptors. In light of the direct loss of significant habitat and the risk to bird species of high conservation concern it is considered that the proposed development would result in a significant loss of biodiversity which cannot be mitigated.

11.9.36I have considered all of the written submissions made in relation to birds and the relevant contents of the file including the EIAR and supporting documentation. I am not satisfied that the potential for significant adverse impacts on birds, including Annex I species, can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, therefore I am of the opinion that the proposed development would have unacceptable direct, indirect or cumulative impacts on birds.

11.10 Land, Soil, and Geology

11.10.1Chapter 11 of the EIAR addresses soils, geology and hydrogeology. The assessment methodology sets out to evaluate the impacts of construction, operation and decommissioning on existing soils, geology and hydrogeology. Baseline geological and hydrogeological conditions were determined following desktop review and two site walkovers including peat probing surveys undertaken in July 2020 and October 2022. An intrusive ground investigation comprising trial pits and boreholes was undertaken between December 2022 and January 2023.

11.10.2 In terms of describing the baseline the site is underlain by a mantle of superficial deposits comprising blanket peat, glacial till and subordinate linear deposits of alluvium (Volume IV Figure 11.1). The linear deposits of alluvium do not cross any of the site infrastructure with the exception of a river crossing where access road between turbines T08 and T12 cross the Colligan River requiring a bridge structure and approach earthworks. These are in turn underlain by a sequence of Upper Devonian conglomerates, mudstones and sandstone (Volume IV Figure 11.2). At several locations across the site, bedrock is exposed at surface as outcrops. Scree deposits, resulting from freeze thaw weathering of the bedrock are also frequent and are typically mapped in areas of higher elevation. Horizontal directional drilling (HDD) will be required at one location to cross under Skeheens stream (1km west of site) as the existing bridge has insufficient cover to accommodate the cable. The HDD location is underlain by alluvium deposits which are immediately flanked by till deposits, and these are in turn underlain by Upper Devonian Ballytrasna formation.

11.10.3 Based on GSI Quaternary Sediments mapping T04 is located within an area mapped as bedrock outcrop or subcrop. Eight turbine locations (T01, T02, T06, T07, T08. T10, T11 and T12) are located within areas mapped as blanket peat. T05 is located in an area mapped as till derived from Devonian sandstones.

11.10.4 Based on GSI groundwater vulnerability mapping, site walkovers and intrusive ground investigation overburden deposits are generally <5m deep across the majority of the site. The expected permeability for the subsoil is moderate but may be locally high due to the presence of shallow or outcropping weathered bedrock.

11.10.5The proposed windfarm site and a portion of the proposed grid connection are mainly located within the Kilrion groundwater body (GWB) but also comprises a smaller area on the north belonging to the Comeragh GWB. The northernmost 100m of T2 hardstand and approximately 1.8km of access road lie within Comeragh GWB. Both GWBs are classified as ‘poorly productive bedrock.’

11.10.6According to interim classification work carried out as part of the Water Framework Directive (WFD) and published by the EPA, the Kilrion and Comeragh GWBs are classified as having ‘good’ status om terms of quantity and quality. The overall risk result of ‘not at risk’ is applied. There are no public water supplies or public supply source protection areas within the site boundary. There are 6 source protection areas for public water supply schemes and two group water schemes in the wider area within 20km. There are 4 groundwater wells recorded within 1km of the site and 22 wells recorded within 1km of the GCR. There are no karst features within the site or wider study area.

11.10.7 The Comeragh Mountains are identified as a County Geological Site (CGS), comprising a mountain plateau which is heavily ice sculpted with corries. They have been shaped and moulded during the Quaternary (Ice Age) by glacier ice. This is described as an audited site which must be protected from being damaged or deteriorated during the project execution. The site is also recommended for Geological NHA status. The proposed windfarm site is outside the Comeragh Mountain CGS. (See Fig 11.9).

11.10.8Walkover surveys confirmed that the site is predominantly underlain by a thin mantle of blanket peat. The minimum, maximum and mean peat depth recorded out of 200 peat probe locations were 0.0m, 0.7m and 0.14m, respectively. In general, thinner peat layers were encountered in areas of higher elevation / steeper terrain. Summary of peat depth at key infrastructure is presented in table 11-11. I note that

detailed investigations are set out in Appendix 11.1 Geotechnical Assessment Report.

11.10.9 In terms of site topography the site is defined by a series of ice sculpted mountain ridges, peaks and valleys. Elevations range from 450m at Milk Hill to 190m AOD. Slopes at the proposed turbine locations range from 3^{o} to 15^{o} . Slopes at the proposed substation range from 8-16^{o}. Slopes at the proposed Colligan River crossing range between 9^{o} and 16 ^{o} and form an approximately 5m deep and 20-30m wide north south trending river valley. Slopes at the borrow pit location are typically <2^{o}.

11.10.10Regarding slope stability the review of GSI landslide susceptibility database shows proposed infrastructure locations within an area of low to moderate high susceptibility with localised areas classified as high. Based on field observations it is contended that the risk of landslide at turbines and along the access track is negligible. It is contended that the GSI landslide susceptibility ratings do not accurately reflect actual ground conditions encountered on site (shallow peat or complete absence of peat deposits). Deeper peat deposits encountered at the Colligan River crossing are isolated and not laterally continuous and therefore a negligible risk arises with respect to slope instability. Regarding grid connection route GCR, based on desktop review it was concluded that given that the majority of the route is situated in the public roadway and given limited extent of lateral and vertical excavations it was considered that the GCR does not entail a risk to slope stability.

11.10.11 Regarding peat stability assessment it is outlined that as peat survey found that peat deposits at the proposed turbine locations were less than 0.5m in depth a peat stability assessment was not warranted in accordance with Scottish Executive “Peat Landslide Hazard and Risk Assessment, Best Practice Guide for proposed Electricity Generation Developments” (2017). Regarding soil contamination there are no known areas of soil contamination on site or grid connection route.

11.10.12In terms of potential effects the EIAR notes that in a do-nothing scenario the current land uses would continue and the impact on soils geology and hydrology would remain unaltered. In the construction phase works which have a potential for impact on soils and geology and hydrogeology include:

- Site Clearance – Topsoil and vegetation clearance at turbine and ancillary infrastructure locations and temporary construction compounds,
- Permanent felling if 5.4ha of forestry
- Slope failure, health and safety, influx of acidic and/or peat laden waters into downgradient surface water features resulting in decreased pH value. Impact on groundwater quality in underlying locally important aquifer.
- Storage of fuels and oils presents potential for spillage leaks resulting in contamination of underlying soils and groundwater.
- Extraction of rock - reduction in exhaustible resource
- Internal access roads. Soil compaction, fuel spills/leaks, erosion, water quality impacts
- Grid connection construction. Preferential pathways. Erosion.
- Horizontal Directional Drilling at water crossing point. Contamination, collapse. ‘Frack out’
- Accommodation works along TDR. Localised excavation of overburden. Exposure to erosion,

11.10.13 In the operational phase the potential impacts on soils geology and hydrogeology include

- Potential for minor accidental spills of fuel/oil from maintenance traffic.
- Potential spills/leaks of oil battery/fluids from grid transformer and turbine transformer oil cooling equipment.
- Use of granular material to maintain access tracks.

Impacts associated with decommissioning will be similar to those associated with construction but of reduced magnitude because extensive excavation will not be

required. Potential environmental effect of soil storage and stockpiling and contamination by fuel leaks will remain during decommissioning.

11.10.14 Regarding cumulative effects the EIAR sets notes consideration of large scale developments within 20km. If occurring concurrently with construction of the proposed development a supply issue with local quarries might arise. Potential groundwater pollution from runoff on groundwater receptor. Table 11-18 provides a summary of unmitigated potential impacts on soil and geology and Table 11-19 summarises potential impact on hydrogeology.

11.10.15 Mitigation measures are set out at 11.6 and include the following :

- Design mitigation.
- Adherence to CEMP and best practice methodologies EPA, IFI and Scottish Executive.
- Design risk assessment and detailed method statements for work elements
- Programming of works to avoid severe weather conditions.
- Surface water management system
- Fuel storage. Spill protection measures adjacent to sensitive receptors and emergency spill response procedures.
- Refuelling measures / hydrocarbon management
- Use of site won material as general fill in access track and hardstand construction
- Surplus overburden will be reused on site.
- Work corridor to be pegged. Excavations carried out from access tracks as they are constructed to reduce compaction.
- To mitigate erosion exposed soil or rock will be constructed and backfilled as quickly as possible. Excavations to stop during or prior to heavy rainfall events.

Operational Phase Mitigation will include good site practices in terms of measures to reduce soil compaction, storage of fuels, refuelling of maintenance vehicles and

management of hydrocarbons. Mitigation measures applied during decommissioning activities will be similar to those applied during construction where relevant. Some of the impacts associated with reinstatement of the site will be avoided by leaving these in place (access tracks and hardstanding). If removal is required mitigation as per construction period will apply.

11.10.16 In terms of cumulative impact construction in tandem with Dyrick Hill Wind farm could give rise to strain on crushed rock aggregate resources. No significant cumulative effects envisaged during operation or decommissioning phases.

Regarding residual impact it is asserted within the EIAR that following the implementation of mitigation measures the residual impact significance to the receiving environment would be imperceptible during the construction period and imperceptible during operation. Monitoring of mitigation measures will be carried out throughout the construction and operational phase. Table 11-21 and 11-22 summarise residual impact on soils geology and hydrogeology post mitigation. Significance post mitigation is rated as imperceptible for all impacts save for potential strain on supply and reduction of finite aggregate resource which is slight significance.

Assessment of Land Soil Geology Chapter

11.10.17 I have considered all of the written submissions made in relation to land, soil, and geology. I am satisfied that many of the identified potential impacts would be avoided, managed and mitigated by the measures which form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I have concerns however with regard to peat stability risk as also raised in a number of the submissions. An Taisce assert that notwithstanding findings of peat probes indicating depths of less than 0.5m the risk of landslide should be addressed by way of peat stability assessment. Third party submissions also contend that given the extent of excavation and extraction, drainage implications and location of a number of turbines

and portion of the access road within areas mapped as having moderate to high landslide susceptibility a more detailed analysis is required.

11.10.18 I note that the analysis of peat depth (finding depths ranging from 0.05 to 0.7m) is based on peat probing survey which may not be accurate as potential for inaccuracy may result from probes being obstructed or extending into underlying sediments. The applicant deemed peat stability assessment not to be warranted as peat deposits at turbine locations were <0.5m in depth. It was asserted that deeper peat deposit 0.6m was encountered in the banks of a stream and was immediately flanked by shallow deposits to the east and west (0.25m and 0.0m) respectively and was thus deemed to be an outlier and not representative of peat depths across the site. In terms of more intrusive ground investigation as set out in Geotechnical Assessment Report I note however TP12 found peat to 0.8m below ground level. In my view a degree of uncertainty remains, and more detailed investigation is required with regard to peat depth.

11.10.19 I the slope variation of key infrastructural locations 2º at borrow pit, 3º at T01, 7º at T4 and T8, 9º at Colligan River Crossing Point(west bank) 12º at T02, T5, T6 and T12. 13º at T7 and T11 and 15º at T10 and 16º at the on site substation and Colligan River crossing east bank. I note that the Scottish Government "*Peat Landslide Hazard and Risk Assessments, Best Practice Guide for proposed Electricity Generation Developments"* (2017) requires that "In blanket bogs, which typically mantle hillslopes, Peat Landslide and Hazard Risk Assessment (PLHRA) should be undertaken where slopes exceed 2°, reflecting published data on peat landslide source slopes for blanket bogs (Evans and Warburton, 2007; Boylan et al., 2008)." See also Fig 1.1 Flow diagram checklist for peat landslide hazard and risk assessment. Given the GSI rating of the site as being at low to moderate high risk of landslide and the range of slopes recorded at the site, I consider that the risk of potential peat landslide needs to be addressed in greater detail.

11.10.20 To conclude, I consider that the issue of peat stability has not been adequately addressed and would require further information in the form of a detailed peat

stability risk assessment. In light of the substantive reasons for refusal outlined above and below, I do not propose that a further information request would issue on this matter.

11.11 Hydrology and Hydrogeology

11.11.1 Chapter 12 deals with Hydrology and Water Quality and is supported by associated appendices in Volume III Appendix 12.1 Hydrology Field assessment Observations, and Appendix 2.1 Construction Environmental Management Plan CEMP Appendix D Surface Water Management Plan.

11.11.2 The methodology for assessment is based on desk top study and field assessment involving site walkover surveys on 5th October 2022 and 6th October 2022. The EIAR sets out relevant guidance and legislation relevant to the assessment methodology.

11.11.3 In terms of the baseline the site is located within two waterbody catchments: the Colligan-Mahon catchment (hydrometric area 17) and the Suir catchment (Hydrometric Area 16). A network of field drains and first order streams on site which have been straightened and deepened in places through land management practices characterise the site. Steep topography on the site results in clusters of small runnels which join to form ditches draining for the majority of the site to the Colligan River. There are no naturally occurring lakes or reservoirs within the site.

11.11.4 Within the Nier-020 sub-basin, the Shanballyanne stream drains away from the site to the north. This drains to the Nier river, which in turn drains to the Suir river (sub-catchment Suir-SC-120). Within the Colligan_010 sub-basin, the Skeheens Stream flows in a southerly direction along the western boundary of the site and meets the Colligan river downstream. The Knockavanniamountain stream drains in a southwest direction near the centre of the site flowing into the Colligan River. The

Glennaneanemountin stream and Carrigbrack stream flows in a southwest direction into the Colligan River near (outside) the southern boundary of the site.

11.11.5All proposed wind turbines are located a minimum of 100m from mapped Water Framework Directive (WFD) surface water bodies. A construction compound is to be located at the access to the site 20m from the Skeheens Stream and the second construction compound is north of the on site substation 145m west of the Knockavanniamountain stream. The grid connection route (GCR) crosses Skeheens Stream and Colligan river which are within the colligan_010 subcatchment. The turbine delivery route (TDR) and GCR cross the Ballynaguilkee Lower Stream a tributary of the Blackwater River. (SAC). The Ballynaguilkee lower stream is within the Finisk_SC_010 subcatchment.

11.11. 6 WFD quality status 2016-2021 and river waterbody risk for the Colligan, Finisk and Nier Rivers are provided in table 12-10. Within the Colligan_010 sub-catchment the WFD ecological status is assigned as ‘good’ for all streams. The Colligan River has a high status WFD objective. The streams within the sub catchment are reported to be ‘not at risk.’ Further down the catchment (sub-catchment Colligan_020) the river degrades to moderate status and is identified as ‘at risk’ from anthropogenic pressures. Within the Nier River sub catchment the Shanballyann stream is ‘moderate; ecological status, The WFD objective to achieve high status and it is reported to be ‘at risk’ in the WFD cycle 2 programme with forestry pressure identified for the catchment. Within the Finsk_20 subcatchment WFD status is moderate. The objective to achieve good status is ‘under review.’

11.11.7 There are no recorded flooding events within the windfarm site according to OPW maps. Recurring flooding was noted at the final section of the GCR along the N72 approximately 300m before Dungarvan substation at the Colligan River Kildangan Bridge. Flooding events along TDR at N92, and N25. Regarding flood risk the windfarm site is not located in flood zone and there is no impact on floodplain storage or fluvial flood flow routes. Increased impermeable area arising from 11.3km of internal tracks will increase runoff during storm events however when compared to

total area of overlapping waterbody catchments the increased impact on surface water run-off will be minimal. With regard to GCR and TDR located within road corridor there is no impact on fluvial flooding. Where the cable route crosses flood zone B it will be installed below ground level. Where cable route crosses smaller watercourses this will be done within an excavated trench. Horizontal directional drilling is proposed at one location. It is outlined that the risk of surface water and groundwater flooding is low during installation of GCR and TDR accommodation works.

11.11.8 In terms of prediction of likely significant effects in the do-nothing scenario the land use would remain, and surface water drainage will continue as currently. In the construction phase

- Excavation and removal of vegetation and replacement with less permeable surfaces results in potential increased runoff or change in the hydrological response of the site to rainfall. Alteration of the hydrology of the site can impact on volume of water draining to local streams or watercourses. Table 12-15 sets out the impermeable footprint increase ratio and shows that the increase is minimal in comparison to the overall catchment of each sub-basin in which it is located. The total increase of impermeable area in relation to the Colligan-010 sub-basin is 0.303%.
- Alterations to drainage patterns and changes in hydro morphology through change in flow velocity, scour and alteration of sediment transport.
- Increase in run off due to GCR is not anticipated because surfaces are not changed. Impact of TDR not anticipated to be significant to the hydrological environment.
- Alteration of natural flow paths and inadequate storm management can give rise to flood risk.
- Potential effects on water quality / physico-chemical conditions.
- Release of construction or cementitious materials.
- Release of suspended solids. Chemical leak

- Erosion in areas with newly formed preferential flowpaths for water runoff.
- Release of waste water sanitation contaminants.
- Excavation dewatering and construction water.
- Release of suspended solids, restriction of waterflow, alteration of hydrological regime leading to erosion / deposition and water quality impacts at watercourse crossings.
- Release of hydrocarbons to surface water / groundwater.
- Cabling and grid connection route potential runoff and contaminant transport, water quality impacts from chemicals, concrete. Release of suspended solids or hydrocarbons.
- Horizontal directional drilling (HDD). Accidental spillage or unmanaged deposition of construction materials and release of lubricated fluids to drainage or surface water network.
- Turbine Delivery Route – potential accidental spillage or unmanaged deposition of construction material and release of lubricated fluids to the drainage or surface water networks associated with the development.
- Potential effects on surface water dependent designated sites.

11.11.9 Regarding the operational phase potential effects arise by way of accidental pollution from spills and leaks of fuel oil and chemicals from vehicles and maintenance works, transformer oil. In the decommissioning phase potential impacts are similar to the construction phase but are less significant.

11.11.10 In relation to cumulative effects other developments in the same catchments that have potential to have construction stage overlap with the proposed development are considered. There are no significant proposed or consented developments that share a waterbody catchment with the site. The GCR passes through the Finisk_020 sub-catchment within which the proposed Dyrick hill wind farm is located giving rise to potential for cumulative effect however the proposed works associated with cable crossing within the Finisk_020 sub catchment are minor.

11.11.11 Regarding mitigation a number of measures are outlined.

- Design mitigation by avoidance including set back from hydrological features is noted. GCR limits number of watercourse crossings HDD is proposed at one location.
- Surface water management plan for construction operation and decommissioning stages as part of the Construction Environmental Management Plan (CEMP.)
- Attenuation and flood risk - Swales, drainage channels and suitably sized settlement ponds.
- Watercourse crossings designed and suitably sized to accommodate peak or storm discharge rates. Excavation of cable trenches in dry weather where possible and infilled and vegetated to prevent soil erosion or generation of silt pollution of nearby surface water.
- Surface water management system to ensure no increase in risk of fluvial or surface water flooding downstream.
- Monitoring by ecological clerk of works.
- Surface water quality monitoring programme.
- Daily inspection of environmental protection measures during construction and commissioning phase.
- Best practice construction methods.
- Control of accidental spills and leaks.
- Control of concrete runoff and sediment runoff
- Works in or adjacent to waters to be carried out in accordance with IFI biosecurity protocols.
- Method statement of works for horizontal directional drilling.
- Operational and maintenance mitigation will include surface water management plan providing for multistage SUDS treatment train.

- Maintenance routine relating to surface water by way of inspection of drains, check dams, cross drains and culverts, outfalls, swales and progress of vegetation.
- Mitigation for decommissioning stage will include silt protection procedures similar to during construction and erosion control measures where required.

11.11.12 In terms of residual effect it is outlined that subject to implementation of mitigation measures no significant residual effects on the water environment are predicted. There will be no perceivable impact on the Colligan River and the Nier River which are highly sensitive receptors that are hydrologically connected to the site, GCR and TDR. The proposed development will not result in the deterioration of the status of any waterbody under the WFD or jeopardise the achievement of waterbody objectives.

Assessment of hydrology

11.11.13 Observer submissions outline concerns regarding potential pollutants entering local streams, affecting water quality and biodiversity, and potential failure of mitigation measures. Concerns are also raised in relation to the lack of submitted detail in the area of mitigation, for example precise detailed drawings of the proposed silt fences, and the effectiveness of measures in the event of to poor installation and maintenance.

11.11.14 Embedded mitigation measures, the application of a mitigation hierarchy and a detailed drainage design based on SUDS principles incorporate best practice measures to protect hydrological resource and ensure that surface water runoff from the developed areas of the site will be of a high quality and will, therefore, not impact on the quality of downstream rivers. Detailed drainage management design and pollution prevention and mitigation measures proposed during the construction phase are set out.

11.11.15 Having reviewed all documentation submitted and having regard to existing best practice methodologies in place for construction practices relating to developments

in proximity to water, I am satisfied that the range of mitigation measures for the various aspects of the development are acceptable and that best practice industry standards in place are proven and effective. Subject to the implementation of these measures, I do not consider that the proposed development will impact on water quality in existing water courses.

11.11.16 I am satisfied that the impacts on hydrology have been identified and can be avoided, managed or mitigated by the mitigation measures outlined and through suitable conditions. I am, therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impact on surface water or groundwater in the area. I consider that the information provided in the planning application documentation is sufficient to allow the impacts of the proposed development to be fully assessed.

11.12 Air and Climate

11.12.1 Chapter 7 deals with Air and Climate and appendix 7.1 sets out the Carbon Calculator Inputs. The chapter sets out to identify describe and assess potential significant direct and indirect effects on air quality and climate arising from construction operation and decommissioning of the development. The chapter sets out the relevant legislation and guidance on air quality. The methodology is set out with focus on potential emissions arising during construction and decommissioning phases. The Scottish Windfarm Carbon Assessment tool was used to predict carbon savings for the wind farm for an operational period of 40 years.

11.12.2 In the do-nothing scenario local air quality and the microclimate will remain unchanged. On a national scale an increase in greenhouse gas emission will result if increasing future electricity needs are not met by alternative renewable sources. The opportunity to meet national targets set out in the Climate Action Plan would be lost.

11.12.3 In the construction phase the primary sources of potential impacts include dust arising from earthworks, tree felling activities, trench excavation along cable routes,

construction of new access tracks, temporary storage of excavated material, construction of substation, movement of construction vehicles, loading and unloading aggregates/materials and movement of material around the site. Due to the small number of receptors at the windfarm site and distance from source of dust emissions, (closest residential dwelling is approximately 174m from the main entrance to the site) the sensitivity of the area is considered to be low. Construction vehicles and plant emissions have the potential to increase concentrations of compounds such as NO2, benzene and PM10 in the receiving environment however exposure to local receptors will be slight and of short duration (but also recurring) as the rural setting will allow emissions to rapidly dilute in the open air. Increased traffic volumes will arise on the local road network over the construction period of 18 to 24 months. The combined heavy goods vehicle (HGV) and light goods vehicles (LGV) average daily increase is 161 trips per day throughout the construction programme. Some receptors along the route have the potential for dust soiling which is a temporary moderate impact. Emissions from plant and machinery such as generators excavators which will be operated on an intermittent basis will give rise to an imperceptible impact in terms of emissions.

11.12.4 Regarding the GCR given the number of residential dwellings located in close proximity to the route the sensitivity would be considered medium. Some houses may experience soiling and deposition of vegetation effects and increased concentration of compounds such as NO2, Benzene and PM10. However given the rolling nature of construction works effects will be short term slight negative effects on air quality. Regarding the TDR impacts arising in terms of emissions from air pollutants from plant and vehicles are short term and slight in magnitude.

11.12.3 During the operational phase, the main air quality considerations relate to diesel generator at substation which will operate intermittently as a back up /emergency power supply. Due to low usage, impact in relation to emission of carbon dioxide, nitrogen oxide and particulate matter will be imperceptible. Maintenance vehicles will access the site during the operational period however given the low traffic involved impact will be imperceptible. Positive impacts on air quality will arise due to the displacement of fossil fuels as an energy source. Maintenance vehicles will also

access joint bays for periodic maintenance and carry out point works along GCR however such will be low level and infrequent.

11.12.4 In terms of the decommissioning phase, truck movements will be significantly less than construction phase and will result in a slight temporary impact.

11.12.5 In terms of climate the online Scottish Windfarm Carbon Assessment Tool was used to estimate carbon savings as a result of the construction and operation of the windfarm. Based on the tool during the manufacture and transportation of turbines and construction and decommissioning 59,286-70,498 tonnes of CO2 will be lost to the atmosphere. This is based on the assessment of Vestas (Model V162 6.0-7.2MW) the lower range of 6.0MW and upper range of 7.2MW. This represents 1.85-1.87% of the total amount of CO2 emissions that will be offset by the proposed development. Losses during construction and decommissioning phases will be due to reduced carbon fixing potential, losses from soil organic matter and losses due to forestry felling. In total it is estimated that 3,176,680-3,814,600 tonnes of CO2 will be displaced over the proposed forty year lifetime of the windfarm. (79,417-95,365 tonnes CO2 per annum) which assists in achieving goals of Climate Action Plan. For the proposed development, the payback time for the manufacture, construction and decommissioning phases of the proposed development is estimated at approximately 1.1 years.

11.12.6 It is asserted that the carbon calculator was created to calculate carbon loss from acid bog and fen habitats. The site does not function as acid bog or fen habitat and therefore does not contain the same high levels of carbon. Carbon loss calculations are slightly overestimated as account is not taken of replanting of forestry on replant lands. Replant lands will offset 2,851 tonnes of CO2 lost due to felling of forestry.

11.12.7In relation to cumulative impacts, cumulative impacts may arise if construction operational and decommissioning phase of the project occurs simultaneously with the construction on site and GCR. No measurable negative cumulative effect with other developments on air quality and climate in the operational period. In terms of climate and carbon the proposed development cumulatively with other renewable

energy projects will reduce CO2 emissions by displacing fossil fuel in the production of electricity, resulting in a slight moderate positive impact on climate.

11.12.8 Regarding mitigation measures for air and climate construction mitigation as set out in the CEMP will include:

- Internal access roads constructed prior to commencement of other major construction activities. Roads will be finished with graded aggregate which compacts preventing dust.
- Use of water bowser to spray work areas and haul rods
- Covering of loads to minimise potential for fugitive emissions
- Revegetation of earthworks and exposed areas / soil stockpiles
- Access and egress of construction vehicles controlled and directed to designated locations along defined routes,
- Maintenance of construction vehicles and machinery in good working order
- Wheel washing facilities
- Dust control plan as part of the CEMP
- Receptors which have the potential to receive dusting and soiling temporary works at TDR notes and adjacent to the GCR where appropriate and with agreement of landowner will have facades cleaned.
- No idling vehicles
- Regular servicing of vehicles.

11.12.9 In the operational phase positive impacts on air quality arise therefore mitigation is not necessary. In the decommissioning phase – mitigation measures will be as per construction phase with respect to dust control and minimisation. With regard to climate the overall positive impact in terms of carbon reduction and climate change is notable. No mitigation measures are necessary or proposed.

11.12.10 In terms of residual impacts following implementation of mitigation the site GCR and TDR works will result in slight to moderate residual impacts from fugitive dust emissions during construction activities. This will be localised and temporary.

Impacts related to vehicle emissions will reduce significantly following the construction and no significant impacts are anticipated. Low level of maintenance traffic during operational period will have an imperceptible impact. Impacts on air quality due to vehicle emissions and dust during the decommissioning phase are similar to construction phase but of smaller magnitude. They will be temporary in nature and result in slight to moderate residual impact. During operations, the proposed development will result in the avoidance of emissions from fossil fuel generators which is a positive effect on air quality.

11.12.11 In relation to climate at microclimate level the 9% increase in hardstanding surfaces will not negatively impact the vegetation necessary to maintain a microclimate. In terms of macroclimate the annual average output of 60MW-72MW for the proposed development will result in the net displacement of 79,417-95,365 tonnes of CO2 per annum. This results in a positive impact by removing GHG emissions that would have otherwise been part of the output of traditional energy manufacturing. No potential direct or indirect impact on air temperature, microclimate or macroclimate associated with the development of the site, GCR. Residual positive impacts from the operation of the proposed development in terms of the displacement of fossil fuel energy generation with renewable energy.

Assessment of Air and Climate

11.12.12 I consider that the information provided in the EIAR with regard to air and climate is sufficient to allow the impacts of the proposed development to be fully assessed. With regard to the methodology for calculating carbon losses and savings which is informed by the Scottish Government's carbon calculator and other relevant information. I consider this to be robust and reasonable. I am satisfied that the impacts identified in respect of air and climate would be avoided, managed or mitigated by measures forming part of the proposed scheme and I am, therefore, satisfied that the proposed development would not have any unacceptable direct or indirect impacts on air quality or climate. The proposed windfarm would contribute to the national renewable energy supply and this will have a positive environmental effect in reducing reliance on fossil fuels. Significant cumulative positive effects on greenhouse gas emissions and on climate goals would arise.

11.13 Noise and Vibration

11.13.1 Chapter 8 of the EIAR deals with noise and vibration and is supported by Appendix 8.1a Baseline noise measurements and data analysis, Appendix 8.1b equipment calibration certificates, 8.1c Noise sensitive location details. 8.1d Valley Correction, 8.1e sound power level for wind turbines, 8.1f predicted noise levels from wind farm at nearby noise sensitive locations.

11.13.2 The methodology for noise and vibration assessment is set out involving review of guidance criteria, characteristics of receiving noise environment, prediction and evaluation of noise impact, mitigation and assessment of residual impact. The existing noise baseline is described based on noise monitoring at four receptor locations as shown at figure 8.2. The data was analysed in conjunction with on-site measured wind speed data. The raw background L_{A90} noise data was reviewed. Appendix 8.1 presents the results of data analysis. Tables 8-3 and 8.4 present prevailing background noise daytime periods and nighttime periods, respectively. The number of noise sensitive locations within the 35dB L_{A90} study area is 4. These properties are to the south of the proposed development therefore upwind of the prevailing wind. The calculation is based on downwind case which is when the wind is from a northerly direction which would occur relatively irregularly.

11.13.3 In terms of predicting likely significant effects, in the do nothing scenario the noise environment would remain unchanged. In terms of the construction phase the nearest noise sensitive locations are sufficiently distant (nearest location to access track is over 60m, turbines work areas are over 700m from the nearest noise sensitive locations) such that construction incurred vibration will not be perceivable. The construction noise model assessed several tasks with the potential to generate noise, including deliveries to / removal of material to and from the site, felling, preparation of access roads, excavation of material from borrow pit, preparation of hardstands and drainage, excavation of foundations, pouring of foundations and installation of wind turbines. Offsite works include works associated with grid connection, directional drilling at 4 locations along the grid connection route. The

most intensive period of works will be in month six of the project when multiple construction activities take place concurrently. The predicted cumulative noise at all noise sensitive locations in the vicinity of the proposed project will be less than 65dB $L_{Aeq.1hr*r}$ at the nearest occupied dwelling which is below the construction noise limit.

11.13.4 Grid connection works will be carried out over a 12 month period and rolling road closures will be implemented. Predicted noise levels for grid connection works are presented at Table 8.10. There are two dwellings within 10m of the grid connection works, 27 dwellings between 10-25m and 34 dwellings between 25-50m and 24 dwellings between 50m-100m. In some instances, the maximum predicted noise levels from grid connection works may be above the noise limit of 65dB$_{LAeq.1hr}$. However, these elevated noise levels will only occur for short durations at a limited number of dwellings. Horizontal directional drilling under a bridge structure along a section of the N72 is over 300m from the nearest single property and is screened by farm buildings.

11.13.5 Regarding the operational phase effects noise predictions are carried out using international standard ISO 9613 Acoustics – Attenuation of Sound during Propagation Outdoors. The worst case downwind condition is considered in the assessment (i.e. for wind blowing from the proposed turbines towards the nearby houses). Noise predictions were performed for the 10 wind turbine layout using the highest noise levels at each wind speed for the proposed turbine models for a range of standardised 10m height wind speeds from 2m/s up to 14m/s. Receptors within the 35dB$_{LA90}$ noise contour of the turbines were modelled. Predicted noise levels from other on-site noise sources were also modelled and cumulative noise from all on-site sources were modelled and cumulative noise assessed against the derived noise limits. Table 8.14 presents predicted noise levels adjacent to 11 receptor locations closest to the wind farm. (Appendix 8.1 provides noise levels at all receptor locations) Predicted noise levels present worst case scenario (noise sensitive receptors downwind). Table 8.14 presents derived daytime and night-time noise limits at each of these locations. The predicted noise levels are below daytime and night-time noise levels. At some receptor locations a new source of noise will be

introduced into the soundscape and there will be a long term moderate significance of effect on the closest dwellings to the proposed windfarm.

11.13.6 The cumulative effect from other nearby operational and consented windfarm developments is considered. Given the separation distance involved no cumulative noise impacts are predicted. The only constructed windfarm that has the potential to be within 10dB of the proposed Coumnagappul windfarm is the single turbine (Tierney) 5km west of the stie. Figure 8.3 shows the 35dB contour from Cumulative Tierney and Dyrick Hill windfarm. It is stated that the cumulative noise meets the wind energy noise criteria for all locations, except for a property 130m north of the Tierney single turbine R158. Daytime criteria is exceeded by 4.4dB at lower windspeeds and 1.1dB at higher windspeeds and the night time criteria is exceeded by up to 3.8dB. The exceedance is due to the single turbine.

11.13.7 Regarding substation noise, predicted rated noise levels from the proposed substation are presented in table 8.17. Noise level from transformers are below level where there is a possibility of an adverse effect at closest noise sensitive locations. Regarding effects during decommissioning these are comparable to those described for construction phase but are lesser in extent.

11.13.8The predicted noise levels from on-site activity is below noise limits in BS5228 nonetheless several mitigation measures will be employed as standard construction practice. Consultation with the local community will be undertaken to minimise effects. Noise control measures set out in the CEMP will be implemented including proper maintenance of plant to minimise noise produced by site operations, limited hours of construction to avoid unsociable hours. On site construction and decommissioning noise levels will be below the relevant noise limits of 65dB$L_{Aeq.1hr}$ for operations exceeding one month, therefore construction noise effects are not considered to be significant. There is potential for temporary elevated noise levels due to grid connection works, however these will be short in duration (less than 3 days). Where works at elevated noise levels are required over an extended period at

a given location, a temporary barrier or screen will be used to reduce noise levels below the noise limit where required.

11.13.9 Regarding operational mitigation as the predicted noise meets daytime and nighttime noise limits at closest locations no mitigation is required. Based on the predicted noise levels, a new source of noise will be introduced into the soundscape, and it is expected that there will be a long term slight to moderate significance of effect for dwellings within the 35dB L_{A90} study area with a moderate significance of effect in the closest dwellings to the proposed windfarm. Decommissioning noise effect will be similar to that generated during the construction works but of lower effect.

11.13.10 In terms of residual effects for some receptors a new source of noise will be introduced into the soundscape and it is expected that there will be a slight to moderate significance of effect, with dwellings closest to the project with a long term moderate significance of effect.

Assessment

11.13.11I have considered that the noise assessment undertaken in the EIAR which represents a worst case scenario. I consider the methodology as set out, to be robust and identifies all the potential impacts associated with the construction and operational stages of the proposed development. I am satisfied that the proposed development would not give rise to significant impacts on the surrounding locality in terms of noise. I consider that subject to the mitigation measures as outlined in the EIAR noise associated with the development is not likely to give rise to significant effects on nearby sensitive receptors. No significant vibration effects are predicted.

11.13.12I have considered all of the written submissions made in relation to noise and vibration and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse noise and vibration impacts can be avoided,

managed and/or mitigated by measures that form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative noise and vibration impacts.

11.14 Material Assets Cultural Heritage and the Landscape

11.14.1 Chapter 15 of the EIAR addresses archaeology, architecture and cultural heritage. The assessment methodology is based on desk based research combined with site inspections /field surveys which were carried out in September 2021, December 2022, April 2023 and August 2023 comprising non-invasive visual inspections of the site GCR and TDR. The Landscape and visual impact assessment in Chapter 16 includes the appraisal of potential visual impacts on public accessible heritage receptors within the wider landscape extending for 20km in all directions.

11.14.2 The methodology and legal and planning context is clearly set out. In terms of baseline environment description, the desktop study found two recorded archaeological sites (WA014-044--) located within the site have been reclassified as 'redundant records' as it was concluded that neither are archaeological in origin. An additional 28 recorded archaeological sites, two of which are redundant records are located within lands extending for 1km in all directions from the site boundary. The majority of the archaeological sites within the study area can date from late prehistoric periods. The study area also contains a number of archaeological site types such as enclosures, huts and cairns that may conceivably date to any period from prehistory to recent centuries and the determination of their origin is not possible without recourse to systematic archaeological excavation.

11.14.3 There are no National Monuments in state ownership / guardianship or world heritage sites (including tentative list) located within 10km of the site.
There are 10 extant prehistoric archaeological monuments with potential visual alignments located in private lands within 10km of the site comprising three standing

stone pairs, six stone rows and one unclassified megalithic tomb. Table 15-6 sets out a review of their locations and orientations as recorded by Archaeological survey of Ireland.

11.14.4 There are no protected structures, ACAs or NIAH listed buildings or historic gardens/landscapes located within the site or within 1km of the site boundary. There are a number of examples located within properties within a 100m wide corridor centred on the roadways along GCR. Three previously unrecorded features of cultural heritage potential were identified within the site during field surveys. These comprise a drystone structure (with an associated field) which is of vernacular heritage interest, an upright stone of archaeological potential and a cluster of small field clearance cairns which may be of recent origin. No works are proposed at their locations.

11.14.5 No development is proposed within 10m of previously unrecorded cultural heritage constraints which will be contained within cordoned off buffer zones extending for a minimum of 10m from their outer edges for the duration of the construction phase therefore no indirect effects. Regarding grid connection and turbine delivery route construction phase effects no predicted direct effects or indirect effects on any known cultural heritage constraints.

11.14.6 In the do nothing scenario no change to the continued preservation of recorded and potential cultural heritage features within the study area. In terms of potential effects in the construction phase, direct effects on two redundant records within the site have been avoided as a precautionary measure notwithstanding that they have been scoped out from the assessment due to the absence of any evidence of the presence of archaeological sites at their locations. No predicted direct effects on the known archaeological resource. There is potential for unrecorded subsurface archaeological remains within the site. Regarding the three previously unrecorded features of cultural heritage potential identified within the site: dry stone structure with associated field which is of vernacular heritage interest, an upright stone of

archaeological potential and a cluster of four small clearance cairns which may be of recent origin no proposed development at their locations therefore no direct effects.

11.14.7In the operational phase of the proposed development will result in no predicted direct effects on the known archaeological, architectural and cultural heritage resources. Construction phase mitigation will ensure that preservation in situ (by avoidance) or preservation by archaeological excavation of any unrecorded sub-surface archaeological sites which may exist within the construction areas. Regarding indirect effects two recorded archaeological sites which have been classified as 'redundant records' and 28 archaeological sites within an area extending to 1km in all directions are addressed. Three of these external archaeological sites contain potential ritual alignment attributes that create visual sensitivity extending beyond their immediate setting, these comprising three stone rows (WA006-022002--, WA006-023001—and WA013-007---) None of these sites are directly aligned towards the proposed turbine locations and two are located within a modern forestry plantation which screens views while the third is incorporated into a field boundary wall.

11.14.8The operational phase will likely result in a range of indirect negative effects of a visual nature on the wider settings of extant archaeological sites within the environs which will range from not significant to slight in significance. Archaeological resources within an area extending for 10km from the site located within private lands not accessible to the public and none have alignments set directly towards the proposed turbine locations. Given the distances involved and the absence of recorded direct visual alignments no predicted moderate or significant indirect negative effects are predicted and any potential slight indirect effects on their wider settings will be reversed following decommissioning.

11.14.9There are no designated architectural heritage structure within the site or within 1km of its boundary and no likely significant indirect effects predicted. Regarding the three previously unrecorded features of cultural heritage potential within the site the

operational phase will result in negative, slight, long-term, indirect effects on the setting of these cultural heritage constraints. The operational phase will likely result in a range of indirect, negative effects of a visual nature on the wider settings of extant archaeological sites within the 1km study area around the site which will range from imperceptible to slight in significance. While the turbines will be visible from various other cultural heritage assets within the surrounding landscape, no likely significant indirect effects are identified. No predicted indirect effects on cultural heritage during the operational phase arising from grid connection route and turbine delivery route. Regarding the biodiversity enhancement measures there are no recorded archaeological or architectural heritage constraints located within the BEMP lands. Two of the potential cultural heritage features, an upright stone and field clearance cairns, noted during field surveys are located within an area of proposed enhancement in Carrickbrack townland. The biodiversity enhancement measures will not require any groundworks that will have the potential to result in direct effects on these potential cultural heritage features and as neither contain attributes or settings that are dependent on land use practices within their environs, no potential indirect effects resulting from the enhancement measures are predicted. Regarding the decommissioning phase, no direct effects are predicted as there are no recorded cultural heritage assets located within the footprint of the various elements of the wind farm that will be subject to decommissioning. The decommissioning phase will reverse the indirect visual effects on cultural heritage receptors.

11.14.10 Given the absence of significant effects on the recorded cultural heritage resource arising from the proposed development in combination with review of the existing and permitted windfarms within 20km the proposed development, no significant direct cumulative direct effects on the cultural heritage resource within the wider landscape are predicted. Regarding indirect impacts the proposed development will not act in combination with the reviewed developments to result in likely significant indirect negative cumulative effects on the settings or alignments of such ritual monuments within the wider landscape.

11.14.11 In terms of mitigation measures for cultural heritage impacts design mitigation includes the avoidance of all known or potential archaeological monuments and other identified cultural heritage constraints within the site and environs. A suitably qualified archaeologist will be employed to monitor construction phase groundworks under licence by the National Monuments Service (NMS) of the Department of Housing Local Government and Heritage. In the event that sites or features are identified during monitoring, the NMS to be notified and consulted to determine further appropriate mitigation which may include preservation in situ by avoidance or preservation by record through a systematic licensed archaeological excavation. Cordoned off buffer zones around the three undesignated cultural heritage constraints identified within the site extend for a minimum of 10m from the outer edges. A report on site excavations will be provided to comply with the licensing process.

11.14.12 Based on mitigation measures providing for either avoidance or preservation in situ or recording by resource excavation the proposed development will result in a potential slight / moderate range of significance of effect in the context of residual effects on the unrecorded archaeological resource. While the proposal will result in not significant to slight, indirect, negative residual effects on the settings of archaeological sites located within the surrounding landscape during the operational phase, these indirect effects will be reversed following the decommissioning phase. The EIAR concludes that the proposed development will not result in any predicted significant effect on the cultural heritage resource.

Assessment

11.14.13 I note the submissions of number of observers expressing concerns and alleging omissions of reference to historical events in the locality and perceived deficiencies

in the assessment of cultural heritage of the area. The visual effect on the setting of features of cultural heritage outlined as a significant concern. It is contended that a significant number of unclassified archaeological features remain to be discovered in the Comeragh Mountains and render the site unsuitable for development. Concern is also raised within regard to potential direct impact on Scart Bridge – protected structure WA751041.

11.14.14 I note the detailed archaeological impact assessment within chapter 15 of the EIAR acknowledges undesignated cultural heritage assets referring for instance to clues within the site's townland names referring to past human activity, e.g.: Reanadampaun Commons – Coimín Ré na dTiompáin – translated as "the level ground of the standing stones". (Table 15.8). The potential for unrecorded subsurface remains is acknowledged and mitigation measures outlined including monitoring of groundworks under license during the construction phase and in the event of identification of any sub-surface remains consultation with National Monuments Service and preservation in situ (by avoidance) or preservation by record (archaeological excavation). Regarding Scart Bridge, Protected Structure, I note that the grid option passing Scart Bridge was discounted on cultural heritage grounds. While the met mast will be accessed via Scart Bridge during construction it will involve small crew and a small aggregate crane. No works are proposed to the bridge and vehicles used will not be of an unusual load or size.

11.14.15 I note that the submission from the DHLGH did not raise any issues with the archaeological impact assessment contained within the EIAR and recommended a number of conditions to apply in the event of a permission including the engagement of a suitably qualified archaeologist to carry out pre-development archaeological texting in areas of ground disturbance, the establishment of exclusion zones around vulnerable heritage assets, incorporation of archaeological heritage constraints into the CEMP.

11.14.16. With regard to the visual impact on setting of features of cultural heritage indirect and cumulative effects will be greatest in the immediate vicinity of the site. The character of the landscape and landscape features will, to varying degrees, screen the visual effects of the development. I note that within the EIAR the operational impact on cultural heritage sites within the study area, have been characterised as ranging from not significant to slight in significance. (Table 15.13). I am satisfied that the conclusions of the EIAR are generally accurate with regard to heritage assets. The wider landscape context for individual sites and features of cultural heritage will be subject to change arising from the development however the local context for these features will not be significantly affected by the development.

11.14.17 I am satisfied that the impacts on archaeology, architecture and cultural heritage would largely be avoided managed or mitigated to an acceptable extent by measures forming part of the proposed development. I do note however that the incongruity of the proposed development within the landscape will impact on the wider setting of cultural heritage assets.

11.15 Landscape and Visual Impact

11.15.1 Chapter 16 deals with landscape and visual impact. The Landscape and Visual Impact Assessment (LVIA) is supported by the Assessment of Viewshed Reference Points Appendix 16.1, the Portfolio of Photomontages Appendix 16.2, and the Comparative Views Appendix 16.3. In terms of the study area the zone of theoretical visibility (ZTV) search area is 20km on the basis of the 185m blade tip height which is in accordance with the recommendations of the Wind Energy Development Guidelines (WEDG) 2006. Notwithstanding the 20km LVIA study area the EIAR also defines a central study area within 5km where there is a higher potential for significant impacts to occur.

11.15.2 The methodology is set out involving desktop survey, fieldwork and appraisal. Classification system for significance of landscape and visual impact is based on the

Institute of Environmental Management and Assessment (IEMA) Guidelines for landscape and visual impact assessment (2013). The assessment utilises visibility mapping, establishing a zone of theoretical visibility, and sets out representative viewpoints and photomontages and wirelines to illustrate and aid assessment.

11.15.3 The existing landscape context is described. The landform of the study area is complex comprising a variety of landscape types and features and is heavily influenced by the Comeragh and Monavullagh Mountains. The site itself located along the transitional western foothills of the Comeragh Mountains and is contained within a horseshoe ridge that opens to the south. The site's elevation ranges between c220-420m AOD with the most elevated locations along the eastern extents of the site where the terrain transitions to a more typical upland setting. Milk Hill (451mAOD) and Bleantasour Mountain (402m AOD) contain the site to the north and west respectively while an assemblage of rolling hilltop summits and elevated ridges, including Seefin (726m AOD) Coumfea (741mAOD) and Fouscoum/Kilclooney Mountain (792m AOD) contain the site to the east. The internal site infrastructure intersects three watercourse which include the Skeheens Strem, Knockavanniamountain Stream and the Colligan River. The Coumvane Stream is also located just over 400m to the south of the site.

11.15.4 The landscape to the north of the site in the surrounds of the Nire River Valley has a strong sense of enclosure as it is contained to the north east and south by the upland hills and ridges of the Comeragh Mountains. To the west of the site beyond Bleantassour Mountain the terrain transitions to a more typical low-rolling landscape context punctuated by small river valleys and streams.

11.15.5 The wider study area is as complex and varied as the central study area and contains the broader extents of the Comeragh and Monavullagh Mountains whilst the Knockmealdown Mountains are located throughout the western half of the study area. Slievenamon punctuates the northern periphery of the study area, whilst the complex and rugged coastline of County Waterford is located throughout the wider southeast quadrant of the study area. Other notable watercourses within the wider

study area include the river suir, which traverses the wider northern half of the study area and flows in a general easterly direction to the north of the Comeragh Mountains. The River Blackwater is located to the wider southwest quadrant of the study area where it flows through the settlement of Cappoquin south of the Knockmealdown foothills.

11.15.6 In terms of vegetation and landuse, the site is contained in a mix of moorland and heath, while some areas of commercial conifer forestry and agricultural farmland are located in the westernmost section of the site. The most notable areas of moorland and heath are contained throughout the most elevated locations. The landscape to the north, west and south of the site within the central study area is heavily influenced by typical transitional rural land uses including pastoral farmland and extensive areas of commercial conifer forestry. To the east of the site the central study area is influenced by upland land uses such as extensive areas of moorland and heath and rocky outcrops along the most elevated mountaintop summits. Several upland lakes surrounded by steep escarpments are also located throughout the upland portion of the central study area to the east of the site.

11.15.7 The wider study area comprises a broad mix of land uses, predominantly pastoral farmland with blocks of commercial conifer forestry. The wider study area also encompasses broad areas of the Comeragh and Monavullagh Mountains that encompass some distinctive landscape features including Counshingaun Lough on the eastern extents of the Comeragh Mountains c7.3km from the site. Linear swathes of riparian woodland often cloak the corridors of the many small streams and rivers flowing throughout the wider study area. Sections of coastline within the wider southeast quadrant of the study area comprise rugged coastal cliffs, enclosed bays and broad river estuaries. A notable number of small to medium settlements in the wider area and linear transport routes including N24, N25 N72 and N76.

11.15.8 In terms of landscape policy context and designations, as per 2006 Wind Energy Guidelines, the main windfarm site and central study area is considered to be located in a landscape consistent with both the ‘Transitional Marginal Landscapes’ and ‘Mountain Moorland’ landscape type, and aspects of ‘Hilly and Flat farmland’ on lower ground to the west. It is outlined that the design and layout is relatively

consistent with the guidance for all three landscape types but is especially so for landscape type ‘transitional marginal landscapes’ and ‘mountain moorland.’

11.15.9 In terms of setback from residential dwellings the nearest residential dwelling is 820m which fully complies with the setback distance outlined in the draft Wind Energy Development Guidelines (2019) (minimum setback 500m or 4 times tip height).

11.15.10 As per the Waterford City and County Development Plan 2022-2028 (Appendix 8 Landscape and Seascape Character Assessment), the site is contained within the western extents of the ‘upland’ landscape type and is bordered to the north, south and west by the ‘foothills’ landscape type. In terms of landscape character units, the site is located in unit ‘6A – Comeragh Uplands’ and is situated to the east of ‘5B – Ballymacarberry / Nire Valley’ and ‘5C – Tooaneena Foothills. In terms of landscape sensitivity classification the site is located within the ‘most sensitive’ designation which covers the entirety of the Comeragh and Monavullagh Mountains.

11.15.11 It is noted that within the most sensitive designation the development plan requires that “*To be considered for permission, development in or in the environs of these areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites.”*

11.15.12As regards the Waterford Renewable Energy Strategy 2016-2030 (Appendix 7) the site is in an ‘exclusion area’ for wind energy development (the other categories being ‘preferred’ and ‘open for consideration’). The EIAR notes that the current development plan designation is in stark contrast to the previous Waterford Renewable Energy Strategy, which formed part of the Waterford County Development Plan 2022-2017 (as extended), which in fact designated the site and surrounding landscape as a ‘preferred area’ in relation to wind energy development.

11.15.13Noting location of the site 6.5km from the Tipperary county boundary the EIAR considers the adjoining landscape designations within the Tipperary County

Development Plan 2022-2028. Nearby landscape character type being ‘upland and mountain’ and ‘upland’ and a ‘primary amenity area’ and ‘secondary amenity area’ occurs along the Waterford -Tipperary border. The most relevant landscape character area is that of LCA 23 – Knockmealdown Mountain Mosaic which has been designated with a ‘class 5- vulnerable’ sensitivity designation.

11.15.14 Proximate ecological designations are noted including Comeragh Mountains SAC (within 1km E), Nire Valley Woodlands SAC (2.5km N), Lower River Suir SAC (4.8km NW) and Blackwater River (Cork Waterford) SAC (5km SW).

11.15.15The Zone of Theoretical Visibility is set out at Image 16-11 (Figure 16.3 Volume IV). Observations are set out regarding the bare-ground ZTV map. Due to the location of the site within a horseshoe ridge along the western foothills of the Comeragh Mountains, many of the notable areas of comprehensive visibility within the near surrounds of the site occur immediately south and west of the proposed turbines. North of the site (south of the Nire river) the potential for visibility of all of the turbines is limited. The ZTV identifies the potential for views of between 1-6 turbines others screened by the horsehoe ridge containing the site. On the northern side of the Nire river valley the turbine visibility increases as the terrain rises towards elevated hills and ridges in the northern extents of the Comeragh Mountains. Comprehensive visibility re-emerges along the most elevated ridges of the Comeragh mountains however further north it is eliminated. Comprehensive visibility re-emerges at the northern periphery of the study area along the south facing slopes of Slievenamon.

11.15.16 In the western half of the study area a broad block of comprehensive visibility arises in the low rolling landscape between the Comeragh and Knockmealdown mountains with extensive areas of full visibility along the east facing hills and ridges at the easter extents of the Knockmealdowns. The rolling foothills and elevated hilltop summits in the eastern extent of the Knockemalown Mountains in turn screen the turbines from the wider eastern half of the study area where there are large

areas of no ZTV pattern. Comprehensive ZTV noted throughout the settlement of Ardfinnan with limited potential for turbine visibility at Newcastle village.

11.15.17 Comprehensive visibility arises throughout the southern half principally to the west of the main ridgeline within the Comeragh mountains. The potential for visibility is eliminated briefly in the wider southern half of the study area where the terrain swiftly descends from steep terrace towards the broad valley containing the N72. The potential for visibility reemerges on the northern side of this valley where the terrain rises towards a broad plateau of rolling hills and ridges oriented in a northwest by southeast orientation. Comprehensive visibility occurs along the most elevated sections of this ridgetop plateau throughout the study area and extends east along Ring peninsula.

11.15.18The eastern half of the study area has limited potential for turbine visibility. The only areas of theoretical visibility occur immediately east of the site in the upland areas of the Comeragh Mountains. The eastern half of the Comeragh mountains will be entirely screened from the proposed turbines. A brief area of theoretic visibility occurs at the western face of Fauscoum (Fáschom)(Kilclooney Mountain) the highest summit of the Comeragh Mountains. Visibility of up to 6 turbines has the potential to be afforded from here. East of Fauscoum the potential for turbine visibility is entirely eliminated.

11.15.19 Notably nearly three quarters of the study area will afford no visibility of the proposed turbines with no visibility from the settlements of Clonmel, Kilsheelan, Carrick on Suir, Kilmacthomas, Lemybrien and Cappoquin, Large areas of Dungarvan will also be entirely screened from the proposed turbines however there is some limited potential for theoretical visibility from central areas of the town.

11.15.20 Regarding visual receptors these are categorised: centres of population, transport routes, tourism recreation and heritage features, views of recognised scenic value. Table 16.6 sets out the rationale for selection of scenic designations (scenic routes and protected views) within the Waterford County Development Plan 2022-2028 and Tipperary County Development Plan 2022-2028. The selection of viewshed reference points is based on 6 categories of receptor types namely key views (from

features of national or international importance) (KV), designated scenic routes and views (SR), local community views (LCV), centres of population (CP), major routes (MR); and Amenity and heritage features (AH).

11.15.21 In terms of landscape character, value and sensitivity it is asserted that the central study area within 5km is a landscape of transition where the more typical working lowlands interface with the more sensitive and remote uplands. Due to the location adjacent to notable upland areas, the Comeragh and Monavullagh mountains and the Knockmealdown mountains there is a notable degree of scenic amenity. Several sections of scenic route designations occur throughout the central study area, within the Nire Valley to the north, along the R672, a local road to the west and along several roads in the surrounds of Kilbrien Lower in the southern half of the central study area. A number of walking, cycling and driving routes traverse the central study area, including Nire Valley trails, the Comeragh Mountain Drive and Sean Kelly Cycling Loops. With regard to the location within the Comeragh Uplands Landscape unit 6A which has the 'most sensitive' landscape sensitivity classification, it is noted that the classification transitions to broad 'low' sensitivity in the northern, southern and western extends of the central study area with some isolated areas of high sensitivity. It is accepted that the eastern extents of the central study area that comprise the remote elevated uplands of the Comeragh and Monavullagh Mountains represent a highly sensitive landscape setting however at a more localised scale, it is considered that the site and much of the immediate study area to the north, south and west represent a more typical transitional working landscape setting that comprises a varied mix of productive uses including agricultural farmland and commercial forestry.

11.15.22 It is asserted within the EIAR that the landscape of the central study area is of medium sensitivity as it is heavily influenced by the robust working landscape in the northern, southern and eastern parts of the central study area. Nonetheless some localised parts of the central study area, such as the most elevated sections of the Comeragh and Monavullagh Mountains to the east are highly sensitive landscapes.

11.15.23The wider study area comprises similar landscape characteristics and values. Some of the most sensitive landscapes include the Comeragh and Monavullah Mountains

and Knockmealdown Mountains, the coastline in the southeastern quadrant. The Waterford greenway in the southeast quadrant connecting Dungarvan to Waterford City. A variety of heritage features located in the wider study area such as stately homes, demesne landscapes, and castle remnants, a large proportion of which are located along major river corridors such as the River Suir and Blackwater. The most notable land use is pastoral farmland with several moderate settlements such as Dungarvan and Clonmel interconnected by various major route corridors including N24, N25, N72 and N76 in addition to the national railway line. Active quarries, industrial and commercial land uses, conifer forestry and wind farm development also feature. Overall, it is asserted that the landscape in the wider study area is complex and comprises a variety of landscape types, values and sensitivities. An overriding medium landscape sensitivity is assigned albeit some parts of the study area such as uplands, river valleys and coastline have a landscape sensitivity of high and in some cases very high.

11.15.24 In terms prediction of likely significant effects of the construction stage it is asserted that the proposal will have a modest physical impact on the landscape within the site as none of the proposed development features have a large footprint and land disturbance/vegetation clearance will be relatively limited. Topography and land cover will remain largely unaltered. Temporary excavations or stockpiles of material will be regraded to marry into existing site levels and reseeded appropriately in conjunction with advice from the project ecologist. Overall, there will be some construction stage effects on landscape character generated by the intensity of construction activities as well as bare ground and stockpiling of materials as set out in the CEMP. Such effects will be short term in duration and are therefore not considered to be significant. Overall construction stage landscape effects are considered to be of a high-medium magnitude.

11.15.25 As regards the operational stage, the greatest potential for landscape impacts is as a result of the change in character of the immediate area due to the introduction of tall structures with moving components. In terms of scale and function the proposal is well assimilated within the context of the central study area due to the broad scale of the landform, landscape elements and land use patterns. Some of the rolling hills, ridges and foothill landscape in the immediate surrounds of the site have a notable

working character due to the presence of commercial conifer plantations and broad areas of pastoral farmland. The proposal represents a long term but not permanent impact on the landscape and is reversible. There will be physical impacts on land cover during the operational phase, but these will be relatively minor in the context of this productive rural landscape. Whilst the proposed development represents a notable intensification of development the scale will be well assimilated within its landscape context. The magnitude of the landscape impact is deemed to be high-medium within the site and its immediate environs (c.1km) reducing to medium for the remainder of the central study area. The quality of the landscape effects is deemed negative. Beyond 5km from the Site, the magnitude of landscape impact is deemed to reduce to low and negligible at increasing distances as the wind farm becomes a proportionately smaller and integrated component of the overall landscape fabric.

11.15.26 Regarding significance of landscape effects, based on a medium sensitivity judgement and a high-medium magnitude of construction stage landscape impact, the significance of impact is considered to be Substantial-moderate / Negative / Short-term within and immediately around the site during construction, but reducing quickly with distance and broader context. Based on a medium sensitivity judgement and a high-medium / medium magnitude of operational stage landscape impact, the localised significance of impact is considered to be substantial-moderate / negative / long-term within and immediately around the site. Thereafter, significance will reduce to moderate and slight at increasing distances as the development becomes a progressively smaller component of the wider landscape fabric even in the context of higher sensitivity landscape units / features such as the Uplands to the east and west and the coastline in the southeast quadrant of the Study Area.

11.15.27 Table 16.8 sets out the context for the selected viewshed reference points (VP) and table 19.9 summarises the assessment of visual effects for each VP as illustrated in photomontage booklets Appendix 16.3 Book 1, Appendix 16.2 Book 2. Regarding impact from designated views, up to 13 viewpoints (VP1, VP3, VP8, VP10, VP11, VP16, VP22, VP23, VP24, VP25, VP26, VP27 and VP30) represent scenic view and route designations. Scenic route S8 (“north west from Dungarvan to Tooraneena on the R672 third class road north to Ballymacarbry, join R671 to

Clonmel taking the R678 and turning south for third class route through the Comeraghs") which comes within 2.5km of the nearest proposed turbine is represented by 5 viewpoints VP3, VP9, VP16, VP22 and VP26. Sections of the route form part of the Comeragh Mountain Drive and Sean Kelly Cycle. Viewpoint VP16 affords a view of the turbines within a transitional foothill context, where they will present as prominent features and at a notable scale. Whilst the turbines will generate a notable increase in the intensity of built development in this transitional landscape context, they will not appear over-scaled, nor do they appear out of place Overall, the significance of visual impact was deemed moderate at VP16, which was the highest significance of visual impact along scenic route S8. Whilst clearer views of the entire development have the potential to be afforded from other sections of this scenic route, such as viewpoint VP26, these views are afforded from a distance of over 8km, where the proposed turbines have a sub-dominant visual presence and are viewed in the context of a broad sweeping view of the Comeragh Mountains, where they do not appear out of place in terms of their scale or function. The significance of visual impact at all other representative views along the scenic route S8 was deemed to be slight or less due to the viewing distances from the site and, in some instances, the partially screened nature of the proposed development.

11.15.28 Scenic route 9 located in the northern half of the study area along a local road that traverses the River Nire Valley is represented by three viewpoints (VP8 VP10 and VP11) which also represent local community and amenity features. VP8 immediately south of the River Nire Corridor is within a contained section of the river valley. Dense mature vegetation on the sloping north facing valley sides will entirely screen the proposed development. Significance of visual impact is deemed imperceptible. VP10 and VP11 representing more elevated sections of this scenic route along the sloping terrain north of the River Nire, show clear views of the development where up to 6 turbines will be visible to varying degrees. In both views the turbines present some minor negative aesthetic effects and will marginally detract from the partially enclosed and scenic nature of the river valley context. Visual impact significance deemed moderate slight on the basis that overall scale is diminished as nearly half the turbines will be entirely screened while only glimpses of turbine blade tips will be

afforded along the transitional rolling ridge and turbines are offset from the more visually sensitive parts of the Comeragh Mountain uplands.

11.15.29 Scenic route 10 “Third class route through the Monavullagh Mountains from the R672 at Lemybrien” is represented by viewpoints, VP23 and VP24. From the village of Kilbrien, VP23 shows clear view of up to nine turbines. Overlapping blade sets generate a degree of visual clutter. Nonetheless, the turbines are well accommodated in this landscape context viewed within and along the horseshoe ridge that contains the site. Overall, the visual impact significance was deemed moderate-slight at VP23. In viewpoint VP24 from an elevated part of this scenic route in the Monavullagh Mountains the proposed moving turbine components are likely to draw the eye however, they are viewed from a further distance and present with a sub-dominant visual presence in this sweeping broad panorama that extends across the lowlands to the west and south, and towards the distant Knockmealedown Mountains. The significance of visual impact at VP24 was deemed Slight.

11.15.30 Whilst clear distant views have the potential to be afforded from other scenic designations in the wider study area, due to the distance from the site, they were all deemed to have a visual impact significance of slight or less. The proposed development generally presents well offset from some of the most visually sensitive aspects of scenic amenity from scenic route and view designation within the central and wider study area. It is not considered that there will be significant visual impacts at scenic route and scenic view designations throughout the study area.

11.15.31 Regarding impact on local community views, up to 14 views were chosen to represent the local community (VP6, VP8, VP9, VP10, VP11, VP12, VP13, VP14, VP16, VP18, VP19, VP21, VP22 and VP23). The highest impact significance ‘Substantial moderate’ occurs at VP19 which is one of the nearest potential views afforded of the proposed development representing the local community at the mouth of the horseshoe ridge that contains the site. Visibility of all 10 turbines and considerable scale and dominant visual presence where turbine cloak the lower and upper reaches of the horseshoe ridge to the north. Whilst the turbines will be one of the most distinctive features of the view to the north, they do not present with any

notable sense of overbearing and do not appear over-scaled when viewed in combination with the surrounding broad landscape features and land uses. Furthermore, the turbines will not block or obstruct the view of the more elevated uplands viewed to the east.

11.15.31 Four viewpoints VP14, VP16, VP18 and VP21 were classified with a residual visual impact significance of moderate where they do not present as over-scaled or incongruous. All other viewpoints representing local community views within the study area were deemed to have an impact significance of moderate slight or less. While some clear views of the entire development will be afforded from some parts of the study area especially the southern half of the central study area, the turbines generally appear in a legible manner do not appear over scaled in the context of the wider Comeragh and Monavullagh Mountains. The perceived scale of the overall development is notably diminished in the northern half of the central study area where up to half the proposed turbines will be screened by the horseshoe ridge that contains the site. The Proposed Development will present in a dominant manner at some of the nearest residential receptors located to the south of the site. Whilst some local receptors will experience borderline significant impacts (Substantial-moderate), it is not considered that the proposed development will generate significant visual impacts at local community receptors within the study area.

11.15.33 Six viewpoints (VP2, VP5, VP9, VP20, VP23 & VP29) represent centres of population within the central and wider study area. It is noted that many of the larger settlements within the study area including Clonmel, Kilmacthomas, Carrick-on-Suir, Cappoquin and Lemybrien have no potential for visibility. The villages of Kilbrien and Tooraneena, located to the south and west of the site, respectively, have potential for visibility. Kilbrien represented by viewpoint VP23 shows a clear view of nine turbines from the centre of the village. The proposed turbines will likely draw the eye; however, they do not present as spatially overbearing, nor are they viewed in some of the more sensitive viewing aspects afforded from this settlement. Negative aesthetic effects associated with the overlapping of turbine blade sets are noted. The

EIAR states that the turbines will not appear out of place in terms of their scale or function and a significance of visual impact of moderate-slight assigned.

11.15.34 Viewpoint VP20 shows a more screened view from the settlement of Tooraneena within 5km west of the site. The nacelles of up to three of the turbines have the potential to be viewed from here, whilst partial views of blade sets also have the potential to be afforded from the outskirts of this small settlement. The proposed development is viewed opposite to the main aspect of visual amenity afforded at the settlement of Tooraneena, which relates to views of the Knockmealedown Mountains further to the west. Thus, VP20 was classified with a visual impact significance of slight. All other centres of population represented by viewpoints within the wider study area were deemed to have a visual impact significance of slight or less, which is principally influenced by their distance from the site combined in some instances by the high degree of vegetation in the direction of the site. It is asserted that no significant visual impact will occur in respect of centres of population within the central and wider study area.

11.15.35 Major routes within the study area include the N24, N25, N72 and N76. Both the N25 and N26 within the study area will be entirely screened from the proposed development by the surrounding upland terrain. Limited potential visibility is afforded from the brief sections of both the N24 and N72. VP1 represents the N24 national primary route and affords a brief view of the proposed turbines from a distance of just under c.18km. The brief and distant view of the proposed development will have little impact on the visual amenity of this route, and significance of visual impact was deemed slight-imperceptible. The nearest major route to the proposed development is the R672 regional road which passes just over 3.8km west of the Site at its nearest point and is represented by viewpoints VP22 and VP26. A section of this regional road within the central study area is also a designated scenic route and forms part of the Sean Kelly on-road cycling routes and the Comeragh Mountain drive. Whilst relatively clear views of the proposed turbines will be afforded from some sections of this regional road, they will often be viewed in the context of a broad panoramic view of the Comeragh and Monavullagh Mountains and present in a clear and comprehensible manner. The turbines will not block or obstruct the view of these upland areas and present on the sloping transitional lands further west of

the more visually sensitive upland areas. As a result, both VP22 and VP26 were classified with a slight significance of visual impact. The EIAR concludes that the proposed development will not give rise to any significant visual impact in respect of major route receptors.

11.15.37 Regarding heritage and amenity features represented by 17 viewpoints, (VP2, VP3, VP4, VP5, VP7, VP8, VP9, VP10, VP11, VP15, VP17, VP22, VP23, VP24, VP26, VP28 and VP29) relating to scenic routes or centres of population. VP7, VP15 and VP17 from elevated parts of the surrounding landscape. VP7 along the summit of Knockanaffirn South forms part of the Nire Valley looped walking trails and represents one of the most elevated views afforded from these trails. The view will increase the intensity of built development in this upland setting however the turbines are offset from principal ridgeline of the Comeragh mountain and present in transitional terrain downslope of the more visually sensitive landscape features. In the broad sweeping view, the turbines will only occupy a brief visual envelope of fewer than 20 degrees. Classification of moderate significance was applied. VP15 and VP17 from the Comeragh Mountains and Knockmealdown Mountains summits. VP 15 was classified as moderate slight significance and VP17 classified as slight. With regard to significance of visual impact at all other amenity and heritage receptors within the study area ranges between moderate slight and imperceptible.

11.15.38 Regarding the overall significance of effects the range is between substantial-moderate to imperceptible. The immediate surrounds at local residential receptors to the south of the horseshoe ridge that contains the site will experience the most notable visual effects. Whilst the turbines will be dominant features in this local landscape context, impacts beyond this reduce quickly to ‘Moderate’ and ‘Moderate-slight,’ as the horseshoe ridge and surrounding upland landscape context tends to screen and partially contain the overall perceived scale of the proposed wind farm development. When clearly visible from surrounding receptors outside of the immediate site context, the proposed turbines generally present in a compressible manner and are well accommodated in the broad landscape context. Location in a contained part of the western extent of the Comeragh Mountains, will ensure that the development will be entirely screened in the eastern half of the study area. Parts of the wider southern and northern half of the study area will afford no visibility of the

proposed development. The turbines will generate some borderline significant visual impacts in a very localised part of the central study area immediately south of the site. Beyond this, visual impacts will reduce rapidly throughout the central and wider study area, and in over 66% of the 20km study area, there will be no visibility of the proposed turbines. Thus, it is not considered that the proposed Coumnagappul Wind Farm will result in significant visual impacts at surrounding receptors.

11.15.39 Regarding cumulative impacts the nature of cumulative visibility with regard to wind farms, existing, proposed and consented is analysed and set out in table 16.11 based on viewpoints VP1-VP30. Cumulative ZTV map Fig 16.4 shows that the proposed Coumnagappul windfarm has the potential to be viewed in isolation for only 4.8% of the study area, while 35% of the study area will have no visibility of any existing permitted or proposed turbines. A further 31% of the study area will be screened from the proposed Coumnagappul development while up to 28.3% of the study area will have the potential to be afforded view of the proposed Coumnagappul turbines in combination with other exiting permitted and proposed windfarms.

11.15.40 In relation to cumulative visibility it is asserted that despite potential for cumulative views the windfarms within present as distinctly separate given their notable offset distances. Regarding views from scenic routes, combined views will increase the intensity of built development however the views are typically offset from the main aspects of visual amenity, generally toward more elevated uplands. There is limited potential for notable negative cumulative effects such as stacked or ambiguous views.

11.15.41Table 15.11 shows notable potential for sequential views reflecting the high degree of linear receptors within the study area which principally comprise scenic routes, waymarked walking and hiking trails, cycling routes and major route corridors. With regard to waymarked trails, cycling routes and scenic routes, the majority of these typically traverse elevated terrain where broad views of the surrounding landscape are afforded. In relation to cumulative impacts with other

forms of development there are no other large scale developments within the vicinity of the site.

11.15.42 Overall it is stated that the proposal will result in an intensification of wind energy development within the landscape context where wind energy development is an established feature within the wider study area. The potential to be viewed in combination with other existing, permitted and proposed development, arises however, it is well offset from other wind farm developments and, thus, will present with no notable negative cumulative aesthetic effects. A cumulative impact no greater than low with other existing and permitted developments and no greater than Medium with existing permitted and proposed wind farm developments.

Assessment of landscape and visual impact

11.15.43 The proposed development of a ten turbine windfarm in this rural upland context will have the potential to have a significant visual effect on the receiving environment. With regard to understanding this effect, I am satisfied that the ZTV maps provide a fair representation of the visual scenario. The significance of visual impact arises from both the sensitivity of receptors and the magnitude of visual impact, and an appreciation of these factors is key to understanding the visual and landscape implications of the proposed development.

11.15.44 The Planning Authority submission raised concerns with regard to the visual impact noting location within a “no go / exclusion area” designated as “most sensitive” in terms of landscape character with very distinctive features and a very low capacity to absorb new development without significant alterations of existing character over an extended area and citing material contravention of policies UTL 13 and L02 of the Waterford County Development Plan 2022-2028. The Fáilte Ireland submission also raises concerns with regard to the visual impact noting a perceived deficiency in terms of the assessment of amenities in the local area and an underestimation within the EIAR of the likelihood of significant negative visual impacts on the character of

the area. Third party submissions question the independence of the LVIA and note that a number of the more scenic viewpoints along the Comeragh Drive, panoramic locations along the Nire Valley and Comeragh plateau have not been represented.

11.15.45 There is no doubt that the proposed development will have a significant visual impact when viewed locally and from distances up to and beyond 20km from the site. The height, scale and nature of the development ensures that it will be highly visible. Residential receptors in the immediate locality will experience the most notable visual impact. Furthermore, the local landscape with its scenic designations / scenic routes, amenity trails is considered to be of high sensitivity. While the EIAR acknowledges the notable scenic amenity an overriding medium landscape sensitivity is assigned. While subjectivity comes into play when considering the implications of the proposal on the aesthetic value of the landscape it is my view that the proposed development would cause a significant adverse impact on the visual and landscape qualities of the site. I would take dispute the characterisation of the site as a transitional working landscape where the proposal would result in sub dominant visual presence. I do not agree with the medium landscape sensitivity judgement, and I would take issue with the conclusions with regard to the visual effects from a number of the submitted viewpoints.

11.15.46 I note in terms of local community views VP 19 is given a “substantial moderate” impact significance and VP 18 and VP 14 “moderate” impact significance within the EIAR. I would not agree that the turbines do not present a sense of overbearing and in my view the development will be incongruous in the landscape. I also note that the application does not address the visual impact of ancillary development including for instance the construction of 25.43km of new internal access tracks which will in itself result in a significant visual impact, particularly in the immediate locality.

11.15.47 With regard to the viewpoints representing designated views I consider that the impact is in a number of cases understated for example VP 16 representing scenic route 8 is assigned a moderate significance of visual effect. VP24(scenic route 10)

and VP 10 and VP11(scenic route 9) are assigned “moderate slight” significance and VP22 (scenic route 8) and VP26 are given a “slight significance”. In all cases I consider that the negative aesthetic effects cannot be considered moderate slight, and I consider that the significance of visual impact is entirely understated. I do not agree with the argument put forward in respect of a number of the viewpoints that the proposed turbines present a sub-dominant visual presence and, in my view, the proposed development would be obtrusive and would cause significant damage to the landscape and visual qualities of the area.

11.15.48 I conclude that the proposed development would be incongruous within the landscape and the proposal would be at odds with the provisions of the Waterford County Development Plan 2022 as it relates to designated sensitive landscapes. I consider that having regard to the location of the site, the scale and siting of the proposed development does not have the capacity to significantly reduce or mitigate the significant adverse landscape and visual impact that would arise.

11.16 Material Assets Utilities, Telecommunications, Aviation

11.16.1 Chapter 17 relating to material assets addresses power and electrical supply, telecommunications and aviation, water supply and foul infrastructure. The potential for the project to impact on roads and traffic is addressed in chapter 14.

11.16.2 Regarding telecommunications and communication the potential effects from the project on existing telecommunication services considered include electromagnetic interference, broadcast communications, domestic received and other signal types used for communication and navigation systems. In terms of the baseline environment searches of utility services to identify areas where major assets exist as well as consultations with telecommunications stakeholders. No major utilities infrastructure is located within the site. Underground utility and electricity services

are located within the road affected by Grid connection route and turbine delivery route enabling works will involve temporary removal of utility poles.

11.16.3In terms of the do nothing scenario no change would arise in terms of impact on material assets. In terms of the construction phase impacts the proposed development will connect to the existing Dungarvan 110kV substation. Where the grid connection route interacts with existing watermains and it is necessary to divert the mains, the utility provider will turn off supply and pipe will be removed and replaced. The TDR involves temporary removal of utility poles and lighting columns as detailed in appendix 2.2. The construction and grid connection route and accommodation works for TDR will likely result in disruption to water supply and power supply in the locality. Such effects will be brief to temporary non-significant negative effects.

11.16.4The TDR and GCR works could result in traffic disturbance and damage to road infrastructure. Delivery of large turbine components has the potential to affect telecommunication lines for short periods. Potential for electromagnetic interference from wind turbines arises during the commissioning and operational phases. Regarding Aviation no impacts are anticipated following consultation with IAAs air navigation service provider, Cork Airport and Waterford Airport.

11.16.6 Regarding the operational phase, the potential for negative effects on material asserts is minimal. The direct effect of electricity generated by the proposed development will give rise to a reduction in the quantity of fossil fuels required for electricity generation across the state. This will result in a long term slight positive impact on renewable energy resource and will contribute to reducing Ireland’s dependence on imported fuel resources.

11.16.7 Regarding telecommunications and broadcasting, consultations were conducted regarding electromagnetic interference with the relevant national and regional broadcasters, fixed line cable and other operators. A *Three* telecommunications mast is located 4.5km north of T2. No potential impacts are identified. There is

potential for slight negative long term effects to broadcasting services depending on wind speed and direction.

11.16.8 Regarding aviation, given the distance 37km to Waterford Airport the site falls outside potential for electromagnetic interference with radio navigation signals.

11.16.9 Regarding the decommissioning phase the potential impacts on utility infrastructure are similar to those associated with the construction phase but of reduced magnitude. Potential for brief disconnection of overhead lines during the decommissioning phase if large turbine components are required to be removed from the windfarm site. The on-site substation building will be taken in charge by Eirgrid / ESB which will have a long term positive impact on electricity infrastructure provision in the area. The underground grid cable will remain in situ and will become part of the national grid resulting in long term slight positive impact on electricity infrastructure provision in the area. No decommissioning related impacts arise on telecommunications and broadcasting interests in the area. No likely effects predicted on aviation during the decommissioning phase.

11.16.10 In terms of mitigation existing services along the grid connection route have been predicted through desktop survey and will be confirmed in pre-construction surveys. Cable will be laid above or below services were feasible to minimise need to divert. Where interruption arises, residents and businesses will be informed in advance. TDR will be carried out outside of regular travelling /commuting hours to minimise delay and traffic impacts

11.16.11Regarding telecommunications mitigation by design avoids impact on telecommunication links. Regarding potential for broadcasting to be affected at receivers close to the site during operation phase the setback of over 800m to

nearest dwelling mitigates potential impacts. Interference to service from temporary disconnection will be temporary and will be communicated in advance.

11.16.12Regarding aviation, in line with standard practice, coordinates and elevations for turbines will be supplied to the IAA at the end of the construction phase. Aeronautical obstacle lighting scheme will be agreed with IAA.

11.16.13 Regarding cumulative effects the proposed Dyrick Hill wind farm will share a section of their proposed turbine delivery route with Coumnagappul windfarm and also proposes to connect to Dungarvan 110kV substation. The GCR coincides for both developments. There is potential for cumulative effects on affected residential and commercial properties arising from interruption of services along TDR. Any interference to services will be brief and will be communicated in advance. There is potential for cumulative effects on residential and commercial properties affected by interruption of services on GCR. Such effects will be brief to temporary and non-significant negative effects. Cumulative impact with regard to telecoms and aviation are unlikely to arise.

11.16.14 Regarding residual effects, the proposed onsite substation and underground grid route cable will be taken in charge by Eirgrid or ESB following decommissioning providing a long term slight positive residual impact on electricity infrastructure. Following mitigation, no significant residual effects are expected on telecommunications and broadcasting or aviation.

Traffic and Transport

11.16.15 Chapter 14 addresses traffic and transportation and is supported by Appendix 2.1 Construction Environment Management Plan and Appendix 2.2 Turbine Delivery Route Assessment. The assessment uses a combination of field surveys, automated traffic counter (ATC) data, desktop studies of potential haulage routes and local roads department consultation. Traffic count data was obtained from 7-day traffic count surveys conducted in June 2021. Consultations were conducted with TII and Waterford County Council. Existing traffic volumes on roads in the study area are shown in table 14-2 and annual average daily traffic (AADT) figures were projected

to a proposed construction commencement year of 2026 from 2020, 2021 and 2022 source data in accordance with NRA project appraisal guidelines for National Roads Unit 5.5 Link-Based Traffic Growth forecasting, 2011 and TII project Appraisal Guidelines for National Roads: Unit 5.3 -Travel demand projections 2021.

11.16.16 A 24 month construction programme is envisaged which represents the worst case traffic volume assessment. An indicative construction programme on which vehicle trip distribution calculations are based is shown in Table 14.3. Assessment of the proposed main entrance which is an existing Coillte forestry access on an undesignated local road (80kph speed limit applies) found sightline visibility to be constrained to the south by forestry and vegetation. It is proposed to widen the bell mouth and clear forestry and vegetation within the 160m visibility splays in both directions to facilitate oversized turbine delivery vehicles and achieve minimum sightline distances. Met Mast access will be via the proposed internal windfarm access road and existing agricultural track to be upgraded. Construction haul routes are shown on Figure 14.3.

11.16.17 Regarding grid connection route (GCR)(Figure 2.4) necessary works to Dungarvan substation will involve the installation of ducting, joint bays, drainage and ancillary infrastructure and the running of cables predominantly along the existing road network. Works will be progressive with closure of short lengths for short periods. It is expected that full road closures will be put in place to facilitate cabling works in combination with lane closures, partial closures and stop/go systems. One bridge crossing (WD-0N72)007-00) is required within the N72 by way of horizontal directional drilling (HDD) under the bridge structure. A detailed methodology for HDD operations is set out CEMP Appendix 2.1. Watercourse crossings are detailed in Table 14-6.

11.16.18 The turbine delivery route (TDR) is presented in Figure 2.3 Volume IV. Access route will involve loads departing Port of Waterford (Belview) travelling along the N29, taking the third exit on Slieverue Roundabout to continue on the N29. Loads will proceed to the Luffany roundabout taking the first exit onto the N25. Loads will travel west on the N25 and N72. Loads will depart the N72 and head north on the R672. Loads will depart the R672 right near Touraneena onto the L5119 and

continue northeast on the L5119 to the proposed site entrance. Accommodation works are required along the TDR and are set out in Table 14.7. A route survey review of the delivery route for turbine Abnormal Indivisible Loads (AIL) including detailed swept path analysis is contained in Appendix 2.2. and includes details of remedial works either physical works or traffic management interventions that are required to accommodate the predicted loads. Such works include removal of existing utilities and overhead lines including re-routing resulting in temporary disruption to power and telecommunications services. Vehicle modifications including suspension raises and increased ground clearance at vertical constraint locations are identified at Sweep Crossroads (POI 18). No structural reinforcement of existing structures is predicted to be required to facilitate the delivery of proposed loads along the TDR.

11.16.19. Regarding potential effects in the 'do nothing scenario' there will be no change to the current road network and traffic patterns in the area. In the construction phase the main sources of traffic will arise from HGVs transporting materials to and from the site, including road making materials, concrete, building materials drainage/ducting materials, cabling, electrical components and excavated material, HGVs transporting machinery, fuel tricks, light goods vehicles transporting workers, oversized loads transporting turbine components. The increased traffic has potential to lead to delay and disruption, road safety issues, soiling of the public road and damage to road surface. Grid connection works will involve traffic construction impacts and road/lane closure impacts. Operational phase impacts will be limited given infrequent attendance for routine monitoring / compliance. Traffic in the decommissioning phase (expected to take no longer than 6 months) will be significantly less than the construction phase due to considerably lower numbers of vehicle movements.

11.16.20. Table 14.8 shows total construction phase vehicle trips including grid connection (worst case scenario) and their distribution across the 24 month construction project. It is estimated that the construction phase will lead to 42,742 additional HGV trips (two-way) over the duration of the construction works. Calculations of HGV movements associated with the construction indicate an average daily increase of 92 HGV trips per day over a construction period of 24 months increasing to an average

of 195 HGV trips per day during the peak month (6th month). An average workforce of 30 persons is anticipated increasing to 40 in peak periods. This is estimated to give rise to increase of LGV traffic of 44 trips per day on average rising to 56 trips during peak construction periods (months 6&7). The combined average daily increase is 161 trips per day throughout the construction programme. The predicted AADT during construction phase of the project is shown in Table 14.9. The impact on predicted future traffic on the surrounding road network is also shown. The volume and vehicle trips generated by construction are presented in Table 14-11 and Image 14-2.

11.16.21. In terms of windfarm construction alone, 14,995 additional HGV trips are estimated. HGV movements will result in in an average daily increase of 30 HGV trips over the course of the construction programme with peak months 8 nd 9 where average HGVs will rise to 42. An average workforce of 25 persons increasing to 40 during peak periods. This is calculated to give rise to an average daily increase of 38LGV tips per day over a construction period of 24 months. Peak months for LGV trips occur in months 7 to 12 inclusive where the average daily LGV rises to 50. The combined HGV and LGV average daily increase for the wind farm site excluding grid connection work is 68 trips per day throughout the construction programme. AADT during the construction phase of the main windfarm site is presented in Table 14-12. The works will result in a less than 1% temporary increase in traffic volumes on the N25 and approximately 1.3% increase in traffic on the N72. The R672 and unclassified local roads will see a more significant increase. The percentage increases on unclassified local road network are high (214% Seapark) however the baseline levels are very low. The unclassified local road network will continue to operate within carrying capacity. Negative adverse effects on the receiving environment associated with construction works are considered to be short term in duration and moderate in significance.

11.16.22. Regarding grid connection works the volume and distribution of vehicle trips generated are presented in Table 14-13 and Image 14-3. An estimated 6,382 additional HGV trips (two-way) over the construction works equating to an average daily increase of 7HGV trips per day over the course of the construction programme. The pattern of HGV trips will remain relatively steady throughout and does not

exceed 14 HGV trips per day on average over a 24month duration. Workforce associated with grid connection works is expected to give rise to a daily increase of 3 LGV trips per day, remaining steady and not exceeding 6 per day on average over 24 month period. The combined HGV and LGV average daily increase is 10 trips per day and does not exceed 21 trips per day. The predicted AADT during construction phase of grid connection works is presented in table 14-14 which also shows impact on predicted future traffic. The works will result in less than 0.5% temporary increase in total traffic volumes on the N72 and R672. The unclassified local roads near Seapark and Knockarana will see a higher temporary increase of circa 33% and 10%.

11.16.23. Impacts along TDR will be limited to specific locations where accommodation works are required and on occasions where large turbine component deliveries are brought to the site. Negative or adverse effects associated with TDR are considered to be temporary and slight in duration and slight to moderate in significance. Regarding the operational phase trip generation will be minimal and effects on the receiving environment are considered to be neutral in terms of quality long term in duration and imperceptible in significance. Impacts during decommissioning will be similar to those in construction but of much lower magnitude.

11.16.24 In terms of mitigation measures the construction will be carried out in accordance with the CEMP (Appendix 2.1) including Traffic Management Plan to be agreed with the roads authority and An Garda Siochána. Grid connection works to be carried out in accordance with road opening license. Mitigation during turbine component delivery will include timing off peak at night-time, programme of deliveries, garda escort, reinstatement and consultation. Mitigation during operation will include maintenance of sightline visibility at entrances. Mitigation measures adopted for decommissioning will be in line with those identified for the construction phase. EIAR concludes that the implementation of mitigation will ensure that residual impacts are minimised and are summarised in Table 14.15.

11.16.25. Regarding cumulative impact existing and proposed wind energy projects were considered. It is noted that there is potential for cumulative impacts in the event of concurrent construction of Dyrick Hill windfarm. The applicant is committed to

phasing significant construction activities to avoid major traffic disruption on the surrounding road network. Regarding grid connection works co-ordination between contractors will minimise disruption and reduce the need for additional road openings restoring normal road capacity efficiently. Potential cumulative effects on the road network are anticipated to have a temporary impact and moderate in significance during the construction phase. No cumulative impacts arise during operation or decommissioning. No cumulative impacts identified with regard to operational windfarm at Woodhouse or Tierney Wind Turbine. Potential negative cumulative effects on road network arising in respect of the permitted windfarm at Knocknamona and Solar PV development at Mothel Co Waterford (304651) can be mitigated by appropriate scheduling thereby ensuring no significant cumulative effects.

11.16.26. The EIAR concludes that there are no significant impacts expected on the receiving environment as a result of construction, operation or decommissioning of the project. A slight to moderate short term negative impact on the existing road network during the construction phase is predicted if adequate mitigation measures are not implemented. Following mitigation residual impacts during the construction phase will be reduced and are not expected to exceed slight to moderate in significance. Impacts during operation and decommissioning are considered imperceptible to not significant. There are no significant cumulative impacts expected on the receiving environment.

Assessment of Material Assets Telecommunications and Aviation, Traffic and Transportation

11.16.27. With regard to air navigation the Irish Aviation Authority (IAA) recommends that in the event of permission applicant to agree on the provision of aeronautical obstacle warning lights scheme for windfarm development. As regards water infrastructure Uisce Eireann (UE) outlines no objection in principle however request

that a confirmation of feasibility with regard to building near / over UE assets should be addressed prior to a grant of permission.

11.16.28. I consider that the information provided in respect of material assets including telecommunications, built services and utilities in the EIAR documentation is sufficient to allow the impacts of the proposed development on material assets to be fully assessed. I am satisfied that the impacts identified on material assets are not significant, and where they could potentially occur, they can be avoided, managed or mitigated by measures forming part of the proposed scheme and by relevant conditions. I am, therefore, satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on material assets of the area.

11.16.29. With regard to traffic and transport third parties question the capacity of the road network to cater for the traffic arising and outline concerns with regard to disruption, health and safety concerns and negative impacts on established residents, businesses, amenities and vulnerable road users. The Planning Authority report also noted concerns regarding carrying capacity of the local road network and outlined that in the event of a permission a special financial contribution should apply in respect of works to the public roads in the vicinity of the site to be undertaken by the local authority. Submission from Transport Infrastructure Ireland (TII) notes the requirement for a plan led approach with regard to the delivery of renewable generation assets and national grid infrastructure. The Department of Transport submission outlines requirement for liaison with local road authority and compliance with standards to minimise impact on the public road.

11.16.30. Having regard to the nature and scale of the proposed development it is clear that the greatest potential for negative impact on traffic and transportation arises during the construction phase. I consider that construction traffic management can, as proposed, be addressed through engagement with the local authority, timing of HGV movements, use of convoy systems, etc. Given the short term and temporary nature of the impacts, I consider that a robust Construction Traffic Management Plan could adequately address the concerns raised by observers. With regard to potential

conflicts between wind farm construction traffic and local road users, I note the relatively limited length of time related to the construction period, the sparsely populated rural nature of the area and the low level of traffic currently utilising the roads. While clearly there are likely to be short-term temporary negative impacts on the receiving environment due to construction traffic, these impacts are of a type that lend themselves to effective mitigation through a comprehensive CTMP and suitable planning conditions.

11.16.31. I consider that the provision of pre-condition surveys and reinstatement works and with the imposition of bonds for the satisfactory completion of such works, by way of condition, will ensure the road network is protected. Given the temporary nature of construction works and the negligible level of operational traffic, I consider that it has been demonstrated that the road network can accommodate such traffic. I consider that the short-term negative impacts of construction traffic would be outweighed by the long-term positive impacts of a renewable energy project. Operational traffic will be minimal and as regards the decommissioning phase works will be similar to the construction phase, but to a lesser extent. I am satisfied that, subject to compliance with a decommissioning plan to be agreed with the planning authority, the traffic impacts associated with the decommissioning phase would not be significant.

11.16.32. I have considered all of the written submissions made in relation to traffic and transportation and the relevant contents of the file including the EIAR. I am satisfied that the potential for significant adverse impacts on traffic and transportation can be avoided, managed and/or mitigated by measures that form part of the proposed scheme, the proposed mitigation measures and through suitable conditions. I am therefore satisfied that the proposed development would not have any unacceptable direct, indirect or cumulative impacts on traffic and transportation.

11.17 Interaction

11.17.1 Chapter 18 of the submitted EIAR addresses interactions of actions between key environmental aspects. Table 17-1 provides a matrix detailing key interactions and inter-relationship between the key environmental aspects of the proposed project including wind farm, grid connection route (GCR) and turbine delivery route (TDR). A description of the key aspects interactions is provided in Table 17.1 as follows.

- Soils geology and hydrogeology, air quality and climate, traffic and transportation and population and human health.
- Soils geology & hydrogeology, air quality & climate, biodiversity, ornithology and traffic and transport,
- Noise and vibration, soils, geology and hydrogeology, air quality and climate, traffic and transportation, population and human health.
- Hydrogeology and water quality and flood risk, soils geology and hydrogeology, biodiversity, ornithology, traffic and transportation.
- Soils, geology and hydrogeology, hydrology & water quality and flood risk, population and human health.
- Hydrology and water quality, biodiversity and ornithology
- Population & human health, biodiversity, ornithology, landscape and visual impact.
- Soil, geology and hydrogeology, noise and vibration, biodiversity, ornithology, hydrology & water quality and flood risk assessment
- Air quality and climate, population and human health.
- Noise & vibration, landscape and visual impact, shadow flicker, population and human health.
- Population and human health, landscape and visual material assets, telecommunications and aviation, archaeological architectural and cultural heritage.
- Soil geology and hydrogeology, hydrology and water quality, population and human health, biodiversity, ornithology, archaeology architectural and cultural

heritage, visual and landscape, material assets, telecommunications and aviation.

It is asserted that significant impacts associated with the interactions of environmental effects will be avoided due to the implementation of mitigation measures.

11.17.2 I have considered the interrelationships between the factors and whether this might, as a whole affect the environment, even though the effects would be acceptable on an individual basis. In the assessment of each individual environmental aspect, I have considered the likelihood of significant effects arising as a consequence of interrelationship between factors. The interactions are addressed under individual topic headings and generally I do not foresee any likelihood of interactions of a number of aspects giving rise to significant effects on the environment. With regard to biodiversity and ornithology, soil geology and hydrogeology the habitat loss arising from the loss of 7.25ha of dry heath and 5.94ha of wet heath habitat, which is an Annex 1 habitat of national and international importance under the Habitats Directive will affect the foraging and breeding of a number of birds of conservation interest. The site is also hydrologically, geologically and geographically linked to Annex I habitats within the adjoining Comeragh Mountains SAC. Potential impacts to habitats and birds will not be mitigated and significant adverse effects cannot be ruled out.

11.17.3With regard to the issue of peat stability it is noted that in the absence of a detailed risk assessment there is insufficient information with regard to potential for landslide and potential interactions with environmental aspects in particular biodiversity, population and human health.

11.17.4With regard to landscape and visual impact, it is considered that the harmful visual impact on the sensitive landscape cannot be avoided or mitigated, and significant adverse impact cannot be ruled out. Interactions with material assets, cultural heritage and population and human health are noted.

11.18 Reasoned Conclusion on Significant Effects

11.18.1 Having regard to the assessment of environmental information on file, in particular to the EIAR and submissions from the Planning Authority, prescribed bodies and observers in the course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

Population and human health – Short term positive economic and employment impacts during construction phase, with long-term positive economic effect during operation resulting from clean high quality energy supply, community funding, amenity provisions and investment. Slight negative impact is anticipated from traffic noise, volume and dust during construction. With the application of mitigation, largely comprising best practice and implementation of a Construction Environmental Management Plan, no significant residual effect upon human health / safety is expected. Mitigation measures set out in the EIAR will ensure that the project will not result in significant impacts upon population in relation to shadow flicker and noise.

Landscape and Visual Impact One of the most significant effects arising relates to the visual impact arising from the erection of 10 no wind turbines of a total tip height of 185m. This will be most discernible in the immediate locality particularly within 5km resulting in adverse impact on the amenities of the area. Significant adverse landscape and visual impacts arise which would be dominant and obtrusive on visually and environmentally sensitive landscape of notable scenic amenity and including several scenic route designations. The landscape has been identified as being unsuitable for wind energy development. Adverse landscape and visual impacts cannot be mitigated avoided or otherwise addressed.

Biodiversity Ornithology – Potential significant effects on habitats, mammals, bats, birds and aquatic ecology in the construction phase would be mitigated by the implementation of the mitigation measures contained in the Environmental Impact Assessment Report, including the Construction Environmental Management Plan, good practice construction measures, timing of vegetation removal, water pollution

prevention measures, provision of bat boxes, use of buffer zones, blade feathering and buffering, biosecurity measures and the appointment of an Ecological Clerk of Works and Environmental Manager. Habitat loss associated with construction will impact on dry and wet heath habitat, which is an Annex I habitat of national and international importance under the Habitats Directive and will affect the foraging and breeding area of bird species of conservation interest. Potential impacts to habitats and birds would not be mitigated by the implementation of the measures proposed in the Habitat Management Plan as set out in the Environmental Impact Assessment Report. Having regard to the methodology of surveys, insufficient information has been submitted to allow for a complete assessment with regard to habitat removal, habitat degradation, displacement and collision risk. Development of wind turbines at the height scale and siting proposed would likely pose a significant risk to bird species of conservation concern and erode the quality of the environment for sensitive bird species.

Lands, Soils, Water, Air and Climate: Potential significant effects on hydrology hydrogeology and soils would be mitigated by a series of best practice construction and management pollution prevention measures outlined in the EIAR and Construction Environment Management Plan. Use of buffer zones, erosion control and pollution prevention measures. Positive air quality and climate impacts arise in the operational phase due to the offsetting of fossil fuels by the generation of renewable energy. Construction noise will be mitigated by measures outlined in the CEMP. Noise will be mitigated by curtailment of turbine operation if required. In the absence of a detailed peat stability risk assessment there is insufficient information to allow for a complete assessment of potential landslide hazard.

Material Assets - No significant residual effects are predicted to result with respect to material assets including land use, telecommunications, electricity networks, air navigation, quarries, and utilities (gas, water and waste), arising from the project. Regarding traffic and transportation direct negative, short terms impacts arising during the construction phase will be appropriately mitigated by way of Traffic Management Plan and Construction and Environmental Management Plan.

Archaeology and cultural heritage Potential for the presence of unrecorded archaeological features on the site will be mitigated by way of archaeological monitoring and providing for preservation in situ or by record. In terms of visual

impact on cultural heritage assets the incongruity of the development within the landscape will not be mitigated.

12.0 Appropriate Assessment –

12.1 Article 6(3) of the Habitats Directive

The requirements of Article 6(3) as related to screening the need for appropriate assessment of a project under part XAB, section 177U and 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section. The areas addressed are as follows:

• Compliance with Article 6(3) of the EU Habitats Directive

• Screening the need for appropriate assessment

• The Natura Impact Statement and associated documents

• Appropriate assessment of implications of the proposed development on the integrity each European site

12.2 Compliance with Article 6(3) of the EU Habitats Directive

The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal

will not adversely affect the integrity of the European site before consent can be given.

The proposed development is not directly connected with or necessary to the management of a European site and therefore is subject to the provisions of Article 6(3).

12.3 Screening Determination. (Refer to Appendix 1)

In accordance with Section 177U(4) of the Planning and Development Act 2000 (as amended) and on the basis of objective information it has been concluded that the proposed development comprising the Coumnagappul windfarm, grid connection route GCR and turbine delivery route TDR is likely to have a significant effect on the Lower River Suir SAC, Blackwater River (Cork /Waterford) SAC, Dungarvan Harbour SPA, Mid Waterford Coast SPA and the Comeragh Mountains SAC in view of the sites' Conservation Objectives and therefore Appropriate Assessment (stage 2) under Section 177V of the Planning and Development Act 2000 is required on the basis of the effects of the project 'alone':
Following the screening process, as detailed in Appendix 1, it has been determined that appropriate assessment is required as it cannot be excluded on the basis of objective information that the proposed development of the Coumnagappul windfarm either individually or in combination with other plans or projects will have a significant effect on the following European sites:
Lower River Suir SAC (002137)
Blackwater River (Cork /Waterford) SAC (002170)
Dungarvan Harbour SPA, (004032)
Mid Waterford Coast SPA (004193)
Comeragh Mountains SAC (001952)

The possibility of significant effects on other European sites has been excluded on the basis of objective information. The following European sites have been screened out for the need for appropriate assessment:
Nier Valley Woodlands SAC (0006668)
Lower River Suir SAC (002137)
Glendine Wood SAC (002324)

Mmeasures intended to reduce or avoid significant effects have not been considered in the screening process.

12.4 The Natura Impact Statement.

The application included a Natura Impact Statement "Proposed Coumnagappul Wind Farm Report to Inform the Appropriate Assessment Process (Screening and Natura Impact Statement)" dated October 2023.
The NIS examines and assesses potential adverse effects of the proposed development on the following European Sites
Lower River Suir SAC
Blackwater River (Cork / Waterford) SAC
Dungarvan Harbour SPA
Mid Waterford Coast SPA

It is noted that the appropriate Assessment Screening within the applicant's report screens out the Comeragh Mountains SAC from further assessment within the NIS on the basis of the conclusion that while located within 740m from the closest turbine, there is no pathway for effect as "No annex 1 habitats within the site, no hydrological connectivity between the site and the SAC. Upstream from any hydrological /hydrogeological connectivity to TDR and GCR."
I note that as set out in the submission of the DHLGH the site is "*hydrologically, geologically and geographically linked to the Annex I habitats within the adjoining Comeragh Mountains SAC, being effectively an ex situ extension of the habitats*

outside the SAC boundary. The connectivity and continuity of the Comeragh Mountains will therefore be impacted by removing these habitats."

I note that the applicant has in the response to submission of the DHLGH refuted the contention that habitats within the site represent Annex I habitat condition and disputes connectivity to the SAC and set out their argument with regard to the concept of "Shadow protection."

Having assessed the matter I consider that the DHLGH submission regarding hydrological, geological and geographical connectivity to the Comeragh Mountains SAC cannot be ignored and gives weight to the potential for the extensive drainage and excavation works proposed (development footprint and road construction 25.43km) to result in drying out of habitats beyond the immediate footprint of the works. The potential ecological consequences on the conservation interests of the Comeragh Mountains SAC therefore requires consideration as part of the Appropriate Assessment.

The NIS is supported by associated reports submitted with the application, including inter alia:

- Habitats and Vegetation Surveys
- Marsh Fritillary Survey
- Avifauna surveys
- Aquatic Surveys, including white clawed crawfish surveys, freshwater pearl mussel survey, biological water quality surveys.
- Hydrological and Geotechnical Surveys
- Decommissioning/Construction Environmental Management Plan
- Habitat Management Plan
- Surface Water Management Plan

The NIS concludes that in the light of the best scientific knowledge in the field, all aspects of the proposed development which, by itself, or in combination with other plans or projects, which may affect the relevant European sites have been considered.

The NIS contains information which the competent authority, may consider in making its own complete, precise and definitive findings and conclusions and upon which it is capable of determining that all reasonable scientific doubt has been removed as to the effects of the Proposed Development on the integrity of the relevant European sites.

In the light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the competent authority is enabled to ascertain that the Proposed development, alone or in combination with any other plan or project, will not adversely affect the integrity of any of the European sites concerned.

Summary of consultations and submissions

A number of third parties question the screening out of the Comeragh Mountains SAC. As outlined above the submission from the DHLGH refers to the site area being hydrologically, geologically and geographically linked to the Annex I habitats within the adjoining Comeragh Mountains SAC. The Department expresses concern with regard to the impact of drainage leading to the drying out of habitats well beyond the immediate footprint of the works. The potential for impact on adjoining wetland habitats such as blanket bog and wet heath is questioned. The Department recommends that the Board should fully consider these impacts particularly any potential to adversely impact on such habitat within the Comeragh Mountains SAC.

The applicant in response refutes ecological connectivity stating:

“It is important to clarify that because the windfarm site and Comeragh mountains SAC are located within the same hydrological area (waterbody catchment IE-SE-17C010100), geological formation(Devonian Old Red Sandstones and peaty soils) or

physical locality (at the Comeragh Mountains in County Waterford) does not make them “linked” from an ecological connectivity perspective.

Hydrological connectivity referred to by the Department is unclear. The proposed Development is located at the foothills of the Comeragh Mountains. The Colligan river is within the Windfarm site and originates within the foothills. The river does not originate from the lakes (Oligotrophic waters) which are Qualifying Interests of the SAC, nor does it support the floating river vegetation communities representative of “Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260]

Other than these qualifying interests, the SAC is not designated for any other habitats or species which have attributes associated with river habitats. The proposed development will not have an effect on the existing drainage or hydrology of the site.

In relation to the drainage design which is based on SuDS principles and will mimic the natural drainage pattern and manage water as close to source as possible. In relation to the potential for hydrogeological connectivity between the proposed development and the Comeragh Mountains SAC, reference is made to Table 11-12 in Chapter 11- Soils, Geology and Hydrogeology which sets out depth of groundwater strike encountered during site investigation. Notably much of the 4m deep trial pits did not encounter groundwater, and from examination of the borehole profiles, it is evident that the water ingress associated with soil volume water as opposed to water in the bedrock. Additionally, it is noted that the competent bearing strata is typically encountered at the site at between 2m and 4m. As such the requirement for extensive excavation is limited for the purpose of construction of turbine foundations. The potential for drawdown of water will therefore be localised and would not extend to the SAC which is located circa 700m away.

I consider that on a precautionary basis the potential for significance effect on wet heath and active raised bog habitats within the SAC should be screened in and considered within a Natura Impact Statement. In the event that the Board were to

consider a grant of permission I would recommend that this would need to be addressed.

Having reviewed the documents, submissions and consultations as submitted I am satisfied that the information allows for a complete assessment of any adverse effects of the development, on the conservation objectives of the following European sites, alone, or in combination with other plans and projects.

Lower River Suir SAC

Blackwater River (Cork / Waterford) SAC

Dungarvan Harbour SPA

Mid Waterford Coast SPA

The possibility of significant effects on other European sites has been excluded on the basis of objective information. The following European sites have been screened out for the need for appropriate assessment:

- Nier Valley Woodlands SAC (0006668)
- Lower River Suir SAC (002137)
- Glendine Wood SAC (002324)

12.5 Appropriate Assessment of the implications of the proposed development.

As outlined above in the absence of further detailed information with regard to the effect the development on the conservation objectives of the Comeragh Mountains SAC, alone or in combination with other plans or projects it is not possible to conduct an appropriate assessment or to conclude that the proposed development will not adversely affect the integrity of the Comeragh Mountains SAC.

The following is a summary of the objective scientific assessment of the implications of the project on the qualifying interest features of the other European sites using the best scientific knowledge in the field. All aspects of the project which could result in

significant effects are assessed and mitigation measures designed to avoid or reduce any adverse effects are considered and assessed.

I have relied on the following guidance:

• DoEHLG (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, National Parks and Wildlife Service. Dublin

• EC (2002) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EC

• EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC.

European Sites

The following sites are subject to Appropriate Assessment

Lower River Suir SAC
Blackwater River (Cork / Waterford) SAC
Dungarvan Harbour SPA
Mid Waterford Coast SPA

As noted, the Comeragh Mountains SAC has not been screened in within the NIS and requires further consideration.

A description of the other Natura 2000 sites and their conservation and qualifying interests are set out as follows including table setting out the qualifying interests: I have examined and evaluated the Natura 2000 data forms as relevant and the conservation objectives and supporting documents for these sites, available through

the NPWS website. I am satisfied that in combination effects have also been considered and adequately assessed.

European Sites and Qualifying Interests.	
European Sites	**Qualifying Interests**
Lower River Suir SAC (002137)	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Taxus baccata woods of the British Isles [91J0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355]
Blackwater River (Cork/Waterford) SAC (002170)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410]

	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355] Trichomanes speciosum (Killarney Fern) [1421]
Dungarvan Harbour SPA (004032)	Great Crested Grebe (Podiceps cristatus) [A005] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Red-breasted Merganser (Mergus serrator) [A069] Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Knot (Calidris canutus) [A143] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Redshank (Tringa totanus) [A162] Turnstone (Arenaria interpres) [A169]

	Wetland and Waterbirds [A999]
Mid Waterford Coast SPA (004193)	Cormorant (Phalacrocorax carbo) [A017] Peregrine (Falco peregrinus) [A103] Herring Gull (Larus argentatus) [A184] Chough (Pyrrhocorax pyrrhocorax) [A346]
Comeragh Mountains SAC (001952)	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Northern Atlantic wet heaths with Erica tetralix [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] Blanket bogs (* if active bog) [7130] Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Hamatocaulis vernicosus (Slender Green Feather-moss) [6216

Aspects of the proposed development.

The main aspects of the proposed development that could adversely affect the conservation objectives of European sites include:

- Release and transport of suspended solids (from earthworks, management of spoil, dewatering activities and watercourse crossings during construction and decommissioning phases of the windfarm and GCR) and entry into the various watercourses which flow through or are adjacent to the site.
- Release and transport of hydrocarbons and cementitious materials to receiving surface waters during construction and decommissioning phases.

- Potential loss or fragmentation of foraging habitat of importance to European sites
- Potential disturbance impacts from construction.
- Potential spread of invasive species.
- Potential collision risk.

The following sections address the potential for adverse effects on the conservation objectives of the above listed European sites that have been brought forward to Stage 2 assessment on foot of the screening for Appropriate Assessment undertaken. The attributes and targets for the habitats / species as per site specific conservation objectives have been reviewed in the assessment of the proposed development against nominated attributes and targets and summarised in table below.

Mitigation measures are outlined in Section 4.4 of the NIS including the majority of which are considered to represent best construction practice measures which include:

- Mitigation by avoidance and design
- Project ecologist / Ecological clerk of works to ensure successful implementation of mitigation measures. Monitoring and regular reporting
- Liaison with IFI.
- Establish water baseline and bi weekly monitoring during construction and decommissioning and yearly during operational period.
- Invasive species eradication and management.
- Environmental manager to ensure effectiveness and operation of drainage and mitigation measures.
- Silt traps and fencing, settlement ponds.
- Minimise disturbance to habitats or flora.
- Removal of vegetation and scrub and trimming of trees along TDR to be undertaken outside of bird breeding season.

- Construction during hours of daylight. Limited operations during nighttime hours.
- Toolbox talk
- Plant and equipment maintenance.
- Pollution incident control response.
- Buffer zone to watercourses with exception of crossings
- Watercourse crossings, Silt protection controls, Isolation of works areas. Permanent roadside drainage to include interceptor drains, swales, check dams and stilling ponds. Buffering of runoff.
- Wheel wash facilities.
- Concrete management
- Management of hydrocarbons,
- Refuelling
- Spill control
- Welfare utilities to be managed by licensed waste disposal contractor.
- Standing water treatment.
- Excavated materials to be reused on site where possible.
- HDD of crossing of Skeheens stream to be completed in dry period July-September to avoid salmon spawning season.
- GCR River riverine crossings.
- Pre -construction otter survey to be undertaken by a qualified ecologist and in consultation with NPWS.
- Inspection of erosion and sediment control measures
- Settlement ponds to be left in place during the operational period.

Summary of Appropriate Assessment of Adverse effects on the integrity of the Lower River Suir SAC (002137) Windfarm site and GCR Summary of key issues that could give rise to adverse effects • Water Quality – hydrological connectivity via Shanballyanne and Nier River which drain to the Suir River (SAC is c5km downstream). • Disturbance of QI species - Emissions • Spread of invasive species.					
		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objective To maintain or restore favourable conservation condition. Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Atlantic salt meadows (Glauco-Puccinellietalia maritimae)[1330]	To restore favourable conservation condition	No – A coastal habitat -present in the lower reaches downstream of Waterford City. The closest mapped habitat is c82km downstream of the site.	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Meditteranean salt meadows (Juncetalia maritimi0[1410]	To restore the favourable conservation condition	No – A coastal habitat -present in the lower reaches downstream of Waterford City. The closest mapped habitat is c82km downstream of the site.	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Watercourses of plain to montane levels with Ranunculion fluitantis and Callitricho-	To maintain the favourable conservation condition	Distribution of this habitat and subtypes unknown within Lower River Suir SAC. Occurs in lowland and depositing tidal rivers. Habitat was not recorded within or downstream during aquatic surveys. Potential degradation of water due to	Mitigation outlined in EIAR and CEMP	Without mitigation relevant projects may be constructed at the same time within the same	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on

Batrachion vegetation [3260]		sedimentation gives rise to water quality deterioration. Alteration of floodplain area.		catchment. Cumulative deterioration in water quality, floodplain alteration.	this habitat in view of the conservation objectives.
Hydrophilious tall herb fringe communities of plains and of the montane to alpine levels [6430]	To maintain the favourable conservation condition	Distribution of this designated habitat unknown but considered to occur in association with some riverside woodlands, areas of open marsh or wet grassland within the SAC. Taking the precautionary approach this habitat could be downstream of the proposed site. Reduction of water quality due to sedimentation has potential to affect habitat type.	Mitigation outlined in EIAR and CEMP	Without mitigation relevant projects may be constructed at the same time within the same catchment. Cumulative deterioration in water quality, floodplain alteration.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives
Old sessile oak woods with Ilex and Blechnum in the British Isles [91AO]	To restore the favourable conservation condition	No - Area of designated habitat mapped shown on Map 4 Conservation Objectives NPWS 2017. The habitat does not occur within or in the vicinity of the proposed works and there is no connectivity between this terrestrial habitat and the proposed works,	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)[91EO]	To restore the favourable conservation condition	No Area of designated habitat mapped shown on Map 5 Conservation Objectives NPWS 2017. The habitat occurs downstream of the proposed works, downstream of Carrick on Suir. The closest habitat is c 55km downstream.	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.

Taxus baccata woods of the British Isles [91JO]	To restore the favourable conservation condition	No - Distribution unknown further survey required. Occurs in Cahir park upstream of the proposed works, The habitat does not occur within or in the vicinity of the proposed works and no connectivity between terrestrial habitat and works,	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Freshwater Pearl Mussel (Margaritifera margaritifera)[1029]	To restore the favourable conservation condition	No. The conservation objective applies to the Cloadiagh freshwater pearl mussel population. The Clodiagh catchment is upstream of the main channel of the River Suir with a direct path distance of 17.5km between the Clodiagh/Suir confluence and the closest hydrologically linked node. No hydrological connectivity.	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
White-clawed crayfish (Austropotamobius pallipes)[1092	To maintain favourable conservation condition	The species occurs extensively on the river Suir and its tributaries. Map 7 of conservatgoin objectives (NPWS 2017). Mapped area occurs 14km downstream from the site Degradation of water quality and habitat hetrogeneny could reduce carrying capacity of watercourses downstream for white clawed crayfish.	Mitigation outlined in EIAR and CEMP	Potential cumulative effect on water quality in the absence of migiatgion.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Sea Lamprey (Petromyzon marinus)[1095]	To restore the favourable conservation condition	Species known to occur in lower stretches of the river suir (NPWS 2017). Lamprey not recorded during aquatic surveys in the vicinity of the site or upstream of Clonmel in the Suir during 2018 IFI surveys. Potential negative effect resulting in degradation of water quality in River Suir and habitat hetrogeneity	Mitigation outlined in EIAR and CEMP	Potential to contribute to cumulative effect on water quality and habitat heterogeneity.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.

Brook Lamprey (Lampetra planeri)[1096]	To restore the favourable conservation condition	Species known to occur in lower stretches of the river suir (NPWS 2017). Lamprey not recorded during aquatic surveys in the vicinity of the site or upstream of Clonmel in the Suir during 2018 IFI surveys. Potential negative effect resulting in degradation of water quality	Mitigation outlined in EIAR and CEMP	Potential to contribute to cumulative effect on water quality and habitat heterogeneity	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
River Lamprey (Lampetra fluviatilis)[1099]	To restore the favourable conservation condition	Species known to occur in lower stretches of the river suir (NPWS 2017). Lamprey not recorded during aquatic surveys in the vicinity of the site or upstream of Clonmel in the Suir during 2018 IFI surveys Potential negative effect resulting in degradation of water quality	Mitigation outlined in EIAR and CEMP	Potential to contribute to cumulative effect on water quality and habitat heterogeneity	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Twaite shad (Alosa fallax fallax)[1103]	To restore the favourable conservation condition	Known to occur in lower stretches of the River Suir and largely associated with estuaries	Mitigation outlined in EIAR and CEMP	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
- Salmo salar (Salmon) [1106]	To restore the favourable conservation condition	Species know to occur in lower stretches of the River Suir. Salmon recorded 7km downstream of the site in the Nier river during 2013 surveys by IFI. Potential for negative effect resulting from degradation of water quality and habitat heterogeneity.	Mitigation outlined in EIAR and CEMP to avoid water pollution	Potential to contribute to cumulative effect on water quality and habitat heterogeneity	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects in view of the conservation objectives

- Otter Lutra lutra [1355]	To maintain the favourable conservation condition	Otters utilise freshwater habitats from estuaries to headwaters. No otter resting or breeding sites recorded within the site during surveys. There is potential for otter to be present. Potential for negative effect in the event of emissions resulting in reduction in fish biomass availability	Ex situ habitat loss. Instream works isolated. GCR 3 river crossings. Design mitigation. Pre construction otter survey by qualified ecologist. If holt or couch identified within 150m exclusion procedures in consultation with NPWS. Mitigation outlined in EIAR and CEMP to avoid water pollution. Crossings to be completed in dry period July - September Water baseline monitoring biological water quality. Environmental Manager to monitor implementation of mitigation measures.	Potential to contribute to cumulative effect on water quality and habitat heterogeneity	Mitigation by design and water quality measures ensure that adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of the **Lower River Suir SAC** and no reasonable doubt remains as to the absence of such effects.					

Summary of Appropriate Assessment of Adverse effects on the integrity of the Blackwater River (Cork/Waterford SAC) GCR crossing Ballynagulkee River

Summary of key issues that could give rise to adverse effects

- Water Quality – hydrological connectivity.
- Disturbance of QI species
- Spread of invasive species.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objective To maintain or restore favourable conservation condition. Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Estuaries	To restore favourable conservation condition	No –A tidal habitat -present in the lower reaches downstream of Cappoquin. The closest mapped habitat is c18km downstream of the proposed watercourse crossing.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Mudflats and sandflats not covered by seawater at low tide [1140]	To restore the favourable conservation condition	No – A tidal habitat -present in the lower reaches upstream of Youghal. The closest mapped habitat is c34km downstream of the proposed watercourse crossing	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Perennial vegetation of stony banks [1220]	To maintain the favourable conservation condition	No Distribution of this habitat and subtypes unknown. Unlikely that this coastal habitat is in the vicinity or directly downstream of GCR works.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of

					the conservation objectives.
Salicornia and other annuals colonising mud and sand [1310]	To maintain favourable conservation condition	No Distribution of this habitat and subtypes unknown. Unlikely that this coastal habitat is in the vicinity or directly downstream of GCR works.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]	To maintain the favourable conservation condition	No A tidal habitat present in lower reaches, upstream of Youghal. Closest mapped habitat is c34km downstream of watercourse crossing.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Mediterranean salt meadows (Juncetalia maritimi) [1410]	To maintain favourable conservation condition	No A tidal habitat present in lower reaches, upstream of Youghal. Closest mapped habitat is c35km downstream of watercourse crossing.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion	To maintain favourable conservation condition	Yes. Distribution unknown. Occurs in lowland depositing and tidal rivers. Habitat not recorded within or downstream of the site however potentially downstream. Emissions to Finisk river could give rise to water quality impacts due to sedimentation.	Mitigation outlined in EIAR and CEMP to avoid water pollution Project ecologist employed for duration of construction	Potential to contribute to cumulative deterioration in water quality, river flow.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.

vegetation [3260]			and decommissioining. Monitoring Communication with IFI Biological water quality baseline and monitoring Invasive species eradication Silt traps Fencing Settlement ponds. Pollution incident control Hydrocarbon management		
Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	To restore the favourable conservation condition	No - habitat does not occur within the vicinity of works nd no connectivity between this terrestrial habitat and the proposed works.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	To restore the favourable conservation condition	No - Riparian habitat present in the lower reaches downstream of Cappoquin. Closest mapped habitat is c18km downstream of the proposed watercourse crossing	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this habitat in view of the conservation objectives.
Margaritifera margaritifera (Freshwater Pearl Mussel) [1029]	To restore favourable conservation condition	No Conservation objective applies to FPW populations in two tributaries, Owentaraglin and Allow. Both upstream of the proposed grid connection works. No direct hydrological connection	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of

					the conservation objectives.
Austropotamobius pallipes (White-clawed Crayfish) [1092]	To maintain favourable conservation condition	No - Species limited to Awbeg river. In a different catchment upstream from the Finisk/Blackwater confluence therefore no hydrological connectivity.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Petromyzon marinus (Sea Lamprey) [1095]	To restore favourable conservation condition	Yes Finisk river contains physical habitat suitable for lamprey spawning and larval habitat and ammocetes are present downstream of the site. In the event of emissions to Finisk river potential negative effect resulting in degradation of water quality and habitat heterogeneity thereby reducing carrying capacity for lamprey	Mitigation outlined in EIAR and CEMP to avoid water pollution	Potential to contribute to cumulative degradation of water quality and habitat heterogeneity.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Lampetra planeri (Brook Lamprey) [1096]	To maintain favourable conservation condition	Yes River / Brook lamprey species have been recorded downstream of the GCR watercourse crossing with closest record 5,5km downstream of works. The Finisk river contains physical habitat suitable for lamprey spawning and larval habitat and ammocetes are present downstream of the site. In the event of emissions to Finisk river potential negative effect resulting in degradation of water quality and habitat heterogeneity thereby reducing carrying capacity for lamprey	Mitigation outlined in EIAR and CEMP to avoid water pollution	Potential to contribute to cumulative degradation of water quality and habitat heterogeneity.	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Lampetra fluviatilis (River Lamprey) [1099]	To maintain the favourable conservation condition	Yes River / Brook lamprey species have been recorded downstream of the GCR	Mitigation outlined in EIAR and CEMP to avoid water pollution	Potential to contribute to cumulative degradation of water quality and	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the

		watercourse crossing with closest record 5.5km downstream of works. In the event of emissions to Finisk river potential negative effect resulting in degradation of water quality and habitat heterogeneity thereby reducing carrying capacity for lamprey		habitat heterogeneity.	absence of effects on this species in view of the conservation objectives.
Alosa fallax fallax (Twaite Shad) [1103]	To restore the favourable conservation condition	No. Largely associated with estuaries. No record in the vicinity of GCR works	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Salmo salar (Salmon) [1106]	To maintain the favourable conservation condition	Yes Species occurs throughout the SAC. Salmon recorded c6km downstream in Finisk River. In the event of emissions potential degradation of water quality and habitat heterogeneity thereby reducing carrying capacity for salmonids.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Yes Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Lutra lutra (Otter) [1355]	To restore the favourable conservation condition	Yes. Potential for species to be present downstream of proposed works. Potential for negative effect resulting from degradation of water quality Finisk River.	Mitigation outlined in EIAR and CEMP to avoid water pollution	Potential to contribute to cumulative degradation of water quality and habitat heterogeneity.	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Trichomanes speciosum (Killarney Fern) [1421]	To maintain the favourable conservation condition	No. Two locations known both upstream of the proposed GCR works	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects in

					view of the conservation objectives
Overall conclusion: Integrity test Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of the **Blackwater River (Cork/Waterford SAC)** and no reasonable doubt remains as to the absence of such effects.					

Summary of Appropriate Assessment of Adverse effects on the integrity of the Dungarvan Harbour SPA Site and GCR
Summary of key issues that could give rise to adverse effects

- Water Quality – hydrological connectivity via Colligan River. Kilkeanymountain stream draining to Skeheens Stream
- Disturbance of QI species
- Spread of invasive species.

		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objective To maintain or restore favourable conservation condition. Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Great Crested Grebe (Podiceps cristatus) [A005]	To maintain favourable conservation condition	No - Site designated for overwintering great crested grebe. No record of wintering species within 19km2 of site. Grebe is associated with the coast, large loughs and slow flowing rivers unlikely to be present in the site	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Light-bellied Brent Goose (Branta bernicla hrota) [A046]	To maintain favourable conservation condition	No - SPA designated for wintering of light bellied Brent geese. No records of wintering species within 10km2 of the site. Primarily coastal species unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives

Shelduck (Tadorna tadorna) [A048]	To maintain favourable conservation condition	No - SPA designated for wintering shedluck. No records of wintering species within 3km of the site. Proposed windfarm unsuitable for this winter visitor that primarily winter on the coast in sheltered estuaries and tidal mudflats. Unlikely to be present within the site	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Red-breasted Merganser (Mergus serrator) [A069]	To maintain favourable conservation condition	No - SPA designated for wintering red breasted mergeniser. No records of wintering species within 10km2 of the site. Species largely coastal and generally found near estuaries. Unlikely to be present within the site	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Oystercatcher (Haematopus ostralegus) [A130]	To maintain favourable conservation condition	No - SPA designated for wintering oystercatcher. No records of wintering species within 10km2 of the site. A clastal wader unlikely to be present within the site	Mitigation outlined in EIAR and CEMP to avoid water pollution	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Golden Plover (Pluvialis apricaria) [A140]	To maintain favourable conservation condition	Yes - SPA designated for wintering golden plover. Records of wintering species within 10km2 of the site. Species feed on inland improved agricultural feeds and on coastal habitats. Identified within the study area. Birds appear to use the site in nonbreeding season. NIS predicts Worst case scenario – a loss of 13.19ha of suitable haitat which equate to 12% of	Mitigation outlined in EIAR and CEMP	Dyrick Hill – likely cumulative effect on golden plover in terms of land take and displacement / disturbance, Collision rate increase of 0.136 per annum to 6.346 per annum	Refer to DHLGH submission with regard to ex situ effect Issues with regard to nocturnal survey, Collision risk calculations, Lighting effects and monitoring systems.

		total available suitable habitat for the species within the red line boundary. Loss of wintering and/or foraging habitat will be long term slight effect locally and long term imperceptible to slight at a county level. Windfarm site is not within foraging range (core range 3km and max range 11km) of Dungarvan. Predicted number of collisions (assuming 99.8% avoidance) is 0.136 per year (0.004% of the Dungarvan Bay SPA population and 0.008% of the national population.) – collision risk will be a long term imperceptible effect.		increasing county local population loss by 0.18% (0.004% increases to 0.184% per annum)	
Grey Plover (Pluvialis squatarola) [A141]	To maintain favourable conservation condition	No - SPA designated for over wintering grey plover. No records of wintering species within 10km2 of the site. An exclusively coastal species unlikely to be present within the site	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Lapwing (Vanellus vanellus) [A142]	To maintain favourable conservation condition	No SPA designated for over wintering lapwing. Records of wintering species within 10km2 of the site but none within 2km2. Large flocks regularly recorded in a variety of habitats, including most of the major wetlands, pasture and rough land adjacent to bogs. Species was not recorded during the two year bird surveys.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Knot (Calidris canutus) [A143]	To maintain favourable conservation condition	No - SPA designated for over wintering knot. No records of wintering species within 10km2 of the site. Coastal wader, unlikely to be present within the site. .	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on

					this species in view of the conservation objectives.
Dunlin (Calidris alpina) [A149]	To maintain favourable conservation condition	No - SPA designated for over wintering dunlin. No records of wintering species within 10km2 of the site. Coastal wader, unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Black-tailed Godwit (Limosa limosa) [A156]	To maintain favourable conservation condition	No - SPA designated for over wintering black-tailed godwit. Records of wintering species within 10km2 but none within 2km2 of the site. Wader that uses both coastal and inland wetlands, Breeds on upland and lowland bogs, damp pastures grazed lightly by cattle with mixed sward height and scattering of rush or tussocks is a favoured habitat. Species not recorded in two year surveys. Unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Bar-tailed Godwit (Limosa lapponica) [A157]	To maintain favourable conservation condition	No - SPA designated for over wintering bar tailed godwit. No records of wintering species within 10km2 of the site. Coastal wader and generally found near estuaries, unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Curlew (Numenius arquata) [A160]	To maintain favourable conservation condition	No - SPA designated for over wintering curlew. Records of wintering species within 10km2 but none within 2km2 of the site. Wader that uses both coastal and inland wetlands, Breeds on upland and	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on

		lowland bogs, wet grassland and unimproved/semi improved pasture. In addition to bogs, damp pastures grazed lightly by cattle with a mixed sward height and scattering of rush or tussocks is a favoured habitat. Species not recorded in two year surveys. Unlikely to be present within the site.			this species in view of the conservation objectives
Redshank (Tringa totanus) [A162]	To maintain favourable conservation condition	No - SPA designated for over wintering redshank. No records of wintering species within 10km2 of the site. Mainly coastal wader though it will use lakes and large rivers. Unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Turnstone (Arenaria interpres) [A169]	To maintain favourable conservation condition	No- SPA designated for over wintering turnstone. No records of wintering species within 10km2 of the site. Coastal wader - unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives.
Wetland and Waterbirds [A999]	To maintain favourable conservation condition of the wetland habitat Conservation objective refers to retaining stable wetland habitat not less than 2,219ha other than that occurring from natural patterns of variation	Yes - Direct hydrological connection from the project to the SPA. All waterbodies on site drain into the Colligan River which forms hydrological link to Dungarvan Harbour SPA – Instream distance 17km from the site to the SPA. Downstream of the GCR the Colligan River via an existing	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives

		clear span bridge where Himalayan Balsam is present. Habitat type is identified as a resource for the regularly occurring migratory birds that utilise it.			
Overall conclusion: Integrity test In light of the submission from DHLGH with regard to survey and assessment methodology in respect of Golden Plover it is not possible to complete a finding of no adverse effect on integrity in terms of the assessment of effect on the Dungarvan Harbour SPA.					

Summary of Appropriate Assessment of Adverse effects on the integrity of the Mid Waterford Coast SPA Site and GCR Summary of key issues that could give rise to adverse effects • Disturbance of mobile QI species • Collision risk					
		Summary of Appropriate Assessment			
Qualifying Interest Feature	**Conservation Objective To maintain or restore favourable conservation condition. Main relevant targets and attributes**	**Potential Adverse effects**	**Mitigation measures**	**In combination effects**	**Can adverse effects on integrity be excluded ?**
Cormorant (Phalacrocorax carbo) [A017]	To restore favourable conservation condition	No - No record of wintering species within 10km2 of site. Cormorant is associated with the coast, large rivers and lakes. Not recorded during two year surveys and unlikely to be present in the site	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Peregrine (Falco peregrinus) [A103]	To restore favourable conservation condition	Site is not within core foraging range of mid Waterford **Coa**st **SPA** for peregrine. It is within the maximum foraging range for nest sites, Peregrine have been identified within 10km2 of the site. and within the site during field surveys. Peregrines require tall cliff faces or manmade structures which resemble these for breeding. No such habitats or structure occur in the study area. Predicted numbers of collisions assuming avoidance is 0.004 per year. Impact of collision risk will be long term imperceptible effect.	Mitigation outlined in EIAR and CEMP	NIS considers cumulative effect of Dyrick Hill windfarm with regard to land take displacement /disturbance. In terms of cumulative collision risk will be slight from rate of 0.001 per annum to 0.002 per annum.	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives

Herring Gull (Larus argentatus) [A184]	To restore favourable conservation condition	Yes - Herring full have been identified within10km2 of the site and within the site itself through field surveys. Recorded on five occasions during VP surveys. A total of 150 in potential collision risk. No scope for breeding on site and habitats on site largely unsuitable for foraging. Birds recorded flying through the site Worst case scenario loss of 0.11ha of suitable habitat which equates to 1.095 of total available suitable habitat. Disturbance / displacement will be short term slight effect. Predicted number of collisions (assuming avoidance) is 0.002 per year. Impact of collision will be long term imperceptible effect.	Mitigation outlined in EIAR and CEMP	NIS considers Dyrick hill windfarm red to have likely cumulative effect on peregrine in terms of land take and displacement/disturbance. Regarding collision risk the cumulative increase will be slight from rate of 0.001 per annum to 0.05 per annum.	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives
Chough (Pyrrhocorax pyrrhocorax) [A346]	To maintain favourable conservation condition	No records of the species within 10km2 of the site. It is associated with the coast and was not recorded during the two year bird surveys of the site and is therefore unlikely to be present within the site.	Mitigation outlined in EIAR and CEMP	None predicted	Adverse effects on site integrity can be excluded as there is no doubt as to the absence of effects on this species in view of the conservation objectives

Overall conclusion: Integrity test
Following the implementation of mitigation, the construction and operation of the proposed development will not adversely affect the integrity of the **Mid Waterford Coast SPA** and no reasonable doubt remains as to the absence of such effects.

12.6 Appropriate Assessment Conclusion

The proposed Coumnagappul windfarm has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act as amended. Having carried out a screening for Appropriate Assessment of the project. It was concluded that it may have a significant effect on the following European Sites: Comeragh Mountains SAC, Lower River Suir SAC, Blackwater River (Cork Waterford) SAC, Dungarvan Harbour SPA, Mid Waterford Coast SPA. Consequently, an appropriate assessment was required of the implications of the project on the qualifying features of these sites in light of their conservation objectives.

Following an appropriate assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects, would not adversely affect the integrity of the Lower River Suir SAC, Blackwater River (Cork Waterford) SAC, Mid Waterford Coast SPA in view of their conservation objectives. This conclusion is based on a complete assessment of all aspects of the proposed project, including an assessment of in combination effects with other plans and projects, and there is no reasonable scientific doubt as to the absence of adverse effects. On the basis of the information provided with the application, including the submitted Natura Impact Statement, and concern raised in a submission from the DHLGH with regard to the methodology applied to baseline bird surveys, and potential impact on Comeragh Mountains SAC I am not satisfied that the information allows for a complete assessment of any adverse effects of the development on the conservation objectives of European site Dungarvan Harbour SPA (4032) and Comeragh Mountains SAC, alone or in combination with other plans and projects. The Board is, therefore, precluded from granting planning permission for the proposed development.

Given the substantive issues set out elsewhere in this report in relation to development plan policy for the area, I do not propose to include the adequacy of the NIS as a reason for refusal. Should the Board wish to consider further the matter of the NIS, Further Information could be sought from the applicant to address concerns

raised in the submission from the Department of Housing Local Government and Heritage.

Recommendation

I recommend that permission is refused for the reasons and considerations set out hereunder.

Reasons and Considerations

1. Having regard to Policy Objective UTL 13, which seeks to facilitate and encourage proposals for renewable energy generation '…developed fully in accordance with the Waterford Renewable Energy Strategy (RES), the wind energy designation map (Appendix 2 of the RES), the Waterford Landscape and Seascape Character Assessment (LSCA) undertaken to inform this Development Plan and the National Wind Energy Guidelines, or any subsequent update/ review of these', and given the proposed development site falls within an area identified as 'Exclusion Zone' on the RES Wind Energy Strategy Maps for new wind energy developments, it is considered that, notwithstanding broad policy support for the development of wind energy in the county area, by reference to European, national, regional and local policy, the specific policy context as set out in the Waterford City and county Development Plan 2022-2028 has equally provided for defined locations where wind energy projects may variously be supported, deemed open for consideration or excluded. The proposed development is in an identified exclusion zone for wind energy. In this context, it is considered that the proposed development would materially contravene Policy Objective UTL 13 of the Waterford City and County Development Plan 2022-2028.

   Furthermore, having regard to the totality of the documentation on file, including submissions received, the Board determined that no evidence has been provided which would support a material contravention of the Waterford City and County Development Plan 2022-2028 in this case.

   In reaching this conclusion, the Board considered relevant renewable energy policy in the statutory development plan, and in applicable European, national

and regional policy and guidance, and determined that a refusal of permission in this case would not militate against the wider ability for planning consent to be secured for wind energy proposals in County Waterford, subject to the principles of proper planning and sustainable development and consistent with applicable development plan policy and objectives, and accounting for European, national and regional policy and guidance, including consistency with the national Climate Action Plan. In this regard it is considered that the proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

2. The subject site is located within an upland area designated 'Most Sensitive' area on the Landscape and Seascape Character Assessment, undertaken to inform the development plan, in an area of scenic value. The proposed development by virtue of its layout and scale would adversely interfere with the intrinsic character, integrity and distinctive qualities of the landscape setting which it is considered necessary to preserve under the Waterford City and County Development Plan 2022-2028. The proposed development would therefore be contrary to Policy Objective LO2 'To protect the landscape and natural assets of the County by ensuring that proposed developments do not detrimentally impact on the character, integrity, distinctiveness or scenic value of their area and ensuring that such proposals are not unduly visually obtrusive in the landscape, in particular, in or adjacent to the uplands, along river corridors, coastal or other distinctive landscape character units'. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

3. The proposed development would result in the direct loss of 7.25ha of dry heath (4030) habitat and 5.94ha of wet heath (4010), which are included in Annex I of the European Union Habitats Directive of 1992. These area of dry heath and wet heath form part of a wider habitat including the adjoining Comeragh Mountains SAC which supports nationally declining species, including Annex 1 species protected under the EU Birds Directive of hen

harrier, merlin and golden plover, as well as other bird species of high and medium conservation concern. Having regard to the direct loss of 7.25ha of Dry Heath habitat and 5.94ha of wet heath habitat, in addition to associated risk of displacement caused by the proposed turbines to ornithological receptors in this area, the Board is not satisfied that the proposed development will not result in a significant loss of biodiversity.

It is considered that the proposed development would be contrary to objectives ENV01, BD01, BD05 and BD07 of the operative development plan which seek to protect habitats listed in Annex I of the Habitats Directive, protect biodiversity and ecological connectivity, and achieve net gain in biodiversity enhancement and creation, and would be contrary to Article 4(4) of the Birds Directive (2009/147/EC) to avoid deterioration of habitats affecting protected birds. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Bríd Maxwell
Planning Inspector

12th December 2024

Appendix 1.

Appropriate Assessment Screening Determination Template

Screening for Appropriate Assessment

Screening Determination

Step 1: Description of the project

I have considered the proposed Coumnagappul Wind Farm, habitat enhancement lands, Grid Connection Route (GCR) and Turbine Delivery Route (TDR) in light of the requirements of S177U of the Planning and Development Act 2000 as amended.

The subject site is not located within or contiguous to any Natura 2000 sites nor is the proposal necessary to the management of any Natura 2000 site. The nearest Natura 2000 sites:

Comeragh Mountains SAC within 700m
Nier Valley Woodlands SAC 2.9km
Lower River Suir SAC 4.2km
Blackwater River Cork Waterford SAC 5.48km
Glendine Wood SAC 11km
Dungarvan Harbour SPA 12.74km
Mid Waterford Coast SPA 15.17km

The proposed development is described in section 2 of the NIS and the development is also summarised above at Section 3 of this report. In summary the proposal entails

- Construction of 10 no wind turbines with a blade tip height of 185m, a hub height of 104, and a rotor diameter of 162m.
- Construction of permanent turbine foundations and crane pad hardstanding areas and associated drainage.
- Construction of 25.43km of new internal access tracks and associated drainage infrastructure.
- Creation of 1 no new construction and operation access to the wind farm site.
- Construction of 1 no new construction and operation access to the permanent meteorological mast.
- All associated drainage and sediment control including interceptor drains, cross drains, sediment ponds and swales.
- Installation of new watercourse crossings including a 15m single span bridge crossing, an open bottomed culvert and a piped culvert.
- Removal and replacement of existing culverted watercourse and drain crossings along the cable route.
- Construction of 1 no permanent on site 110kV electrical substation and associated compound including, welfare facilities, electrical infrastructure, parking, wastewater holding tank, rainwater harvesting tank, security fencing
- All associated infrastructure services and site works including excavation, earthworks and spoil management.

- Development of 1 no on site borrow pit (150m Lx100mWx14mD) and associated ancillary drainage which will also act as a peat / spoil deposition area.
- 2 no temporary construction compounds and associated ancillary infrastructure including parking,
- Forestry felling of 5.4ha (53.995m2) to facilitate construction and operation of the proposed development.
- Installation of medium voltage electrical and communication cabling underground between the proposed turbines and the proposed on site substation and associated ancillary works.
- Installation of 22.47km of high voltage (110kV) and communication cabling underground between the proposed on site substation and the existing Dungarvan substation and associated ancillary works. The proposed grid connection cable works will include 6 no existing watercourse and drain crossings, three of which will be crossed by Horizontal Directional Drilling. The grid also includes the installation of 30 no pre-cast joint bays,
- Erection of 1 no permanent meteorological mast to a height of 110m above ground level with a 4m lighting pole on top.
- Temporary enabling works to accommodate turbine delivery.
- Load bearing surfaces and temporary watercourse and drain crossings.
- Temporary removal of road signage, utility poles bollards and fencing.

- A 10 year permission and a 40 year operational life from the date of commissioning of the entire windfarm is being sought.
- A permanent planning permission is being sought for the grid connection and 110kV substation as these will become an asset of the national grid under the management of Eirgrid and will remain in place upon decommissioning of the wind farm.

The development site is located within an area of farmland and upland heath within in the western foothills of the Comeragh Mountains (within 700m of the Comeragh Mountains SAC). Vegetation on site is dominated by wet heath with areas of dense bracken, exposed rock, agricultural grassland, conifer plantation and dry heath. The windfarm site is located within the Colligan and Nier river waterbody catchments.

The Grid Connection Route (GCR) is predominantly contained within the public road corridor with the exception of the start and finish points where cables will be terminated in the existing network substation at Dungarvan and the proposed on site substation.

The Turbine Delivery Route (TDR) is similarly confined to the road corridor with the exception of locations where temporary accommodation works are provided in private lands to facilitate the delivery of oversized loads.

Step 2: Potential impact mechanisms from the project [direct, indirect, temporary/permanent impacts that could occur during construction, operation and decommissioning]

- Direct impact causing habitat loss or deterioration. – Ex-situ habitat loss.

- Ex situ species disturbance or mortality
- Surface water pollution (silt/ hydrocarbon/ construction related) from construction works resulting in changes to environmental conditions such as water quality/ habitat degradation.
- Ground water pollution/ alteration of flows- effects on groundwater dependent habitats.
- Human disturbance/ noise/ lighting - resulting in disturbance and displacement effects to QI species.
- Barrier effect, collision risk, avoidance for mobile species
- Emissions (release to land, water or air)
- Invasive species Degradation as a result of introducing / spreading non-native invasive species.

Step 3: European Sites at risk

Table 1 European Sites at risk from impacts of the proposed project

Effect mechanism	Impact pathway/Zone of influence	European Site(s)	Qualifying interest features at risk
Habitat Loss / Deterioration A	No potential for direct effects on habitat loss deterioration given that the site does not lie within any European site. Hydrological connection via Shanballyanne and Nier River Lower River Suir Ballynaguilkee Lower stream - Finisk River Linear distance	Lower River Suir SAC (4.2km to WF 2km in stream distance TDR .3km from works to stream 3.3km instream) Blackwater River (Cork Waterford) SAC 5.48km to windfarm site 1.64km GCR Dungarvan Harbour SPA 12.74 windfarm site, 0.36km instream TDR 0.67km to GCR. 1.7m from water crossing Mid Waterford Coast SPA 15.17km to windfarm site Comeragh Mountains SAC 700m - Hydrological, geological and	Potential pathway for direct effect on QI Freshwater Aquatic QI species and habitats Otter as a result of ex-situ habitat loss disturbance within the development site if otter resting or breeding sites are present Potential for direct effect on SCI species as a result of ex situ habitat loss Potential threat to integrity of blanket

		geographical connectivity.	bog and wet heath habitats
Species Disturbance / Mortality B	Disturbance during construction works. Operational - risk to QI bird species	Lower River Suir SAC Blackwater River (Cork/ Waterford) SAC Hydrological connection Dungarvan Harbour SPA Mid Waterford Coast SPA	Otter. If present. Freshwater Aquatic QI species Wetlands and waterbirds Potential effect on SCI bird species
Surface Water pollution Surface water pollution (silt/ hydrocarbon/ construction related) from construction works resulting in changes to environmental conditions such as water quality/ habitat degradation C	Hydrological connection	Lower River Suir SAC Blackwater River (Cork/ Waterford) SAC Hydrological connection Dungarvan Harbour SPA Mid Waterford Coast SPA	Water Quality and water dependent habitats. Otter. SCI species– Potential to effect food resource
Human disturbance/ noise/ lighting - resulting in disturbance and displacement effects to QI species **B**	Hydrological connection	Lower River Suir SAC Blackwater River (Cork/ Waterford) SAC Dungarvan Harbour SPA Mid Waterford Coast SPA .	Mobile SCI species.

Barrier effect, collision risk, avoidance for mobile species **B**		Lower River Suir SAC Blackwater River (Cork/ Waterford) SAC Dungarvan Harbour SPA Mid Waterford Coast SPA	Collision risk during operational phase Vulnerability to mortality due to collision
Emissions (release to land, water or air) **C**	Run off from temporary material storage areas Inappropriate management of drainage of concrete areas leading to loss of contaminants to surface waters Sediment run off inappropriate peat storage could result in pollution to local drains and watercourses,	Lower River Suir SAC Blackwater River (Cork/ Waterford) SAC Dungarvan Harbour SPA Mid Waterford Coast SPA	Freshwater aquatic Qis and habitats Water quality Reduction in prey densities as result of water quality changes

The Comeragh Mountains SAC is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive [3110] Oligotrophic Waters containing very few minerals [3260] Floating River Vegetation [4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [7130] Blanket Bogs (Active)* [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [1393] Slender Green Feather-moss (Drepanocladus vernicosus). The integrity of the remaining areas of blanket bog and the general habitat diversity of the site are under threat from land use pressures such as grazing, burning, afforestation and leisure activities.

Lower River Suir SAC consists of the freshwater stretches of the River Suir immediately south of Thurles, the tidal stretches as far as the confluence with the Barrow/Nore immediately east of Cheekpoint in Co. Waterford, and many tributaries including the Clodiagh in Co. Waterford, the Lingaun, Anner, Nier, Tar, Aherlow, Multeen and Clodiagh in Co. Tipperary. The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive: [1330] Atlantic Salt Meadows [3260] Floating River Vegetation [6430] Hydrophilous Tall Herb Communities [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [91J0] Yew Woodlands* [1029] Freshwater Pearl Mussel

[1092] White-clawed Crayfish [1095] Sea Lamprey [1096] Brook Lamprey [1099] River Lamprey [1103] Twaite Shad [1106] Atlantic Salmon [1355] Otter.

The site is of particular conservation interest for the presence of a number of Annex II animal species, including Freshwater Pearl Mussel, White-clawed Crayfish, Salmon, Twaite Shad, three species of Lampreys - Sea Lamprey, Brook Lamprey and River Lamprey, and Otter. Parts of the site have also been identified as of ornithological importance for a number of Annex I (E.U. Birds Directive) bird species, including Greenland White fronted Goose, Golden Plover Whooper Swan and Kingfisher.

The **River Blackwater SAC** is selected as a special area of conservation for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive: [1130] Estuaries [1140] Tidal Mudflats and Sandflats [1220] Perennial Vegetation of Stony Banks [1310] Salicornia Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [3260] Floating River Vegetation [91A0] Old Oak Woodlands [91E0] Alluvial Forests* [1029] Freshwater Pearl Mussel [1092] White-clawed Crayfish [1095] Sea Lamprey [1096] Brook Lamprey [1099] River Lamprey [1103] Twaite Shad [1106] Atlantic Salmon[1355] Otter [1421] Killarney Fern. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species.

The **Dungarvan Harbour SPA** The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Great Crested Grebe, Light-bellied Brent Goose, Shelduck, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Knot, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank and Turnstone. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands, and as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds

The **Mid Waterford Coast SPA** is a Special Protection Area of special conservation interest for the following species: Chough, Peregrine, Cormorant and Herring Gull.

All other European sites can be excluded from further assessment due to distance, dilution effects, lack of hydrological connection and lack of ecological connection between the designated sites and the application site. (See summary table 3 below)

Step 4: Likely significant effects on the European site(s) 'alone'

This section of the assessment considers if there are significant effects alone and whether it is possible that the conservation objectives might be undermined from the effects of only the project.

Table 2: Could the project undermine the conservation objectives 'alone'					
European Site and qualifying feature	**Conservation objective (summary)**	**Could the conservation objectives be undermined (Y/N)?**			
		Effect A Habitat Loss Ex Situ	**Effect B Species disturbance mortality**	**Effect C Surface water pollution emissions**	
Comeragh Mountains SAC	To maintain or restore the favorable conservation status of habitats and species of community interest defined by a list of attributes and targets	**Yes**	**No**	**No**	
Lower River Suir SAC	To maintain the favorable conservation condition of the habitat in the SAC defined by list of attributes and targets.	**No**	**Yes**	**Yes**	
Black River (Cork /Waterford SAC)	To maintain or restore the favorable conservation condition of Kingfisher listed as Special Conservation Interest of this SPA.	**No**	**Yes**	**Yes**	
Dungarvan Harbour SPA	To maintain or restore the favorable conservation condition of species listed as Special Conservation Interest of this SPA.	**Yes**	**Yes**	**Yes**	
Mid Waterford Coast SPA	To maintain or restore the favorable conservation condition of species listed as Special Conservation Interest of this SPA.	**No**	**Yes**	**Yes**	
A potential pathway arises for indirect effect on aquatic habitats and species of the Lower River Suir SAC as a result of emissions to water. A potential for indirect effect on otter as a result of disturbance during construction activities has also been identified. A potential deterioration in water quality during construction operation and decommissioning has the potential for effect aquatic Qis.					

Likely significant effect on the Blackwater River (Cork / Waterford) SAC has been identified based on hydrological connection. Deterioration in water quality during construction, operation and decommissioning has potential to affect availability of food resource for QI species.

With regard to the Dungarvan Harbour SPA indirect effect to ex situ foraging species. SCI species are susceptible to habitat loss noise and human presence during construction and decommissioning stages and collision risk in the operational period.

With regard to Mid-Waterford Coast SPA SCI bird species are susceptible to habitat loss, noise and human presence during construction and decommissioning stage. During the operational stage collision risk and barrier effect.

With regard to the Comeragh Mountains SAC hydrological alterations arising from drainage and excavation works give rise to potential effects on the integrity of blanket bog and wet heath habitats.

I conclude that the proposed development would have a likely significant effect 'alone' on aquatic QIs of the River Suir SAC and River Blackwater (Cork / Waterford) SAC from effects associated with habitat loss / deterioration, water degradation and disturbance. Likely significant effects alone on QI species associated with Dungarvan Harbour SPA has been identified due to potential habitat loss, noise and human presence and vulnerability to mortality due to collision. With regard to the Mid Waterford Coast SPA potential effect arising from habitat loss noise and disturbance during construction and decommissioning and collision risk during the operational phase. With regard to the Comeragh Mountains SAC adopting the precautionary principle blanket bog and wet heath habitats are within the zone of influence.

An appropriate assessment is required on the basis of the effects of the project 'alone'. Further assessment in-combination with other plans and projects is not required at this time.

Overall Conclusion- Screening Determination

In accordance with Section 177U(4) of the Planning and Development Act 2000 (as amended) and on the basis of objective information

I conclude that the proposed development is likely to have a significant effect on the aquatic qualifying interests of the River Suir SAC and River Blackwater (Cork Waterford) SAC 'alone' in respect of effects associated with habitat loss and disturbance during construction and deterioration in water quality due to release of pollutants including suspended solids and hydrocarbons during construction, operation and decommissioning phases of the development. Likely significant effects alone on mobile QI species associated with Dungarvan Harbour SPA, Mid Waterford Coast SPA has been identified due to potential vulnerability to noise disturbance and mortality due to collision. Likely significant effects on blanket bog and wet heath habitats of the Comeragh Mountains SAC arise from excavation and drainage works.

It is therefore determined that Appropriate Assessment (stage 2) under Section 177V of the Planning and Development Act 2000 is required on the basis of the effects of the project ‘alone’.

Table 3 Summary table of European Sites within a possible zone of influence of the proposed development				
European Site	**List of Qualifying Interest / Special Conservation Interest**	**Distance from proposed development**	**Connections source Pathway Receptor**	**Considered further in screening**
Comeragh Mountains SAC (001952)	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) [3110] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Northern Atlantic wet heaths with Erica tetralix [4010] European dry heaths [4030] Alpine and Boreal heaths [4060] Blanket bogs (* if active bog) [7130] Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani) [8110] Calcareous rocky slopes with chasmophytic vegetation [8210] Siliceous rocky slopes with chasmophytic vegetation [8220] Hamatocaulis vernicosus (Slender Green Feather-moss) [6216]	740m	Annex 1 habitats within the site. (Potential for restoration of Annex 1 heath through appropriate management) hydrological, geological and geographical link. Connectivity and ecological continuity. Excavations and drainage – drying out of active bog and wet heath Upstream from any hydrological hydrogeological connectivity to TDR and GCR	**Yes**
Nier Valley Woodlands SAC (000668)	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]	2.9km	Having regard to the scale of the project and given the distance to the European site coupled with the fact that there are no mobile conservation interests associated and lack of ecological connectivity.	No

Lower River Suir SAC (002137)	Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Taxus baccata woods of the British Isles [91J0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355]	4.9km to closest turbine 2km in-stream distance from TDR Node (300m distance from works to stream across grassland) 3.3km in stream distance from TDR Node 25	The internal access tracks, turbine hardstandings and GCR are within the same sub-catchment and are hydrologically linked to the SAC via Shanballyanne and Nier rivers. The closest proposed works along the TDR will be non-invasive, being limited to some minor vegetation trimming / removal and laying of load bearing surfaces. There is potential for emissions release to the drainage network to ultimately enter the SAC and give rise to disturbance to mobile Qis. Aquatic Qis require particular environmental conditions such as physical habitat structure and water quality to support conservation objectives within the SAC. No connectivity between TDR nodes and the SAC	Yes

Blackwater River (Cork / Waterford) SAC (002170)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Perennial vegetation of stony banks [1220] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330] Mediterranean salt meadows (Juncetalia maritimi) [1410] Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0] Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] Austropotamobius pallipes (White-clawed Crayfish) [1092] Petromyzon marinus (Sea Lamprey) [1095] Lampetra planeri (Brook Lamprey) [1096] Lampetra fluviatilis (River Lamprey) [1099] Alosa fallax fallax (Twaite Shad) [1103] Salmo salar (Salmon) [1106] Lutra lutra (Otter) [1355] Trichomanes speciosum (Killarney Fern) [1421]	5.48km to closest turbine 1.64km to grid connection downstream distance of 2.2km from closest water crossing	No connectivitiy between the windfarm site and Blackwater River (Cork/Waterford). Proposed works along GCR. Where the GCR crosses the Ballynaguilkee Lower the existing culvert will be removed and instream works will be required. (Ballyngguilkee Lower Stream, enters the River Finisk c2.2km downstream, which forms part of the SAC. This may lead to sedimentation to downstream waterbodies. Potential emissions release to drainage network entering the SAC giving rise to disturbance to mobile QIs. No connectivity between TDR nodes and SAC.	

Glendine Wood SAC (002324)	Trichomanes speciosum (Killarney Fern) [1421]	11.06km to nearest turbine	No hydrological connectivitiy between the site, TDR nodes or GCR. No pathway for effect	No
Dungarvan Harbour SPA (004032)	Great Crested Grebe (Podiceps cristatus) [A005] Light-bellied Brent Goose (Branta bernicla hrota) [A046] Shelduck (Tadorna tadorna) [A048] Red-breasted Merganser (Mergus serrator) [A069] Oystercatcher (Haematopus ostralegus) [A130] Golden Plover (Pluvialis apricaria) [A140] Grey Plover (Pluvialis squatarola) [A141] Lapwing (Vanellus vanellus) [A142] Knot (Calidris canutus) [A143] Dunlin (Calidris alpina) [A149] Black-tailed Godwit (Limosa limosa) [A156] Bar-tailed Godwit (Limosa lapponica) [A157] Curlew (Numenius arquata) [A160] Redshank (Tringa totanus) [A162] Turnstone (Arenaria interpres) [A169] Wetland and Waterbirds [A999]	12.74km to nearest turbine 0.36km instream distance from TDR Node 6 (0.08km from works to stream across road/ grassland) 0.67km to Grid connection downstream distance	SCI species susceptible to habitat loss, noise and human presence during construction and decommissioinng stages. During the operational stage, the SCI bird species are highly susceptible to collision risk and barrier effect. Site is outside the core and maximum foraging range (of Dungarvan SPA SCIs. Majority of the site within the Colligan subcatchment. There is hydrological connectivity between the site, GCR and TDR nodes and the SPA via the Colligan River and there is potential for reduction in water quality due to its siltation as well as the spread of invasive species. This could have a negative impact on wetland habitats and food availability for waterbirds within the SPA.	Yes
Mid Waterford Coast SPA (004193)	Cormorant (Phalacrocorax carbo) [A017] Peregrine (Falco peregrinus) [A103] Herring Gull (Larus argentatus) [A184]	15.17km to nearest turbine No hydrological	During ornithological surveys peregrine falcon was recorded on eight occasions and was present in four of seven survey seasons. All observations pertain to individual birds mainly flying over	Yes

	Chough (Pyrrhocorax pyrrhocorax) [A346]	connectivity between windfarm site, TDR Nodes or GCR.	grassland moorland. Mean number of predicted collisions per year is 0.001 Herring Gull recorded on five occasions over survey period and present in two of seven survey seasons. Mean number of predicted collisions per year is 0.002. The site is outside the core foraging range of Dungarvan SPA for peregrine (2km) but within the peregrines maximum range of up to 18km.	